Hydrogeologic Investigation Report and Water-Quality Monitoring Plan

Oak Hammock Disposal
A Solid Waste Disposal Facility
Osceola County, Florida

Submitted to

Florida Department of Environmental Protection
Central District Office
Orlando, Florida

Prepared for

OMNI Waste of Osceola County, LLC
Kissimmee, Florida

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Contents

	Page
Statement of Geologic Review	iv
1.0 Introduction	1
2.0 Overview of Field Investigation and Data Collection Activities	2
3.0 Detailed Description of Work Performed	4
3.1 Test Drilling Program	4
3.1.1 Sonic Borings	4
3.1.2 Direct Push Soil Sampling	5
3.2 Piezometer Installation	6
3.3 Physical Testing of Formation Materials	7
3.4 Hydraulic Conductivity Determinations	8
3.5 Water-Level Measurements	8
3.6 Water-Quality Sampling	9
3.6.1 Drilling Water	9
3.6.2 Ground Water	10
3.6.3 Surface Water	11
3.7 Water Well Inventory	11
4.0 Physical Setting	13
4.1 Physiography, Topography and Drainage	13
4.2 Geologic Conditions	13
4.2.1 Lithology	13
4.2.2 Structural Features	14
4.3 Occurrence and Movement of Ground Water	15
4.3.1 Surficial Aquifer	15
4.3.1.1 Ground-Water Flow Direction	16
4.3.1.2 Ground-Water Flow Rate	16

4.3.1.3 Water-Level Fluctuations 17
4.3.2 Floridan Aquifer 18
4.4 Water-Quality Conditions 19
4.4.1 Ground-Water Quality 19
4.4.2 Surface Water Quality 20
5.0 Water-Quality Monitoring Plan 21
5.1 Ground-Water Quality Monitoring 21
5.1.1 Monitor Well Placements 21
5.1.2 Well Construction Details 23
5.1.3 Sampling Protocols/Parameters/Frequency/Reporting 24
5.1.4 Piezometer/Monitor Well Abandonment 24
5.2 Surface Water-Quality Monitoring 25
6.0 References 27

Tables

Table 1. Piezometer Construction Details

Table 2. Summary of Slug Test Data

Table 3. Piezometer Water-Level Measurements

Table 4. Summary of Drilling Water Analytical Results

Table 5. Summary of Ground-Water Quality Analytical Results

Table 6. Summary of Surface Water Quality Analytical Results

Figures

Figure 1. Site Location Map

Figure 2. Site Plan Showing Location of Sonic Borings, Direct Push Borings, Piezometers and Geologic Cross Sections

Figure 3. Generalized Geologic Cross Section A-A' (South-North)

Figure 4. Generalized Geologic Cross Section B-B' (East-West)

Figure 5. Generalized Geologic Cross Section C-C' (South-North)

Figure 6. Generalized Fence Diagram (Facing West)

Figure 7. Potentiometric Surface Map—Upper Surficial Aquifer/A-Zone—December 3, 2001

Figure 8. Potentiometric Surface Map—Upper Surficial Aquifer/A-Zone—February 8, 2002

Figure 9. Potentiometric Surface Map—Upper Surficial Aquifer/C-Zone—December 3, 2001

Figure 10. Potentiometric Surface Map—Upper Surficial Aquifer/C-Zone—February 8, 2002

Figure 11. Potentiometric Surface Map—Shell Zone—December 3, 2001

Figure 12. Potentiometric Surface Map—Shell Zone—February 8, 2002

Figure 13. Oak Hammock Hydrographs (DP-7, DP-8, SZ-1)

Figure 14. Location of Surface Water Sampling Locations and Water Supply Wells

Figure 15. Proposed Ground-Water Monitor Well Locations

Attachments

Attachment 1. Lithologic Logs and Piezometer Construction Details

Attachment 2. PSI Laboratories—Permeability, Grain Size and Porosity Determinations

Attachment 3. Graphical Plots of Slug Test Data (Bouwer and Rice)

Attachment 4. Accutest Laboratories—Analytical Testing Results—Drilling Water, Ground Water and Surface Water Samples

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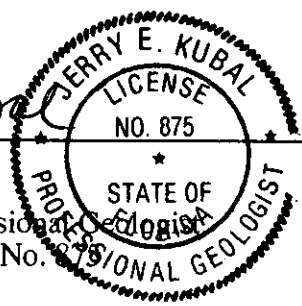
Statement of Geologic Review

In accordance with Chapter 492.111(3), Florida Statutes and Sections 62-701.410(1) and 62-701.510(2)(a), Florida Administrative Code, the geologic portions of this document have been prepared by and/or under the supervision and review of the below signed Florida Licensed Professional Geologist.



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1.0 Introduction

Kubal-Furr & Associates (Kubal-Furr) has been retained by OMNI Waste of Osceola County, LLC (OMNI), to conduct site investigations and to prepare this hydrogeologic investigation report and monitoring plan for its proposed Oak Hammock Solid Waste Disposal Facility (Oak Hammock) located in Osceola County, Florida (Figure 1). This report has been prepared in support of OMNI's solid waste permit application and in compliance with the hydrogeologic investigation requirements specified in Chapter 62-701.410, F.A.C, and water quality monitoring requirements of Chapter 62-701.510, F.A.C.

Information presented in this report includes a description of geologic conditions, occurrence and movement of ground water, aquifer characteristics, ground and surface water quality, and other data to support the permit application. In addition, it includes a ground water and surface water quality monitoring plan to be implemented upon permit issuance and prior to any waste being accepted at the site.

2.0 Overview of Field Investigation and Data Collection Activities

Field activities conducted at Oak Hammock in support of the hydrogeologic report and water-quality monitoring plan were conducted during the period from October 2001 through February 2002. Activities consisted of test drilling, piezometer installation, water-level measurements, slug testing, ground-water sampling and surface water sampling. A more detailed discussion of the individual field activities is presented in the following sections.

The general scope and sequence of field data collection for Oak Hammock consisted of the following tasks:

- Installation of three "deep" sonic borings (SB-1, SB-2 and SB-3, Figure 2) to determine the thickness and lithology of the surficial aquifer and to locate the top of the Hawthorn Group.

- Collection of two Shelby tube samples from the Hawthorn Group for laboratory analysis of vertical hydraulic conductivities.

- Collection of shallower, direct-push, macrocore samples at 11 locations (DP-locations, Figure 2) to further define site-wide lithology; to locate the top of the first clay layer/confining unit ("intermediate clay") beneath the site; and, for grain size and porosity determinations of upper surficial aquifer formation materials.

- Collection of three Shelby tube samples of the intermediate clay for laboratory analysis of vertical hydraulic conductivities.

- Installation of 27 piezometers (DP- and SZ-locations, Figure 2) and determination of hydraulic characteristics of the upper permeable units beneath the site.

- Collection of water levels from all piezometers on three occasions (November 30, 2001, December 3, 2001 and February 8, 2002) to construct potentiometric surface maps, establish ground-water flow direction and hydraulic gradients in the upper permeable units beneath the site (Figures 7 through 12).

- Slug testing of 13 piezometers distributed vertically and horizontally across the site (5 upper surficial A-zone, 5 upper surficial C-zone and 3 shell zone piezometers) to determine hydraulic conductivities in the upper permeable units (Table 2 and Attachment 3).

- Collection and analysis of samples from 10 piezometers (5 upper surficial A-zone and 5 upper surficial C-zone piezometers) to establish general, sitewide ground-water quality conditions (Table 5 and Attachment 4).

- Installation of pressure transducers in a three piezometer cluster (DP-7, DP-8, and SZ-1, Figure 2) for the collection of periodic water-level measurements which were used in the construction of long-term hydrographs (Figure 13).

- Collection and analysis of four surface water samples (SW-1 through 4, Figure 14) to establish background surface water quality (Table 6 and Attachment 4).

3.0 Detailed Description of Work Performed

3.1 Test Drilling Program

Test boring and soil sample collection were performed using two different drilling techniques including sonic drilling and direct push technology (i.e., GeoProbe™). The test borings were installed to determine the lithologic units beneath the landfill footprint; the presence of confining and/or semiconfining units beneath the site; and, to collect formation samples for physical testing of hydraulic conductivity, grain size and porosity.

3.1.1 Sonic Borings

Three test holes were drilled by the Boart Longyear Company using the sonic drilling method at the locations shown on Figure 2 (SB-1, SB-2, SB-3). Sonic drilling was conducted to collect lithologic information on the formation materials beneath the site and to "tag" the top of the Hawthorn Group. The Hawthorn is the principal confining unit separating the uppermost, surficial aquifer system from the underlying Floridan aquifer. Confirmation of the presence and depth of the Hawthorn beneath the site was important for both its hydrogeologic significance and use in engineering settlement calculations.

Sonic boring was conducted during the period October 30 - November 2, 2001. At each sonic boring location, a continuous, 4-in core sample was collected from land surface down into the upper 10- to 15-ft of the Hawthorn Group. Sampling occurred in 10-ft intervals, with each core sample being extruded into 5-ft long clear, flexible plastic casings which were cut open to allow for viewing by the field geologist. Lithologic descriptions of the core samples were prepared as collected and the samples were later placed in wooden core boxes and stored for future reference.

A literature search and review of regional and local geologic publications which included this part of Osceola County indicated that the top of the Hawthorn in this area was expected to be encountered approximately 150-ft to 160-ft below land surface (bls). The top of the Hawthorn Group varied from the south to the north and east across the site and was encountered at depths of approximately 169-ft bls at SB-1, 129-ft bls at SB-2 and 146-ft bls at SB-3. Complete lithologic descriptions of formation materials encountered at the sonic boring locations is presented in Attachment 1. Generalized geologic cross sections prepared from the sonic boring logs are shown on Figures 3, 4 and 5, while a generalized fence diagram is shown on Figure 6.

Once the Hawthorn was encountered at each sonic boring location, an attempt was made to collect Shelby tube samples for subsequent testing of vertical permeability by the soils laboratory (PSI, Attachment 2). Shelby tubes were successfully pushed at locations SB-2 and SB-3. At location SB-1, the tube was crushed during pushing and upon retrieval the sample was unusable for permeability testing. Following collection of the Shelby tube samples, each sonic boring test hole was pressure grouted back to land surface, the boring was flagged and its location was later determined using a submeter GPS unit and by a registered land surveyor.

3.1.2 Direct Push Soil Sampling

The sonic boring information was reviewed prior to direct push sampling and piezometer installation to better define permeable zones, target depths and lithologic units of interest across the entire disposal site. The focus of the direct push sampling was to collect samples at each piezometer location/cluster down to the top of the first confining unit/clay layer (i.e., the intermediate clay) identified by the sonic borings. This intermediate clay layer, positioned above the Hawthorn Group, was generally encountered at from 55-ft to 70-ft bls.

In addition to the three sonic borings installed by Boart, samples were collected with a direct push, GeoProbe™ drilling rig at 13 additional locations shown on Figure 2. The direct push drilling was done by Precision Sampling during the period from November 5th to November 28th, 2001. The piezometer locations shown on Figure 2 represent either a single, shallow (15-ft) piezometer (e.g., DP-13); a shallow and deep (50-ft) piezometer pair (e.g., DP-1, DP-2); or a three piezometer cluster consisting of a shallow, deep and "shell zone" (72- to 78-ft) piezometer (e.g., DP-7, DP-8, SZ-1). One direct push sample was collected at the location of each piezometer pair or cluster location shown on this figure (i.e., 11 discrete, direct push locations) and therefore, the direct push lithologic logs provided in Attachment 1 are identified by reference to a DP location (e.g., DP-1/2, DP-18/19, etc.). No direct push samples were collected at the single, shallow piezometer locations (i.e., DP-13 and DP-24).

At each direct push location, continuous macrocore samples were collected and described in the field. The macrocore samples were collected in 1.5-in diameter by 4-ft long, clear butyrate "sleeves" which were cut in half and split lengthwise for viewing by the field geologist. After the samples were logged, the sample ends were capped and placed in wax coated, cardboard sample boxes for storage and future reference. The lithologic descriptions from the 11 direct push samples are provided in Attachment 1 along with the 3 sonic boring logs.

At five direct push locations distributed across the disposal site (i.e., DP 1/2, DP 5/6, DP 7/8, DP 20/21 and DP 22/23), ten soil samples were selected from intervals screened by the upper surficial A-zone and C-zone piezometers (five each from the 14- to 16-ft samples and 46- to 48-ft samples) to be analyzed by PSI Laboratories of Tampa for grain size and porosity. The grain size and porosity determinations are provided in Attachment 2.

3.2 Piezometer Installation

Based on information collected during the sonic and direct push sampling events, piezometers were installed to establish the occurrence and movement of ground water and to determine aquifer characteristics. Ground-water samples were also collected from 10 of the piezometers to provide an indication of general, site-wide, water-quality conditions although this was a secondary purpose and the piezometers are not intended to serve as long-term, water-quality monitoring points. Background water quality will still need to be established prior to the site accepting any waste as provided by rule (Chapter 62-701.510, F.A.C.) and as described in the Water-Quality Monitoring Plan, Section 5.

During a project status/kick-off meeting with the Department of Environmental Protection (DEP) Central District Office in Orlando on November 1, 2001, piezometer locations and depths were proposed to the DEP staff based on the preliminary sonic boring data and the conceptual configuration of the landfill footprint. The DEP concurred with an approach consisting of placing piezometers at locations spread across the site in up to three permeable zones: the upper surficial aquifer at depths of 15-ft ("A-zone") and 50-ft ("C-zone") bls; and, in the permeable "shell zone" encountered beneath the first clay/confining unit (intermediate clay) at depths of 72-ft to 78-ft bls. Installation of piezometers in these permeable zones was considered important in order to establish direction and rate of ground-water movement, hydraulic gradients and the hydrologic relationship of the upper surficial aquifer and the shell zone.

A total of 27 piezometers (DP- and SZ-locations, Figure 2) were installed by Precision Sampling during the period from November 5th to November 28th, 2001. Of the 27 piezometers, 13 were installed in the upper surficial aquifer/A-zone (15-ft bls); 11 were installed in the upper surficial aquifer/C-zone (50-ft bls); and, 3 were installed in the shell zone (from 72-ft to 78-ft bls). The piezometers were installed using hollow-stem augers and all were constructed of 2-in diameter, schedule 40 PVC and 5-ft number 10-slot PVC screens. A sand pack (20/30 sand) was installed around the well screen to approximately 2-ft above the screen, followed by a 2-ft fine

sand cap (30/45 sand) and the remaining annular space was pressure grouted with a tremie line back to land surface. The piezometers were finished at the surface with an approximate 3-ft stick up inside a locked, protective steel casing. A summary of the piezometer construction details is provided in Table 1 and shown graphically in the boring logs contained in Attachment 1.

Each piezometer was developed by alternately pumping and surging with a submersible pump in an attempt to obtain a clear discharge. Because the upper surficial aquifer beneath the site consists principally of fine to medium silty sands, a number of piezometers (16 out of 24 in the upper surficial, and 1 out of 3 in the shell zone) remained turbid even after an extended period of development. While the turbidity did not compromise the piezometers use to accurately measure water levels, it did require that several ground-water samples collected for general, background water-quality information be filtered in the laboratory and run for dissolved as well as total metals. As described in the water-quality monitoring plan, the piezometers will be replaced by monitor wells installed around the first phase of the landfill for the purpose of obtaining high quality ground-water samples to establish background water quality. These wells will be installed and sampled during landfill construction and prior to the site receiving any waste.

3.3 Physical Testing of Formation Materials

Two Shelby tube samples were collected from the Hawthorn Group and three from the first confining unit/clay layer (intermediate clay) encountered beneath the site. A Shelby tube of the Hawthorn was pushed from 145-ft to 147-ft bls at sonic boring location SB-2 and from 155-ft to 157-ft at sonic boring location SB-3. A Shelby tube was also pushed at sonic boring location SB-1 from 175-ft to 177ft, but the tube was crushed during pushing and produced no useable sample.

Shelby tube samples were also collected from the locations where shell zone piezometers were installed. These included samples from 66-ft to 68-ft at SZ-1, from 60-ft to 62-ft at SZ-2, and from 64-ft to 66-ft at SZ-3. All Shelby tube samples were delivered to PSI Laboratories in Tampa for testing of vertical permeability in a back pressure permeameter.

The vertical permeabilities of the Hawthorn Group samples ranged from 4.49×10^{-6} cm/sec at SB-2 to 3.65×10^{-7} cm/sec at SB-3. Vertical permeabilities of the intermediate clay ranged from 3.03×10^{-4} cm/sec at SZ-2 to 6.27×10^{-7} cm/sec at SZ-3. Complete results of the vertical permeability testing by PSI Laboratories is contained in Attachment 2.

3.4 Hydraulic Conductivity Determinations

Twenty six slug tests (13 "slug in" and 13 "slug out") were conducted at piezometer locations distributed across the site to assess hydraulic conductivities of the upper surficial aquifer (A-zone and C-zone depths) and the shell zone. Both a slug in and a slug out aquifer test was performed at the following locations:

- Upper surficial aquifer A-zone piezometers: DP-2, DP-10, DP-11, DP-19, DP-22.
- Upper surficial aquifer/C-zone piezometers: DP-1, DP-9, DP-12, DP-18, DP-23.
- Shell Zone piezometers: SZ-1, SZ-2 and SZ-3.

A pressure transducer/data logger was lowered into each piezometer to be tested and once the water level had stabilized, a manual water-level measurement was taken prior to the test run. After the water level equilibrated, the data logger was started and the "slug in" test was begun by lowering a 1.5-in by 24.7-in "slug" into the piezometer with a nylon rope. The slug was constructed of galvanized steel pipe, filled with deionized water, capped on both ends, and decontaminated before insertion.

When the transducer readings equilibrated again, the "slug in" portion of the test was considered complete and the data logger continued to record water levels as the slug was removed, beginning the "slug out" portion of the test. Readings during the slug out portion of the test continued until the water levels equilibrated. All slug test data were compensated for barometric pressure and were analyzed using the Bouwer & Rice module of the "Super Slug™" aquifer slug test analysis software (Starpoint Software, Inc.). The graphical plots and analysis of each slug test are contained in Attachment 3 and the data are summarized in Table 2.

3.5 Water-Level Measurements

Water levels were collected from the entire piezometer network on three separate occasions during the field investigation (November 30, 2001, December 3, 2001 and February 8, 2002). The water levels measured on November 30, 2001 in the shell zone piezometers (SZ-piezometers), however, were collected prior to the SZ-piezometers being developed and this data set was not used to construct potentiometric surface maps for the site. The subsequent two complete rounds of

water-level measurements (December 3, 2001 and February 8, 2002), summarized in Table 3, were used to construct potentiometric surface maps of the upper surficial aquifer/A-zone (15-ft piezometers; Figures 7, 8), upper surficial aquifer/C-zone (50-ft piezometers; Figures 9, 10) and for the semiconfined, shell zone (Figures 11, 12).

A "data dump" was also performed at piezometer cluster DP-7, DP-8, SZ-1 on February 8, 2002. Each piezometer in this cluster was instrumented on December 3, 2001 with a pressure transducer collecting water levels four times per day. These data were downloaded for that approximate two month period and hydrographs constructed to assess trends and fluctuations in ground-water levels beneath the landfill footprint (Figure 13).

3.6 Water-Quality Sampling

Water-quality samples were collected during the field investigation to satisfy several objectives. These included collecting samples of drilling water to establish any drilling-related constituents which may have been introduced into the aquifer systems; ground-water sampling to assess general water-quality conditions at the site; and, surface water sampling to establish background surface water quality.

3.6.1 Drilling Water

Four drilling water samples were collected during the project and analyzed for volatile organics by EPA Method 8260B and semivolatile organics by EPA Method 8270C. All samples were analyzed by Accutest Laboratories of Orlando, a State-approved, NELAC-certified laboratory. Samples were collected from the following:

- The Boart Longyear water truck (Boart-1, Table 4) which was filled from a hydrant at the City of St. Cloud Landfill and which was used to drill all sonic borings.
- One each from Precision Sampling's Mobile Combo Rig 1 (Prec. Mob. Combo Rig, Table 4) and Mobile Combo Rig 2 (MC2, Table 4) which initially carried water to the site from their shop in Apopka. These same Mobile Combo rigs were used to install all piezometers at the site.

- After Precision's start-up water was depleted, all subsequent drilling water was derived from the westernmost "Ganarelli Ranch" well (GSW, Figure 14). A sample was collected

from this well, which is located approximately 3800-ft northeast of the landfill (Table 4). This well provided essentially all of the water used for drilling, piezometer installation, grouting and rig clean-up.

No volatile or semivolatile constituents were reported as present in the Ganarelli Ranch (GSW) well sample. The Boart and Precision Mobile Combo samples reportedly contained low levels of several disinfection by-products including bromodichloromethane, dibromochloromethane and chloroform, none of which exceeded any applicable water-quality standard or MCL. These constituents are typically found in chlorinated, municipal water supplies and were not unexpected. The Boart rig and one of the Precision Mobile Combo rigs (Prec. Mob. Combo Rig) also contained low levels of bis(2-ethylhexyl)phthalate, possibly from the fire hose used to fill the Boart water truck and either the hose or polyethylene storage tank used by Precision. Neither of the reported bis(2-ethylhexyl)phthalate results were above the MCL.

The analytical results for all drilling water samples are contained in Attachment 4 along with a data assessment summary, sampling logs, and chains of custody. A summary of the constituents detected in the drilling water samples is provided in Table 4.

3.6.2 Ground Water

In order to establish general, site-wide ground-water quality conditions in the upper surficial aquifer, piezometers distributed across the site were sampled using low-flow sampling techniques. Ten water samples (five each from the upper surficial aquifer A- and C-zones) and 1 duplicate were collected from piezometers DP-1, DP-2, DP-9, DP-10, DP-11, DP-12, DP-18, DP-19, DP-19 Dupe, DP-22 and DP-23. The samples were analyzed in the field for pH, temperature, conductivity, oxidation/reduction potential (ORP), dissolved oxygen and turbidity; and, in the laboratory (Accutest Laboratories) for total and dissolved metals, nitrates, volatile organics and semivolatile organics, herbicides and pesticides. The nitrates, herbicides and pesticides were analyzed specifically to assess any impacts to ground water from operation of the former sod farm which occupied the site.

As noted earlier, many piezometers remained turbid after development. In general, the A-zone and the shell zone piezometers developed out best but 17 of 27 piezometers remained turbid even after an extended period of development. Although the field indicator parameters stabilized in all of the piezometers sampled during low-flow purging, the turbidities remained above 20 NTUs in

most piezometers and it required that eight of the ten ground-water samples collected for general, background water-quality information be filtered in the laboratory and analyzed for dissolved metals as well as total metals. Piezometers DP-2 and DP-19, both A-zone (15-ft) piezometers, produced the samples with the lowest turbidities and were analyzed only for total metals.

The analytical results for all ground-water samples are contained in Attachment 4 along with a data assessment summary, sampling logs, and chains of custody. A summary of the constituents detected in the ground-water samples is provided in Table 5.

3.6.3 Surface Water

Surface water samples were collected in an attempt to establish background surface water quality at four locations (plus one duplicate). Three sampling locations were situated along Bull Creek (SW-1, SW-3 and SW-4) and one was located along an unnamed tributary to Bull Creek (SW-2) where it enters OMNI property (Figure 14). At the time the surface water samples were collected, there was no flow in either Bull Creek or the unnamed tributary. The surface water samples and results, therefore, represent standing, rather than flowing, surface water conditions.

All surface water samples were analyzed for the parameters specified in Chapter 62-701.510(8)(b), F.A.C. The analytical results for all surface water samples are contained in Attachment 4 along with a data assessment summary, sampling logs and chains of custody. A summary of constituents detected in the surface water samples is provided in Table 6.

3.7 Water Well Inventory

No potable water wells are located within 500-ft of the landfill footprint (Chapter 62-701-300(2)(c), F.A.C.) nor are there any potable water wells serving a community water system within 1000-ft (Chapter 62-702.300(2)(h), F.A.C.) of the footprint. A request was made of the South Florida Water Management District (SFWMD) to search its GIS system and database to identify any public or private water wells within a one mile radius of the limit of waste as provided in Chapter 62-701.410(1)(b), F.A.C.

The SFWMD has no record of any wells within this one-mile search radius although three water supply wells are known to exist within a mile of the limit of waste (Figure 14). Two of these wells (GSW and GANN) are located approximately 3800-ft northeast of the landfill footprint on

Ganarelli Ranch property. The third is located about 3500-ft to the west-northwest at the Bronson Ranch (5T).

The westernmost of the two wells at the Ganarelli Ranch (GSW) was used as a source of drilling water. The other well just to the east (GANN) is located at a residence and is used for domestic potable water purposes. Both the GSW and GANN wells appear to be 4-in in diameter. The Bronson Ranch well (5T) appears to be 2-in in diameter, but no other construction details regarding depth, date of installation, water level, etc. are available for any of these wells. That the SFWMD has no record of the existence of these wells may mean that completion reports were never submitted, or that these wells were installed prior to 1985, when the District started requiring completion reports.

4.0 Physical Setting

4.1 Physiography, Topography and Drainage

Physiographically, the Oak Hammock site, and most of Osceola County, resides atop the Osceola Plain, a distinct physiographic feature found along the Atlantic Coastal Lowlands in the central or mid-peninsular physiographic zone of Florida (Puri and Vernon, 1964; White, 1970). The major land forms in Osceola County and the site vicinity include the Pleistocene marine terraces formed by ancient seas which stood at different levels in the past. Topographically, the terraces are expressed as steplike flatlands bordered by scarps and ridges. The site, like most of the county, is situated atop the Penholoway Terrace. Successive terraces east of the site, toward the coast, include the Talbot and Pamlico, both lower in altitude and younger in geologic age, which were formed during progressively lower stands of sea level during Pleistocene times (Schiner, 1993).

Topographic relief across the site is slight and the land surface slopes gently from west to east towards Bull Creek. Land surface elevations range from just above 81-ft NGVD along the western part of the disposal area, to just below 79-ft NGVD along the east-central portion of the site. Drainage and surface water runoff from the disposal area is controlled for the most part by the shallow, man-made drainage swales and ditches which bisect the site and route water toward Bull Creek. In the vicinity of the site, Bull Creek is intermittent and not well defined.

4.2 Geologic Conditions

4.2.1 Lithology

Data from the sonic drilling and direct push test boring programs indicate that the disposal site is underlain by undifferentiated, Pleistocene to Recent deposits of unconsolidated sediments overlying the Miocene age Hawthorn Group. A generalized description of the lithology encountered beneath the site from land surface down to the top of the Hawthorn consists of:

- Sands and silty sands extending from land surface to a depth of about 55-ft in the southern part of the site (SB-2), thickening to about 65-ft in the northern and eastern part (SB-1, SB-3).

- A lower permeability, semiconfining unit (intermediate clay) consisting of sandy clay, clayey sand and sandy shelly clay approximately 10-ft (SB-2, SB-3) to 20-ft (SB-1) thick .

- A highly permeable "shell zone", approximately 6-ft (SB-1) to 23-ft (SB-3) thick, underlying the intermediate clay and consisting of a shell hash mixed with varying amounts of sand and clay.

- Clayey sands, sandy clays and silty sands mixed with varying amounts of shell fragments, approximately 47-ft (SB-2) to 78-ft (SB-1) thick, from the base of the shell zone to the top of the Hawthorn Group which was encountered at depths of from about 129-ft bls in the southern part of the site (SB-2) to about 169-ft bls in the northern part (SB-1).

- Only the upper 10-ft to 15-ft of the Hawthorn Group was penetrated during the sonic boring program which consisted of a stiff, olive gray clay, the upper part of which contained abundant phosphate nodules, minor shell fragments and an occasional shark's tooth.

Generalized geologic cross sections constructed from the sonic boring logs are presented in Figures 3, 4 and 5 and a generalized fence diagram is shown on Figure 6. While the drilling program concluded upon reaching the Hawthorn Group, a literature search indicates that the Hawthorn is estimated to be approximately 180-ft to 200-ft thick beneath the site. Underlying the Hawthorn is a thick sequence of limestones, dolomites and dolomitic limestones comprising the Floridan aquifer and extending to depths of several thousand feet.

4.2.2 Structural Features

Review of FEMA, U.S. Geological Survey and other seismic building zone maps indicate the Oak Hammock site, and all of Florida, to be seismically inactive. There are no nearby or near surface structural features, faults, sinkholes, or unstable areas affecting Oak Hammock's use as a disposal site. No cavities or problems with lost circulation were encountered during the test drilling program, no sinkholes are present at the site, nor has any sinkhole activity been reported. In this part of the county, the limestone bedrock is covered by a thick sequence (estimated to be more than 300-ft thick) of low permeability sediments and little, if any, recharge to the Floridan aquifer is occurring locally. These geologic conditions are not conducive to sinkhole development and the occurrence of sinkholes in such an area is highly unlikely.

The Oak Hammock site and much of Osceola County is located in an area identified by Puri and Vernon (1964) as the Osceola Low, a graben-like feature formed by an ancient fault system running along the Kissimmee River to the west and another along the St. Johns River to the east. This faulting produced a small amount of vertical displacement in the Eocene Age limestones comprising the upper Floridan aquifer which was later infilled by the Miocene age deposits overlying the limestones. These structural features are more than 10 miles from the site and have seen no active displacement since the Eocene. They may have an effect on ground-water movement in the Floridan aquifer but are not significant with respect to use of the Oak Hammock site as a disposal facility.

4.3 Occurrence and Movement of Ground Water

Ground water beneath the site occurs in two distinct water-bearing units: an uppermost, or surficial aquifer generally occurring under water-table conditions; and, the underlying Floridan aquifer which occurs under confined, or artesian, conditions and which is divided into the upper and lower Floridan aquifer. The surficial and the Floridan aquifer are separated by the low permeability sediments comprising the Hawthorn Group which confine the Floridan under artesian conditions and preclude hydraulic communication between these two aquifer systems.

4.3.1 Surficial Aquifer

Ground water occurs under water-table conditions in the permeable sands and silty sands in the upper 50-ft to 60-ft (upper surficial aquifer) which overly the first low permeability, confining/semiconfining unit (intermediate clay) encountered beneath the site (Figures 3, 4 and 5). Ground water also occurs in the shell zone underlying the intermediate clay which tends to confine, or semiconfine, the shell zone locally. Comparison of water levels in the three piezometer cluster, DP-7, DP-8 and SZ-1, indicates that this intermediate clay unit supports a downward vertical hydraulic gradient of about half a foot between the upper surficial aquifer and the shell zone.

Although not evaluated during the present hydrogeologic investigation, ground water also occurs in the more permeable sediments underlying the shell zone and overlying the Hawthorn Group (i.e., lower surficial aquifer, Figures 3, 4 and 5). Primary emphasis was placed on investigating the uppermost permeable zones (upper surficial aquifer A- and C-zones) because these are the aquifers reasonably expected to be affected by the landfill should any water-quality impacts ever occur.

4.3.1.1 Ground-Water Flow Direction

All piezometers were surveyed in and each measuring point (MP) elevation was referenced to NGVD of 1929 (Table 1). A complete round of water-level measurements from all piezometers was collected on two occasions: December 3, 2001 and February 8, 2002 (Table 3). These water-level measurements were used to construct potentiometric surface maps for the upper surficial aquifer/A-zone (Figures 6 and 7), upper surficial aquifer/C-zone (Figures 8 and 9) and the shell zone (Figures 10 and 11).

As inferred from the potentiometric surface maps for these two measurement periods, the horizontal direction of ground-water movement in the three permeable zones monitored is generally from west to east across the site, in the direction of Bull Creek. Although there is a downward hydraulic gradient across the confining unit between the upper surficial aquifer and the shell zone, ground-water movement is predominantly horizontal beneath the site, with no substantial vertical component of flow. While a small amount of ground water from the very upper portion of the surficial aquifer may at times discharge locally to Bull Creek, the creek is not incised deeply enough along this reach to act as a major discharge point for the surficial aquifer. Most of the ground water in the upper surficial aquifer and shell zone would be expected to continue to flow beneath Bull Creek towards the east, to major regional or subregional discharge points such as Crabgrass Creek or the St. Johns River.

4.3.1.2 Ground-Water Flow Rate

Data from the slug testing, laboratory testing and potentiometric surface mapping were used to estimate ground-water flow rates in the upper surficial aquifer (A- and C-zones) and the shell zone. Using the values summarized in Table 2, the average hydraulic conductivities for the upper surficial A-zone and C-zones were calculated to be approximately 5.28 ft/day (feet per day) and 6.38 ft/day, respectively. An average of the hydraulic conductivities for the shell zone wells was calculated to be 16.09 ft/day.

Porosity testing by the laboratory (Attachment 2) on remolded samples of upper surficial aquifer materials produced values ranging from 42.6% to 50.5%. Because in-situ soils would be expected to be more dense, the laboratory estimated in-situ porosity values on the order of 0.3 to 0.35. For the purposes of flow rate calculations, an assumed effective porosity of 0.25 was utilized for the upper surficial aquifer based on the nature of the materials, published literature

values and laboratory data. No porosity testing was performed on the shell zone samples but visual observation would indicate the bulk porosity of this zone is greater than that for the overlying upper surficial sediments. An assumed effective porosity value of 0.35 was used in the flow rate calculations for the shell zone.

The gradients in the upper surficial aquifer across the northern part of the site are slightly steeper than in the south and were used in the flow rate calculations. The gradients in the shell zone are fairly uniform across the site and between the two measurement periods. Because the direction of ground-water movement and hydraulic gradients in the upper surficial and shell zone for the two measurements periods were essentially the same, the gradients from December 3, 2001 selected as representative of site conditions. The gradients were calculated to be approximately 1.76×10^{-3} ft/ft in the upper surficial A-zone between DP-6 and DP-4; approximately 1.67×10^{-3} ft/ft in the upper surficial C-zone between DP-5 and DP-3; and, approximately 4.19×10^{-4} ft/ft in the shell zone between SZ-2 and SZ-3.

Ground-water flow rates were calculated using a form of Darcy's Law in which velocity (v) equals hydraulic conductivity (k) times hydraulic gradient (i) divided by the effective porosity (e). The flow rates on December 3, 2001 in the upper surficial aquifer A- and C-zones were calculated to be approximately 3.7×10^{-2} ft/day (13.6 ft/yr) and 4.26×10^{-2} ft/day (15.6 ft/yr), respectively. The flow rate in the shell zone on December 3, 2001, was calculated to be approximately 1.93×10^{-2} ft/day (7.03 ft/yr).

4.3.1.3 Water-Level Fluctuations

The surficial aquifer is recharged by rainfall and water levels respond rapidly to local precipitation events. In order to obtain information on long-term water-level fluctuations beneath the site, one of the piezometer cluster locations (DP-7, DP-8, and SZ-1) consisting of an A-zone (DP-7) and C-zone (DP-8) surficial and a shell zone (SZ-1) piezometer were instrumented with pressure transducers. The transducers were installed on December 3, 2001 and they have been recording water levels in this three well cluster four times per day. On February 8, 2002, a "data dump" was performed and the transducer data was used to construct the hydrographs shown on Figure 13. Water levels in the A-zone (15-ft) and the C-zone (50-ft) piezometers are very similar; they fluctuate in tandem in response to precipitation events. The deeper, shell zone piezometer also

responds in a similar but more subdued fashion and the hydrographs would indicate a hydraulic connection between the upper surficial and shell zone and leakance across the intermediate clay.

During the two month period between December 2001 and February 2002, water levels in the uppermost aquifer fluctuated from about 0.5-ft to 2.5-ft bls. Although the period of record developed to this point represents a portion of the classical dry season in Florida, water levels in the uppermost aquifer respond quickly following rainfall events and were noted to rise as much as 2-ft in just over a 24-hr period in mid-January 2002. The water levels receded about 1-ft during the following week, and another foot in the following two weeks. While the water table remained about 6-in below land surface during the period of record, it is expected to rise to land surface at times during the wet season, particularly in periods when back-to-back or sustained rainfall events occur.

4.3.2 Floridan Aquifer

Although the Floridan aquifer was not investigated directly during the field investigation, a description of this aquifer system is provided in order to place the site into an overall regional context. The Floridan aquifer occurs under confined or artesian conditions beneath the site. Based on a literature review, the top of the Floridan is expected to be encountered approximately 350-ft bls in this area. The shallower, surficial aquifer and the Floridan aquifer are separated by a low permeability unit which is referred to in the literature as the intermediate confining unit. This intermediate unit is composed of Miocene age, Hawthorn Group sediments consisting principally of clays, sandy clays and silty sands, intermixed with thin, discontinuous shell beds and limestone lenses.

The Floridan aquifer supplies the majority of the more than 60 million gallons of ground water estimated to be used in Osceola County each day. This aquifer system is very productive and is capable of supplying high demand irrigation and municipal needs at rates in the hundreds of gallons per minute range. Regional ground-water movement in the upper Floridan aquifer across Osceola County is an easterly direction from major recharge areas along the Lake Wales Ridge in Polk County, toward discharge areas along the Intracoastal Waterway and the Atlantic Ocean.

Chloride and dissolved solids concentrations in the Floridan aquifer are generally lowest in recharge areas in the northwest part of the county and highest in the east and northeast part of the county. The concentration of dissolved solids in this part of Osceola County are reported to

increase minimally with depth in the upper Floridan, variably in the middle semiconfining unit, and rapidly in the lower Floridan aquifer. The Oak Hammock site is situated in an area where the Floridan aquifer is of marginal to poor water quality, with the concentration of several secondary drinking water parameters such as total dissolved solids and chlorides being near, or exceeding, the maximum contaminant levels of 500 mg/L and 250 mg/L, respectively.

The Oak Hammock site is considered a poor recharge area for the Floridan aquifer by the U.S. Geological Survey, with recharge rates estimated to be from 0-in to 3-in per year. Potentiometric surface maps of the Floridan aquifer place the water level beneath the site at about 40-ft to 45-ft NGVD. This water level is approximately 35-ft to 40-ft lower than that in the overlying surficial aquifer, a head difference which is supported by the low permeability, intermediate confining unit (i.e., Hawthorn Group) separating these two aquifer systems.

4.4 Water-Quality Conditions

To obtain information on general, site-wide water quality conditions, 10 ground-water samples (plus one duplicate) and 4 surface water samples (plus one duplicate) were collected during the field investigation. The complete results of analyses are contained in Attachment 4, and are summarized in Table 5 (ground water) and Table 6 (surface water).

4.4.1 Ground-Water Quality

Ground-water samples were collected on December 4-5, 2001 using low flow sampling procedures from the five upper surficial piezometer pairs: DP-1/DP-2, DP-9/DP-10, DP-11/DP-12, DP-18/DP-19 and DP-22/DP-23 (Figure 2). The samples were analyzed in the field for pH, temperature, conductivity, ORP, dissolved oxygen and turbidity; and, in the laboratory (Accutest Laboratories) for total and dissolved metals, nitrates, volatile organics and semivolatile organics, herbicides and pesticides. As noted earlier, eight piezometers produced turbid samples which were later filtered by the lab and analyzed for dissolved as well as total metals.

In general, the ground-water quality across the site was found to be good. No pesticides or herbicides were detected, and nitrates were not reported as present in the ground water with the exception of an estimated value of 0.42 mg/L (milligrams per liter) at DP-1. As expected, a number of total metals results exceeded an MCL, which is related more to the condition of the turbid samples rather than in-situ ground-water quality. The only dissolved metals reported to exceed an

MCL were aluminum and iron. The only other parameters reported as present, none of which exceeded an MCL, were: (1) toluene at DP-10 (0.00053J mg/L), DP-22 (0.0021 mg/L) and DP-23 (0.0025 mg/L); (2) acetone at DP-18 (0.0252JX mg/L); and, (3) 3&4-methylphenol at DP-19 (0.0036J) and DP-19 Dupe (0.0029J).

4.4.2 Surface Water Quality

Four surface water samples were collected as shown on Figure 14 and analyzed for the parameters specified in Chapter 62-701.510(8)(b), F.A.C. As noted earlier, these samples were collected on Bull Creek and an unnamed tributary during a period of no-flow and represent standing water grab samples.

All samples exceeded the surface water standard for iron. One sample (SW-3) exceeded the coliform standard; one exceeded the pH standard (SW-2); and two exceeded the dissolved oxygen standard (SW-1 and SW-3). Toluene was the only volatile reported as present at SW-2 (0.0012J mg/L) and SW-4 (0.0164 mg/L).

5.0 Water-Quality Monitoring Plan

Based on the information collected during the field investigation and described in the hydrogeological investigation report, a ground and surface water quality monitoring plan has been prepared in accordance with the provisions of Chapter 62-701.510, F.A.C.

5.1 Ground-Water Quality Monitoring

While the hydrogeological investigation encompassed the entire disposal area and surrounding vicinity, the ground-water quality monitoring plan is focused specifically on the portion of the site where disposal will occur during the five-year life of the initial operating permit. This area includes cells 1-4 in the northern part of the site as shown on Figure 15. A detection monitor well network consisting of 45 wells in 15 well clusters (i.e., 3 monitor wells per cluster) is proposed for the initial operating permit. Figure 15 also shows the locations of proposed monitor wells/clusters which are described in more detail below.

5.1.1 Monitor Well Placements

In accordance with Chapter 62-701.510(2)(b), F.A.C. detection monitor wells will be installed at appropriate locations and depths to yield ground-water samples from the aquifer(s) reasonably expected to be affected by the landfill; in this case, the upper surficial aquifer system located above the first confining unit (intermediate clay) encountered beneath the site (Figures 3, 4, 5). The rationale for selecting the placements shown on Figure 15 include the following considerations:

- The lithology of the formation materials above the first confining unit (intermediate clay) were fairly uniform and found to consist principally of fine to medium sands and silty sands. Some variation in color, grain size and silt content were noted but the nature of the materials was consistent across the site and no indications of preferential flow paths were identified.

- Based on the horizontal and vertical hydraulic gradients, conductivities, flow rates and nature of the materials in the upper surficial aquifer, transport of any constituents entering the ground-water system would be through advection and lateral and vertical dispersion. The lithology and ground-water conditions are such that no discrete, preferential flow

zones were identified that would dictate well placement vertically or horizontally in the upper surficial aquifer system.

- All disposal of waste will occur above grade, on top of a double composite liner with a leachate collection system. Prior to being lined, the disposal area will be elevated above land surface and crowned so that any leachate generated will move toward the perimeter where it will collect in leachate collection sumps. The material used to build the sub-base beneath the disposal area will be dredged from the borrow pit and deposited as a slurry or placed in the dry. Although existing site conditions indicate a direction of ground-water movement from west to east across the site, placement of fill material in a wet condition will affect ground-water movement such that, at least temporarily, there may be no predominant upgradient locations to monitor and flow may be radial off of, and away from, the disposal area.

- Based on an analysis of the liner and landfill design (Fluet, 2000), it is highly unlikely that leachate will leak through the double composite liner and enter the ground-water system beneath the disposal facility. Considering the hydrogeologic conditions and landfill design, the locations most likely to experience water-quality impacts, should they occur, would be at the sumps which collect any leachate before it is pumped out and sent off for treatment. Therefore, the primary consideration in locating monitor wells was to situate a cluster at the location of each leachate collection sump (locations MW-1, MW-3, MW-6, MW-9, MW-11 and MW-13) and to place supplemental well clusters between sump locations based on their distribution and distances.

- For the purposes of monitor well placement for the initial five year permit, it is assumed that at least temporarily, the entire perimeter of the area to be filled will be considered as downgradient for the purposes of detection monitoring. Therefore, supplemental monitor well clusters have been located between leachate collection sumps such that the spacing between wells is no greater than 500-ft apart, in accordance with the provisions of Chapter 62-701.510(3)(d)3, F.A.C.

500' spacing maximum

- Vertically, three wells will be installed at each ground-water monitoring location shown on Figure 15. Based on discussions with the FDEP in a meeting held on March 1, 2002, wells will be installed across the water table to monitor the upper surficial aquifer/A-zone (wells designated with an "A"); in the upper surficial aquifer/C-zone above the intermediate clay

(wells designated with a "C"); and, at a position intermediate to the A-zone and C-zone wells (wells designated with a "B"). Should any water-quality impacts occur, this vertical placement should allow for the detection of dissolved constituents as well as any constituents that are lighter or heavier than water.

- In order to comply with the provisions of Chapter 62-701(3)(a), F.A.C. requiring placement of detection wells within 50-ft of the limit of waste, the well clusters will be installed through the berm which forms the perimeter access road around the disposal area (or through the cell-dividing interior dikes in the case of clusters at MW-14 and MW-15). This placement will allow the upper surficial aquifer A-wells to straddle the water table, which at times of the year is within 6-in or less of land surface. The top of the A-wells will be screened starting 2-ft above the existing, pre-development land surface to 8-ft below.

5.1.2 Well Construction Details

Proposed well construction details for the ground-water monitoring network are as follows:

- All wells will be installed using hollow-stem augers having a minimum inside diameter of 6-7/8-in. Wells will be constructed with 2-in PVC casing and attached well screen and all connections will be threaded, not glued. Well screen will be #6-slot (0.006-in), 10-ft in length. A fine (30/45) sand will be placed around the screen with a tremie pipe to a height of 3-ft above the top of the screen. The remaining annular space from the top of the sand pack to land surface will be grouted with a bentonite/cement mixture using a tremie line. The well casing will extend approximately 2.5-ft to 3-ft above land surface and will be covered with a PVC slip cap. The well installation will be completed at the surface by installing a protective steel casing and locking cap. The grout will be allowed to cure for approximately 24-hr at which time the wells will be developed by alternately pumping and swabbing the screen until a clear discharge is achieved.

- The A-zone upper surficial wells will be screened from 2-ft above the existing, pre-development land surface to a depth of 8-ft below.

- The C-zone upper surficial aquifer wells will be screened above the first confining unit (intermediate clay) which in this part of the site was encountered at approximately 65-ft bls. In order to screen the lower zone without breaching the intermediate clay, the bottom of the

well screens in the C-zone wells will terminate at a depth of 60-ft below existing land surface and therefore will be screened from 50-ft to 60-ft below existing, pre-development land surface.

- At the FDEP's request, monitor wells will also be installed to screen the intermediate zone between the A-zone and C-zone surficial aquifer wells. Therefore, the B-zone wells will be installed with screens extending from 24-ft to 34-ft below existing, pre-development land surface.

- Following installation of the detection monitor wells, their latitude and longitude will be established by a registered Florida land surveyor who will also determine top of casing measuring point elevations referenced to NGVD of 1929.

5.1.3 Sampling Protocols/Parameters/Frequency/Reporting

All ground-water sampling will be performed in accordance with Chapter 62-160, F.A.C. using FDEP low-flow purging and sampling techniques. In order to establish background water quality, the initial set of samples will be analyzed for the parameters specified in Chapter 62-701.510(8)(a), F.A.C. and Chapter 62-701.510(8)(d), F.A.C. Subsequent samples will be collected and analyzed semiannually for the parameters specified in Chapter 62-701.510(8)(a), F.A.C.

Based on the configuration and design of the landfill with respect to the property boundary and limit of waste, the detection monitor wells cannot be installed and background water quality further established until such time as the perimeter road and cell-dividing interior dikes are constructed. Once the perimeter road is completed, the monitor well clusters will be installed in the berm and interior dike at the proposed locations shown on Figure 15. All monitor wells will be installed, sampled and analyzed for the requisite background parameter list and these data will be submitted to the FDEP prior to the site receiving any waste.

5.1.4 Piezometer/Monitor Well Abandonment

During the initial five year permit, cells 1-4 will be constructed over piezometers DP-1, DP-2, DP-3 and DP-4. During site preparation activities, the protective steel casings around the piezometers will be removed, the casings will be dug out and cut off 1-ft below land surface and

the piezometers will be properly abandoned by pressure grouting the holes from the bottom back to land surface. All other piezometers unaffected by landfill operations during the initial five-year permit will remain in place and will be used to collect water-level data during the semiannual sampling events. As the landfill expands, all remaining piezometers will eventually be abandoned.

In addition to piezometer abandonment, six monitor wells at two of the interior cluster locations (i.e., A-, B- and C-zone wells at locations MW-14 and MW-15) will need to be abandoned when construction of future cells 5 and 6 commences. These wells will be abandoned as a precautionary measure to prevent potential ground-water quality impacts in the event they are destroyed or damaged during new cell construction. The monitor wells will be abandoned in accordance with the piezometer abandonment procedure described above and the FDEP will be provided with a schedule for this work as existing cells are filled and new cell construction begins.

5.2 Surface Water-Quality Monitoring

The engineering design of the stormwater management system provides for retention of stormwater runoff up to and including the 100-year storm event. No routine stormwater discharge is planned for the site and therefore there are no discrete discharge points planned along Bull Creek to designate as surface water monitoring stations.

During the field investigation, four surface samples were collected and analyzed for the parameters in Chapter 62-701.510(8)(b), F.A.C. in order to gather background surface water-quality data. Based on the configuration of the landfill, two of these locations (SW-3 and SW-4, Figure 14) are best situated to evaluate impacts from any potential discharge from the site. SW-4 is an upgradient location situated off site and northwest of the disposal area which will be used to establish surface water quality before it passes the disposal site. SW-3 is a downgradient location along Bull Creek at the point where it first crosses onto OMNI property east of the disposal site.

As noted earlier, Bull Creek is intermittent, and the surface water samples collected during the field investigation coincided with a period of no flow in the creek. In the future, an attempt will be made to collect surface water samples during the semiannual ground-water sampling events assuming Bull Creek is flowing at the time. No surface water sample will be collected during a semiannual sampling event in which the creek is not flowing. However, this does not preclude OMNI Waste from voluntarily sampling the creek on an irregular frequency during the rainy season, or at other times, when there is flow in Bull Creek.

The surface water samples collected at SW-3 and SW-4 will be analyzed for the parameters specified in Chapter 62-701.510(8)(b), F.A.C.

6.0 References

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Tables

Table 1. Oak Hammock Summary of Piezometer Construction Details

Piezometer[1,2/]	Approximate Depth (ft, bls)	Aquifer Monitored[3/]	Date Constructed	Measuring Point Elevation (ft, NGVD)	Land Surface Elevation (ft, NGVD)	Northing[4/]	Easting
DP-1	50	US/C	11/5/01	84.12	81.20	1,356,797.9136	624,537.7892
DP-2	15	US/A	11/6/01	84.11	81.20	1,356,802.9300	624,536.9614
DP-3	50	US/C	11/7/01	82.22	79.30	1,356,050.8461	625,213.9475
DP-4	15	US/A	11/6/01	82.24	79.30	1,356,053.8396	625,219.5786
DP-5	50	US/C	11/6/01	84.13	81.60	1,355,353.2515	624,128.0768
DP-6	15	US/A	11/6/01	84.23	81.60	1,355,356.3692	624,125.4511
DP-7	15	US/A	11/7/01	82.63	79.60	1,355,177.8832	625,941.5348
DP-8	50	US/C	11/7/01	82.78	79.60	1,355,182.2349	625,941.3094
DP-9	50	US/C	11/8/01	81.58	78.90	1,354,970.4078	626,691.2252
DP-10	15	US/A	11/8/01	81.59	78.90	1,354,970.1580	626,687.8415
DP-11	50	US/C	11/16/01	84.06	81.20	1,354,608.9961	625,190.2667
DP-12	15	US/A	11/12/01	84.18	81.20	1,354,604.5236	625,187.6552
DP-13	15	US/A	11/12/01	83.09	80.00	1,354,519.8616	626,168.2905
DP-14	15	US/A	11/8/01	81.97	78.90	1,354,321.3483	626,873.1896
DP-15	50	US/C	11/8/01	81.98	78.90	1,354,318.1582	626,873.3416
DP-16	15	US/A	11/9/01	82.57	79.50	1,354,048.1703	626,132.2304
DP-17	50	US/C	11/9/01	82.58	79.50	1,354,047.5803	626,135.3321
DP-18	50	US/C	11/19/01	84.38	81.20	1,353,592.4449	624,195.9020
DP-19	15	US/A	11/15/01	84.34	81.20	1,353,596.0691	624,200.3947
DP-20	15	US/A	11/12/01	83.07	79.80	1,353,034.6663	625,503.3252
DP-21	50	US/C	11/12/01	83.00	79.80	1,353,030.0119	625,502.8210
DP-22	15	US/A	11/9/01	81.00	78.30	1,353,637.7665	627,171.4866
DP-23	50	US/C	11/9/01	81.27	78.30	1,353,641.3083	627,170.8775
DP-24	15	US/A	11/12/01	82.22	79.20	1,353,736.2199	626,342.3984
SZ-1	78.3	SZ	11/28/01	82.43	79.60	1,355,170.2520	625,942.4306
SZ-2	72	SZ	11/27/01	83.16	79.80	1,353,030.4718	625,511.0984
SZ-3	75.9	SZ	11/28/01	81.27	78.30	1,353,629.4261	627,175.4544

Notes:
1 / Piezometer locations shown on Figure 2.
2 / All piezometers are 2-in diameter, Sch 40 PVC, with 5-ft, #10 slot screens
3 / US/A = Upper surficial aquifer/A-zone
US/C = Upper surficial aquifer/C-zone
SZ = Shell zone
4 / Northing and Easting based on Florida State Plane East NAD 1983

Table 2. Oak Hammock Summary of Slug Test Data

Piezometer[1/]	Approximate Depth (ft, bls)	Aquifer Monitored[2/]	Slug-in Hydraulic Conductivity (ft/day)[3/]	Slug-out Hydraulic Conductivity (ft/day)
DP-1	50	US/C	7.553	7.423
DP-2	15	US/A	5.745	5.458
DP-9	50	US/C	7.461	8.39
DP-10	15	US/A	4.63	5.255
DP-11	50	US/C	9.624	5.264
DP-12	15	US/A	7.786	6.873
DP-18	50	US/C	3.112	2.2
DP-19	15	US/A	5.044	4.223
DP-22	15	US/A	4.334	3.408
DP-23	50	US/C	7.048	5.69
SZ-1	78.3	SZ	3.321	3.413
SZ-2	72	SZ	35.04	30
SZ-3	75.9	SZ	19.09	5.665

Notes:
1 / Piezometer locations shown on Figure 2.
2 / US/A = Upper surficial aquifer/A-zone
US/C = Upper surficial aquifer/C-zone
SZ = Shell zone
3 / Graphical plots of slug test data are provided in Attachment 2.

Table 3. Oak Hammock Piezometer Water-Level Measurements

Piezometer[1/]	MP Elevation (ft, NGVD)	Measurement Date 11/30/01 DTW (ft below MP)	11/30/01 Water Level (ft, NGVD)	12/3/01 DTW (ft below MP)	12/3/01 Water Level (ft, NGVD)	2/8/02 DTW (ft below MP)	2/8/02 Water Level (ft, NGVD)
DP-1	84.12	5.42	78.70	5.51	78.61	5.66	78.46
DP-2	84.11	5.27	78.84	5.36	78.75	5.57	78.54
DP-3	82.22	4.65	77.57	4.76	77.46	4.36	77.86
DP-4	82.24	4.67	77.57	4.77	77.47	4.30	77.94
DP-5	84.13	4.66	79.47	4.82	79.31	4.77	79.36
DP-6	84.23	4.76	79.47	4.88	79.35	4.86	79.37
DP-7	82.63	5.18	77.45	5.27	77.36	5.05	77.58
DP-8	82.78	5.38	77.40	5.48	77.30	5.24	77.54
DP-9	81.58	4.84	76.74	5.01	76.57	4.74	76.84
DP-10	81.59	4.99	76.60	5.09	76.50	4.71	76.88
DP-11	84.06	5.48	78.58	5.56	78.50	5.41	78.65
DP-12	84.18	5.38	78.80	5.46	78.72	5.43	78.75
DP-13	83.09	5.48	77.61	5.47	77.62	5.37	77.72
DP-14	81.97	5.14	76.83	5.25	76.72	4.98	76.99
DP-15	81.98	5.20	76.78	5.30	76.68	5.02	76.96
DP-16	82.57	5.05	77.52	5.14	77.43	4.77	77.80
DP-17	82.58	5.10	77.48	5.18	77.40	4.80	77.78
DP-18	84.38	5.13	79.25	5.20	79.18	4.91	79.47
DP-19	84.34	5.04	79.30	5.12	79.22	4.83	79.51
DP-20	83.07	5.11	77.96	5.18	77.89	4.62	78.45
DP-21	83.00	5.08	77.92	5.17	77.83	4.58	78.42
DP-22	81.00	4.34	76.66	4.53	76.47	4.01	76.99
DP-23	81.27	4.10	77.17	4.35	76.92	3.95	77.32
DP-24	82.22	4.58	77.64	4.91	77.31	4.34	77.88
SZ-1	82.43	(5.58)[2/]	(76.85)[2/]	5.58	76.85	5.64	76.79
SZ-2	83.16	(6.29)	(76.87)	5.97	77.19	6.02	77.14
SZ-3	81.27	(5.22)	(76.05)	4.86	76.41	4.86	76.41

Notes: 1 / Piezometer locations shown on Figure 2.

2 / Shell zone water levels collected prior to piezometer development

Table 4. Oak Hammock Summary of Drilling Water-Quality Data

Volatile Organics (mg/L)	MCL[1/]	BOART-1	MC2	Precision Mobile Combo Rig	Gannarelli Ranch Well (GSW)
Bromodichloromethane[(2)]	0.10	0.0085	0.0052	0.0026	ND
Chloroform[(2)]	0.10	ND[3/]	0.0091	0.0079	ND
Dibromochloromethane[(2)]	0.10	ND	ND	0.0024	ND
Semivolatile Organics (mg/L)					
bis(2-ethylhexyl)phthalate	0.4	0.0036J[3/]	ND	0.0039J	ND

Notes: 1/ MCL values taken from Chapter 62-550, F.A.C.
2/ MCL for Total Trihalomethanes - sum of the concentrations of bromodichloromethane, chloroform, dibromochloromethane, and bromoform
3/ ND = Not detected
4/ J = Estimated value

Table 5. Oak Hammock Summary of Ground-Water Quality Analytical Results

Metals (mg/L)	MCL	DP-1	DP-2	DP-9	DP-10	DP-11	DP-12	DP-18	DP-19	DP-19 (Dupe)	DP-22	DP-23
Aluminum (T)	0.2	46.6	0.824	82.5J	48.6	191J	16.3J	190J	0.35J	0.314J	50.6	71.8J
Aluminum (D)		ND	NA	1.97	10	4.95	2.41	16	NA	NA	0.658	0.859
Arsenic (T)	0.05	0.0158	ND	0.0285	ND	0.0813	ND	0.0468	ND	ND	0.0039B	0.0273
Arsenic (D)		ND	NA	0.0043B	ND	0.021	ND	0.0062B	NA	NA	ND	ND
Barium (T)	2	0.391	0.0084B	1.14J	0.144B	2.15J	0.0357JB	1.95J	0.0091JB	0.0099JB	0.146B	1.43J
Barium (D)		0.0132B	NA	0.0421B	0.030B	0.0605B	0.0152B	0.166B	NA	NA	0.0165B	0.0507B
Beryllium (T)	0.004	ND	ND	0.0149J	ND	0.0186J	ND	0.0092J	ND	ND	ND	0.0111J
Beryllium (D)		ND	NA	ND	ND	ND	ND	ND	NA	NA	ND	ND
Cadmium (T)	0.005	ND	ND	0.0021B	ND	0.0042B	ND	0.0052	ND	ND	ND	0.0039B
Cadmium (D)		ND	NA	ND	ND	ND	ND	ND	NA	NA	ND	ND
Calcium (T)	NE	5.92J	2.01J	33.2J	2.89J	28.9J	5.81J	40.5J	20.9J	22.1J	5.2J	23.3J
Calcium (D)		1.68J	NA	5.12J	1.63J	6.31J	3.87J	13.5J	NA	NA	3.35J	8.45J
Chromium (T)	0.1	0.0341	ND	0.108J	0.0347	0.224J	0.0181J	0.221J	ND	ND	0.0409	0.104J
Chromium (D)		ND	NA	0.0034B	ND	0.0139	0.0057B	0.0637	NA	NA	ND	0.0033B
Cobalt (T)	NE	ND	ND	0.0118B	ND	0.0180B	0.0026B	0.0125B	ND	ND	ND	0.0154B
Cobalt (D)		ND	NA	ND	ND	0.00091B	0.00068B	0.0014B	NA	NA	ND	0.0012B
Copper (T)	1	0.0025B	ND	0.0037B	0.0035B	0.0185B	0.0019B	0.0225B	ND	ND	0.0020B	0.0055B
Copper (D)		ND	NA	0.0020B	ND	0.0116B	0.0065B	0.0079B	NA	NA	ND	0.0019B
Iron (T)	0.3	5.72J	1.83J	13.1J	5.25J	34.3J	3.43J	14.6J	1.08J	1.17J	6.02J	16.5J
Iron (D)		0.809J	NA	0.276B	1.79J	0.695	1.1	1.16	NA	NA	1.41J	0.287B
Lead (T)	0.015	ND	ND	0.0385	0.0387	0.0713	0.0122	0.103	ND	ND	0.0404	0.0249
Lead (D)		ND	NA	ND	ND	ND	ND	ND	NA	NA	ND	ND
Magnesium (T)	NE	2.06JB	0.958JB	4.08JB	3.73JB	4.38JB	2.51JB	3.33JB	1.46JB	1.58JB	3.96JB	3.64JB
Magnesium (D)		1.29JB	NA	2.03B	1.77JB	1.65B	1.46B	0.729B	NA	NA	2.13JB	2.12B
Manganese (T)	0.05	0.0165	0.0091B	0.0186J	ND	0.0357J	0.0095JB	0.0181J	0.0205J	0.0217J	0.0162	0.0274J
Manganese (D)		0.0092B	NA	0.0042B	ND	0.0065B	0.0062B	0.0050B	NA	NA	0.0087B	0.0104B
Nickel (T)	0.1	0.0104B	ND	0.0313B	0.0137B	0.0442	0.0052B	0.0666	ND	ND	0.0107B	0.0282B
Nickel (D)		ND	NA	0.0015B	ND	0.0021B	0.0020B	0.0092B	NA	NA	ND	0.0024B

Table 5. Oak Hammock Summary of Ground-Water Quality Analytical Results (Cont'd)

Metals (mg/L)	**MCL**	**DP-1**	**DP-2**	**DP-9**	**DP-10**	**DP-11**	**DP-12**	**DP-18**	**DP-19**	**DP-19 (Dupe)**	**DP-22**	**DP-23**
Potassium (T)	NE	ND	ND	8.26J	4.59B	9.29J	7.12J	30.8J	ND	ND	ND	5.14J
Potassium (D)		ND	NA	9.36	3.15B	6.12	5.69	21.9	NA	NA	ND	4.20B
Selenium (T)	0.05	ND	ND	0.0054B	ND	0.013	ND	0.0184	ND	ND	ND	0.0032B
Selenium (D)		ND	NA	ND	ND	ND	ND	ND	NA	NA	ND	ND
Silver (T)	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver (D)		0.0035B	NA	ND	ND	ND	ND	ND	NA	NA	0.00065B	ND
Sodium (T)	160	5.75	5.4	10.4	15.1	8.32	13.7	35.5	9.26	10.1	8.72	9.76
Sodium (D)		4.47B	NA	20.3J	10.5	9.9J	16.3J	34.4J	NA	NA	7.97	14.9J
Vanadium (T)	NE	0.0417JB	0.0031JB	0.142J	0.0503J	0.266J	0.0234JB	0.286J	ND	ND	0.0572J	0.131J
Vanadium (D)		0.0056JB	NA	0.0621	0.0135JB	0.0678	0.0100B	0.126	NA	NA	0.0104JB	0.0368B
Zinc (T)	5	0.0241J	ND	0.0291J	0.0128JB	0.0912J	0.019JB	0.0564J	ND	ND	0.012JB	0.0467J
Zinc (D)		0.0373J	NA	ND	0.0329J	ND	ND	ND	NA	NA	0.0234J	ND
Inorganics (mg/L)												
Nitrates	10	0.42J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organics (mg/L)												
Toluene	0.04	ND	ND	ND	0.00053J	ND	ND	ND	ND	ND	0.0021	0.0025
Acetone	NE	ND	ND	ND	ND	ND	ND	0.0252JX	ND	ND	ND	ND
Semivolatile Organics (mg/L)												
3&4-Methylphenol	NE	ND	ND	ND	ND	ND	ND	ND	0.0036J	0.0029J	ND	ND

Notes:
1/ MCLs taken from Chapter 62-550, F.A.C.
2/ (T) = Total Metals
3/ (D) = Dissolved metals
4/ NE = Not Established
5/ ND = Not detected
6/ NA = Not analyzed for this constituent

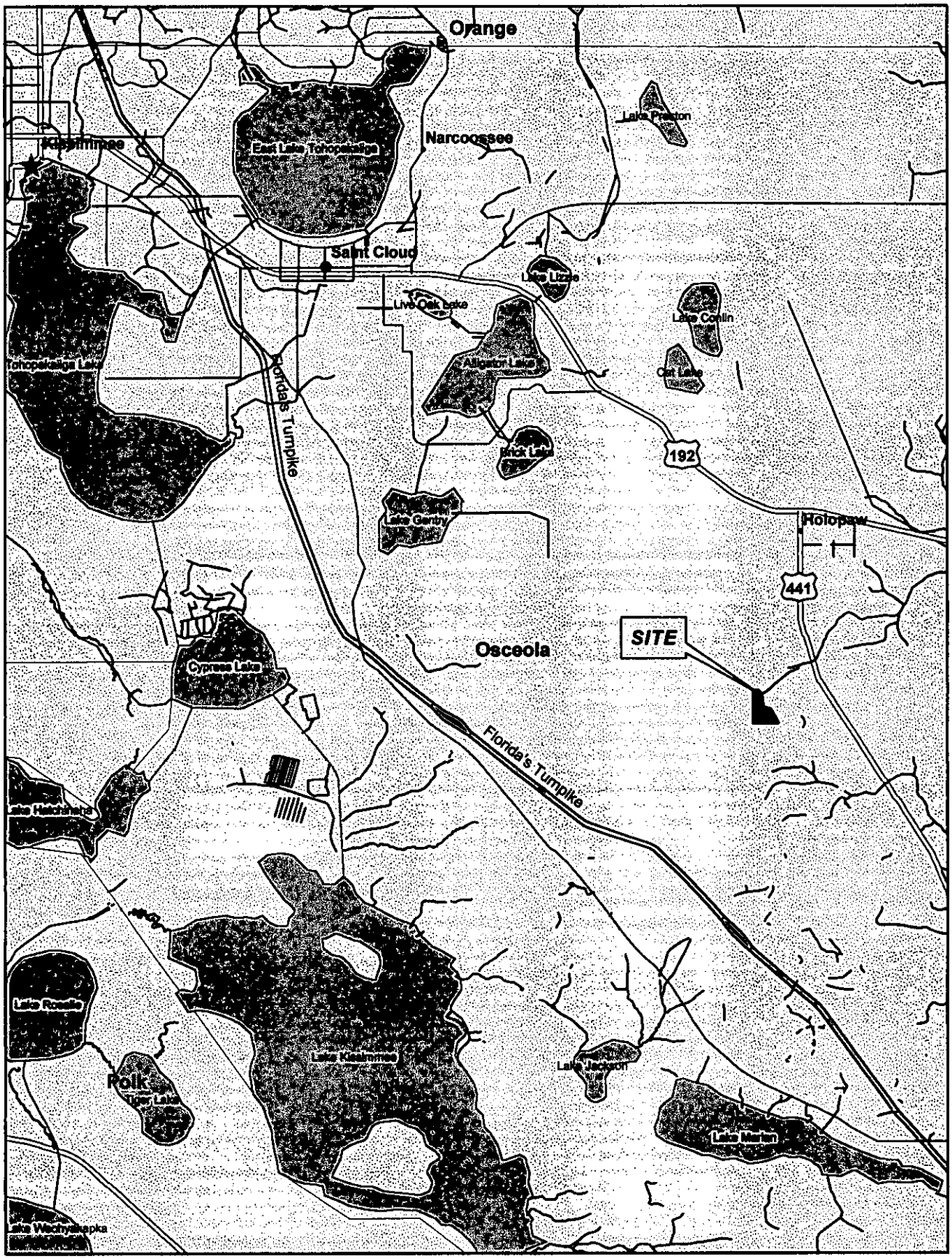
Data Qualifiers (see Attachment 4 for data assessment summary)
J = Estimated value
B = Result between the IDL and RL
X = Reviewer assigned qualifier

Table 6. Oak Hammock Summary of Surface Water Quality Data

Metals (mg/L)	Florida SW Std.[1/]	SW-1[2/]	SW-1 (DUP)	SW-2	SW-3	SW-4
Barium	NE[3/]	ND[5/]	ND	0.652	ND	ND
Chromium	≤ 0.153[4/]	ND	ND	ND	ND	0.0111
Iron	≤ 1.0	1.67J[6/]	2.87J	2.20J	2.93J	14.1J
Lead	≤ 0.002[4/]	ND	ND	ND	ND	0.0163U[7/]
Zinc	≤ 0.077[4/]	ND	ND	ND	ND	0.0576
Inorganics (mg/L)						
Unionized Ammonia	≤ 0.02	0.00084J	0.00057J	0.000014	0.00020	0.00029
Nitrates	NE	ND	ND	ND	0.10	ND
Total Nitrogen	NE	1.9J	4.6J	2.2	2.6	36.9
Total Phosphorus	NE	0.13J	2.2J	ND	0.16J	1.8J
Total Hardness (as $CaCO_3$)	NE	27.5	28.7	22.2	40.5	69
BOD-5 Day	NE	5.6J	3.8J	55.1	5.3	45.8
Chemical Oxygen Demand	NE	52.8	58.8	132	84.5	151
Total Organic Carbon	NE	21.5	20.8	31.1	28.8	86.4
Total Dissolved Solids	NE	122	132	208	190	188
Total Suspended Solids	NE	17J	13J	14	5.0	270
Biological						
Fecal Coliform	800 cfu/100ml	30	32	392J	1050J	20
Chlorophyll A (mg/m^3)	NE	2.74J	5.12J	6.07	7.26	10.24
Volatile Organics (mg/L)						
Toluene	NE	ND	ND	0.0012J	ND	0.0164
Field Readings						
pH[6/]	5.4 - 6.4 std units	6.39	NA[10/]	4.65	5.86	5.40
Dissolved Oxygen	≥ 5.0 mg/L	4.57	NA	7.3	4.2	4.0
Specific Conductance	1275 uhmos/cm	133.5	NA	173.9	187.2	170.5
Turbidity	≤ BG[9/]+29 ntu	3.4	NA	1.06	4.23	16.4
Temperature °C	NE	23.6	NA	25.3	23.9	24.8

Notes: 1/ FLDEP 62-320.530, Criteria for Surface Water Quality Classifications - Class III: Predominantly Fresh Waters
2/ Surface water sampling locations shown on Figure 14
3/ NE = Not Established
4/ Based on calculation using log of Total Hardness as $CaCO_3$
5/ ND = Not detected
6/ J=estimated value
7/ Not detected at the associated value due to blank contamination; U = not detected
8/ BG <6.0 su; standard based on BG pH + 1.0 su
9/ Background sample (BG)
10/ NA = Not analyzed

Figures



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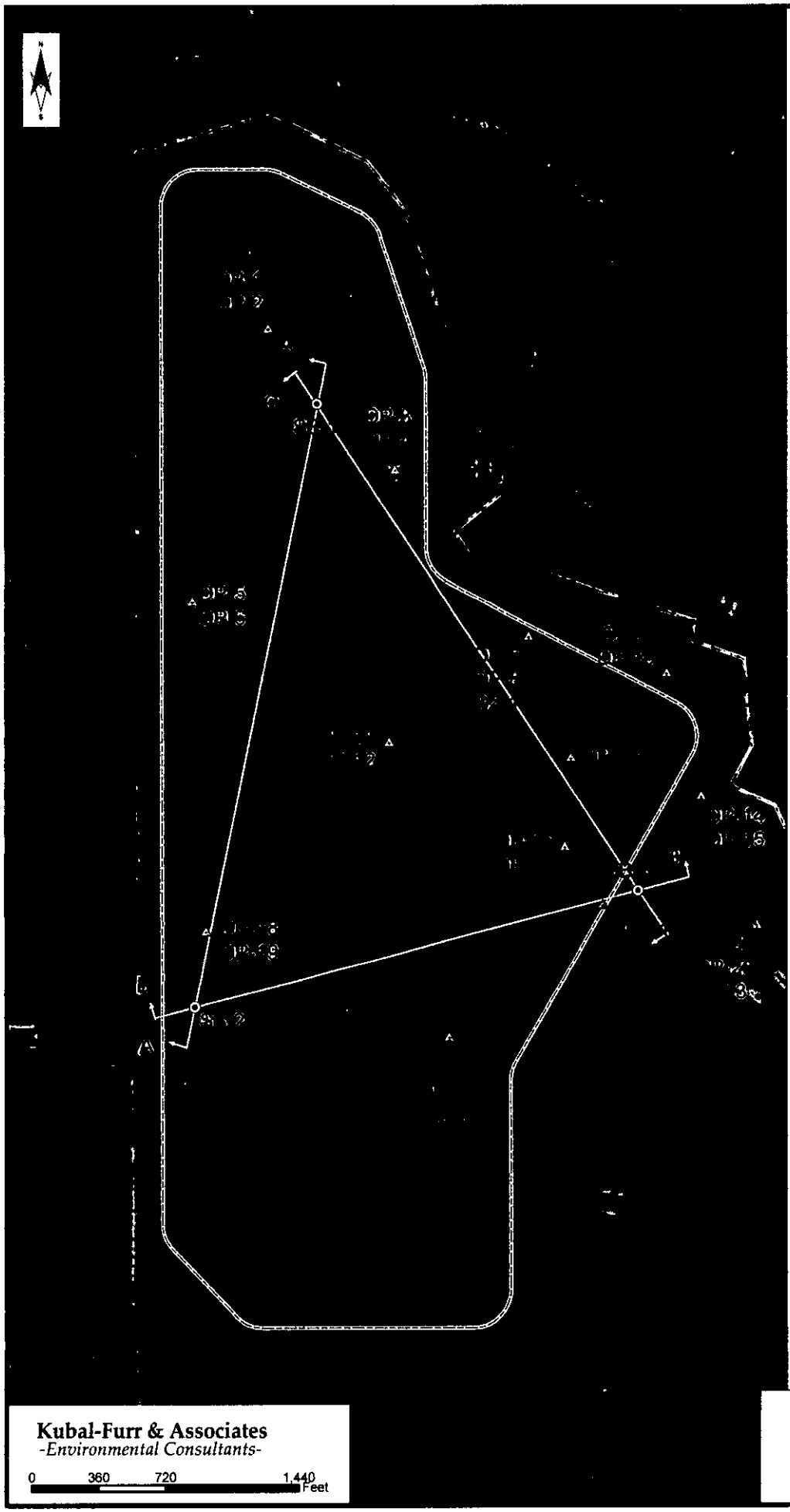
0 3.5 7 Miles

Figure 1. Site Location Map

OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida



Legend

Piezometer

▲ *DP-1*

Sonic Boring Location

● *SB-1*

Cross Section Location

Limit of Waste

Property Line

Location	Approx. Depth (ft, bls)
DP-1	50
DP-2	15
DP-3	50
DP-4	15
DP-5	50
DP-6	15
DP-7*	15
DP-8*	50
DP-9	50
DP-10	15
DP-11	50
DP-12	15
DP-13	15
DP-14	15
DP-15	50
DP-16	15
DP-17	50
DP-18	50
DP-19	15
DP-20	15
DP-21	50
DP-22	15
DP-23	50
DP-24	15
SZ-1*	78.3
SZ-2	72
SZ-3	75.9
SB-1	177
SB-2	147
SB-3	157

*Note: Piezometer instrumented with transducer / data logger.

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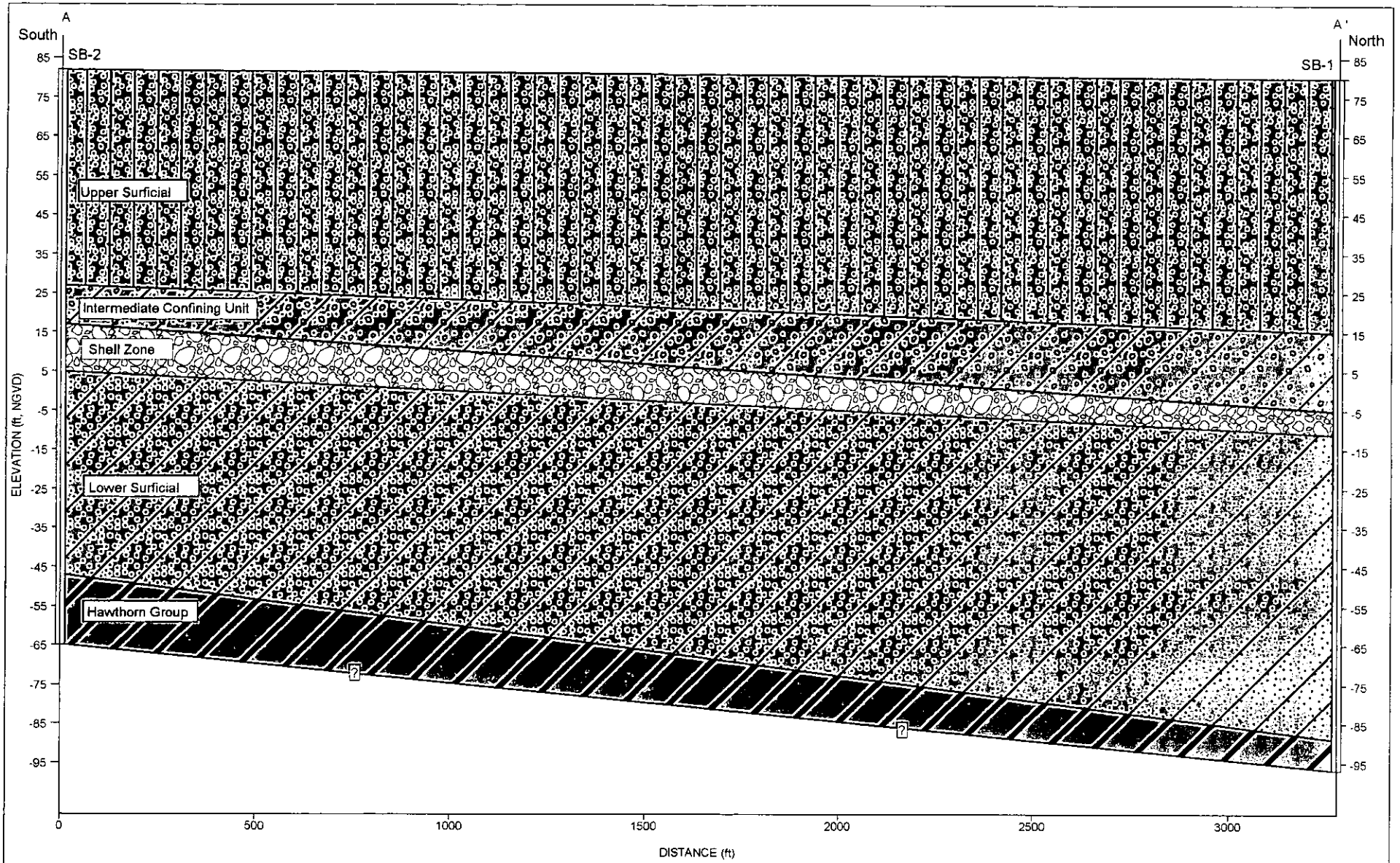
0 360 720 1,440 Feet

Figure 2. Site Plan
OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida



OMNI Waste
Oak Hammock
Site Investigation

Holopaw, FL

Project # 48OH01

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LEGEND

- SANDS and SILTY SANDS
- SANDY CLAY / CLAYEY SAND / SANDY SHELLY CLAY
- "SHELL ZONE" - SHELL HASH MIXED WITH VARYING AMOUNTS OF SAND AND CLAY
- CLAYEY SANDS / SANDY CLAYS / SILTY SANDS (MIXED WITH VARYING AMOUNTS OF SHELL FRAGMENTS)
- HAWTHORN GROUP

Figure 3

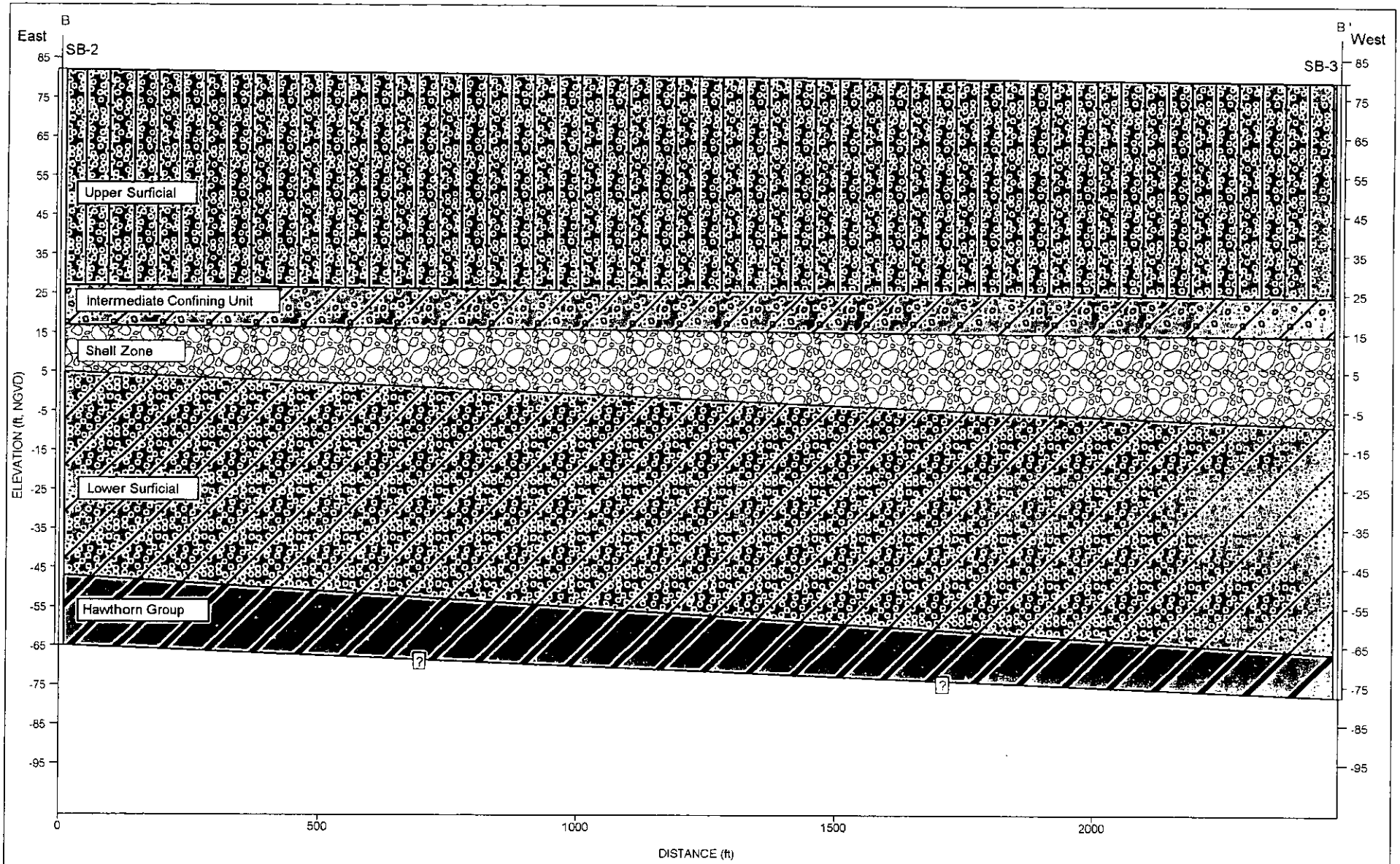
Generalized Geologic Cross Section

A - A'

Section South-North

SB-2 to SB-1

02-01-2002 C:\Program Files\mtech2001\Final Cross\2-1cross.CRO



OMNI Waste
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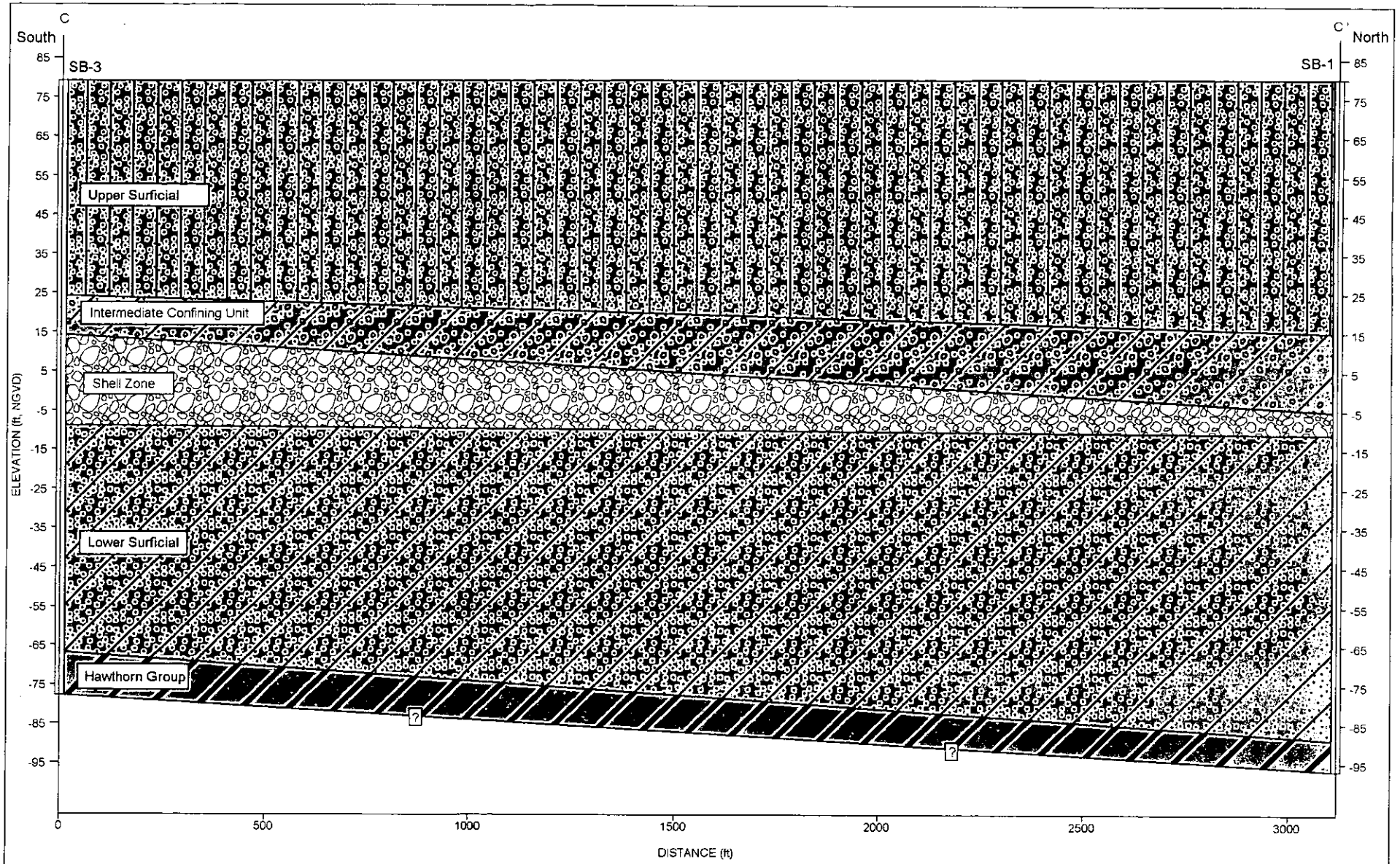
LEGEND

- SANDS and SILTY SANDS
- SANDY CLAY / CLAYEY SAND / SANDY SHELLY CLAY
- "SHELL ZONE" - SHELL HASH MIXED WITH VARYING AMOUNTS OF SAND AND CLAY
- CLAYEY SANDS / SANDY CLAYS / SILTY SANDS (MIXED WITH VARYING AMOUNTS OF SHELL FRAGMENTS)
- HAWTHORN GROUP

Figure 4

Generalized Geologic Cross Section
B - B'
Section East-West
SB-2 to SB-3

02-01-2002 C:\Program Files\vmtech2001\Final Cross\2-3cross.CRO



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LEGEND

- SANDS and SILTY SANDS
- SANDY CLAY / CLAYEY SAND / SANDY SHELLY CLAY
- "SHELL ZONE" - SHELL HASH MIXED WITH VARYING AMOUNTS OF SAND AND CLAY
- CLAYEY SANDS / SANDY CLAYS / SILTY SANDS (MIXED WITH VARYING AMOUNTS OF SHELL FRAGMENTS)
- HAWTHORN GROUP

Figure 5

Generalized Geologic Cross Section
C - C'
Section South-North
SB-3 to SB-1

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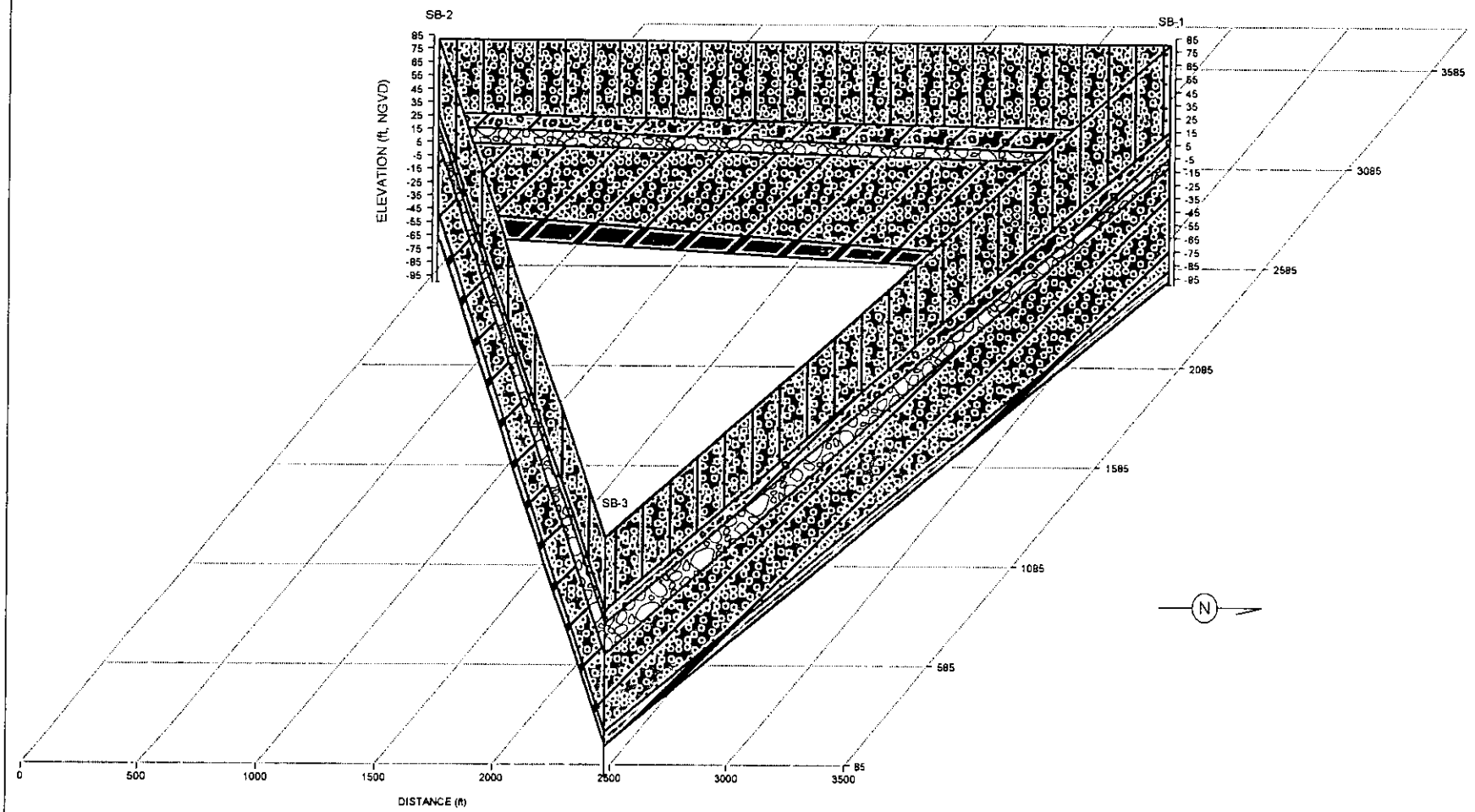

OMNI Waste
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Site Investigation

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LEGEND

- SANDS and SILTY SANDS
- SANDY CLAY / CLAYEY SAND / SANDY SHELLY CLAY
- "SHELL ZONE" - SHELL HASH MIXED WITH VARYING AMOUNTS OF SAND AND CLAY
- CLAYEY SANDS / SANDY CLAYS / SILTY SANDS (MIXED WITH VARYING AMOUNTS OF SHELL FRAGMENTS)
- HAWTHORN GROUP

Figure 6

Generalized Fence Diagram

Facing West

02-01-2002 C:\Program Files\rntech2001\Final Cross\fence3.FEN

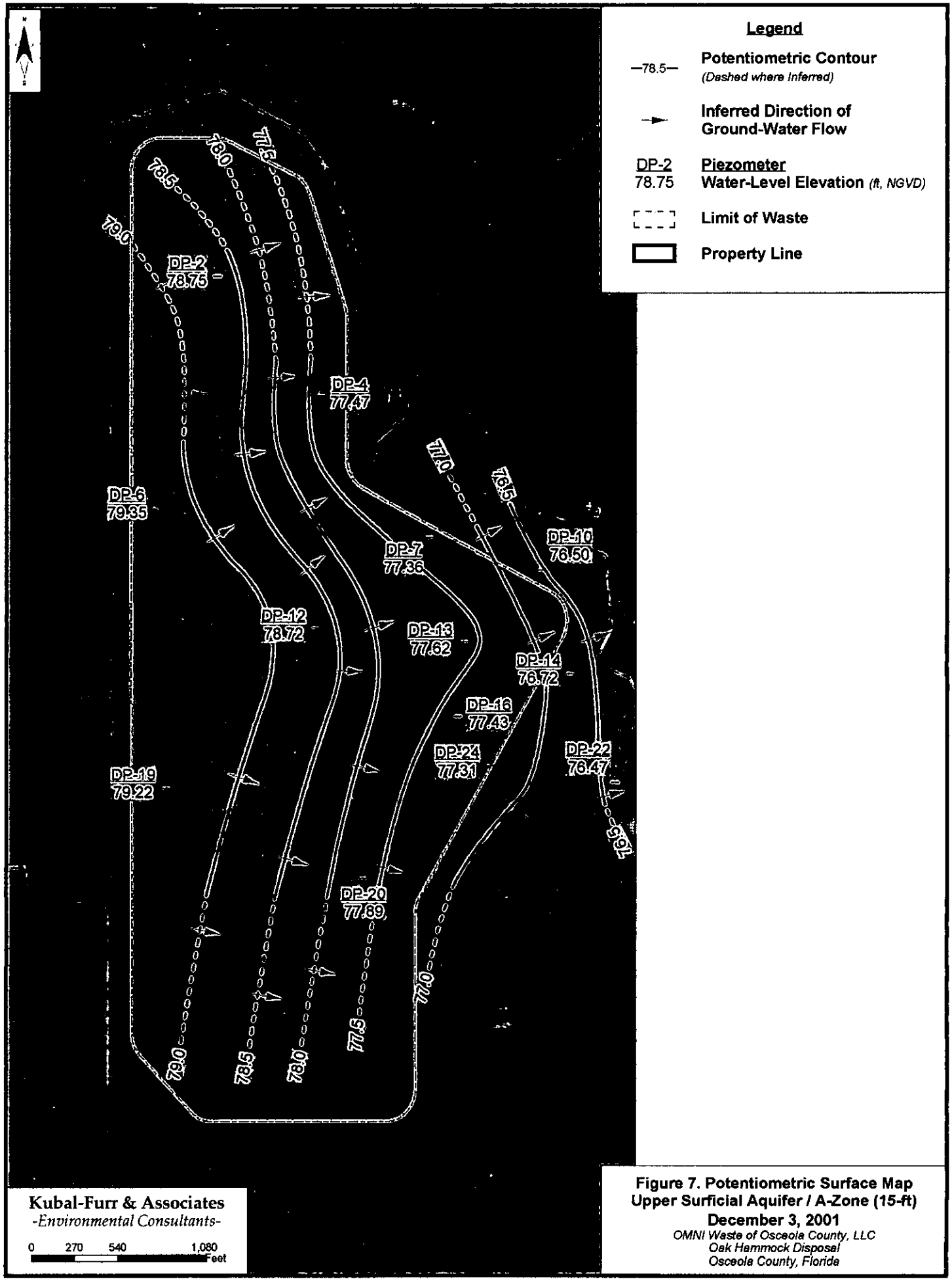


Figure 7. Potentiometric Surface Map
Upper Surficial Aquifer / A-Zone (15-ft)
December 3, 2001
OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida

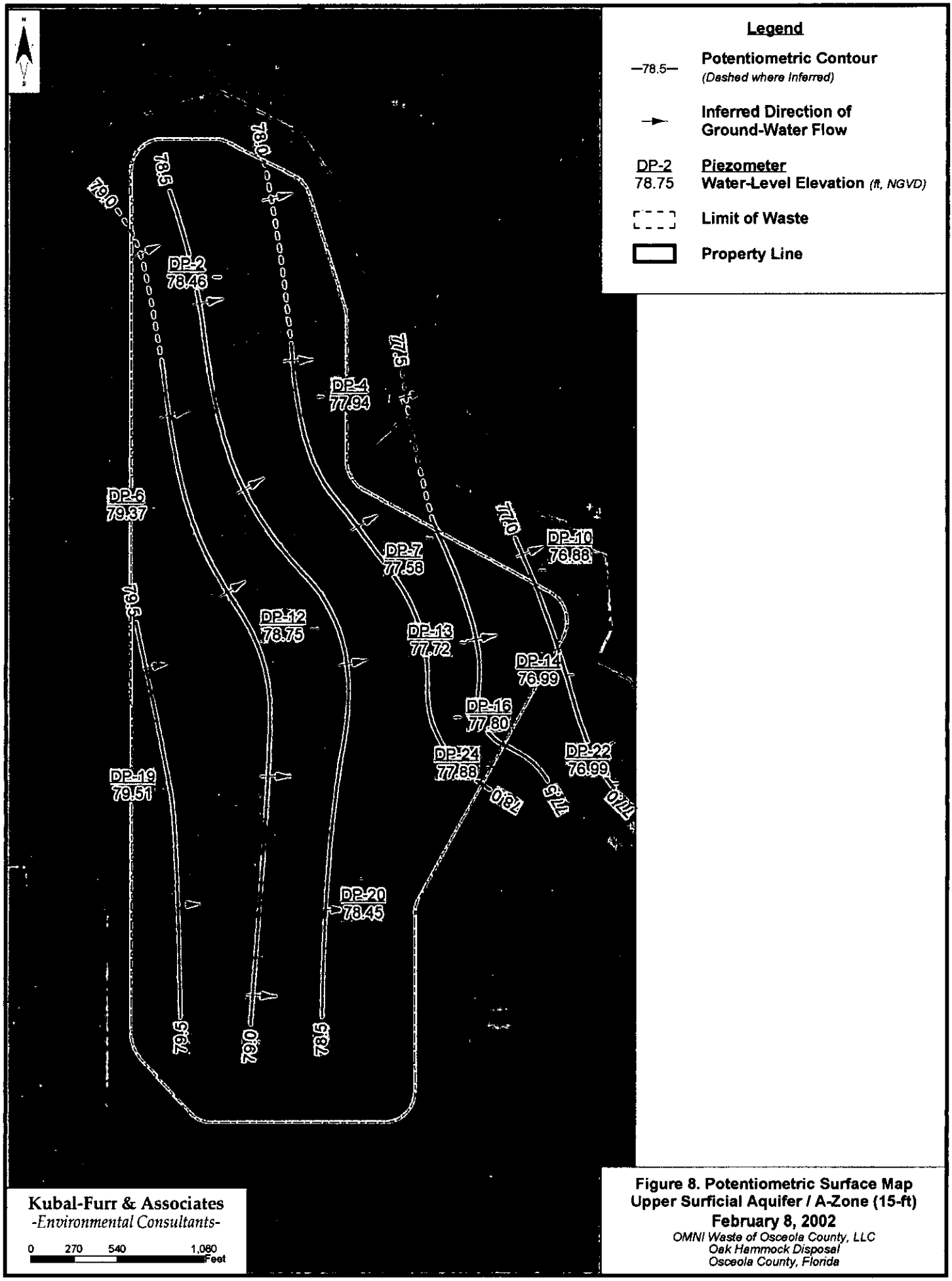


Figure 8. Potentiometric Surface Map
Upper Surficial Aquifer / A-Zone (15-ft)
February 8, 2002
OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida

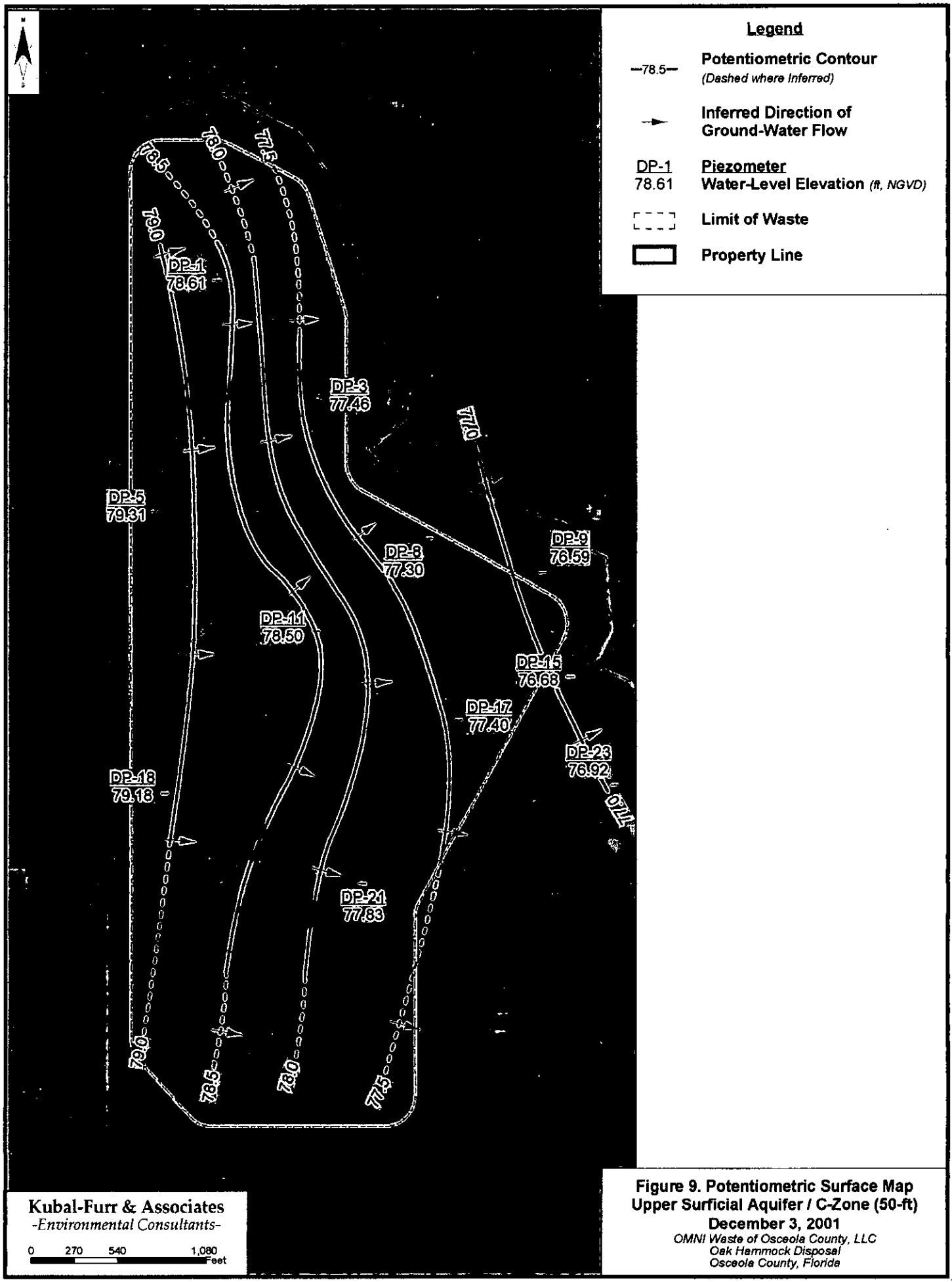
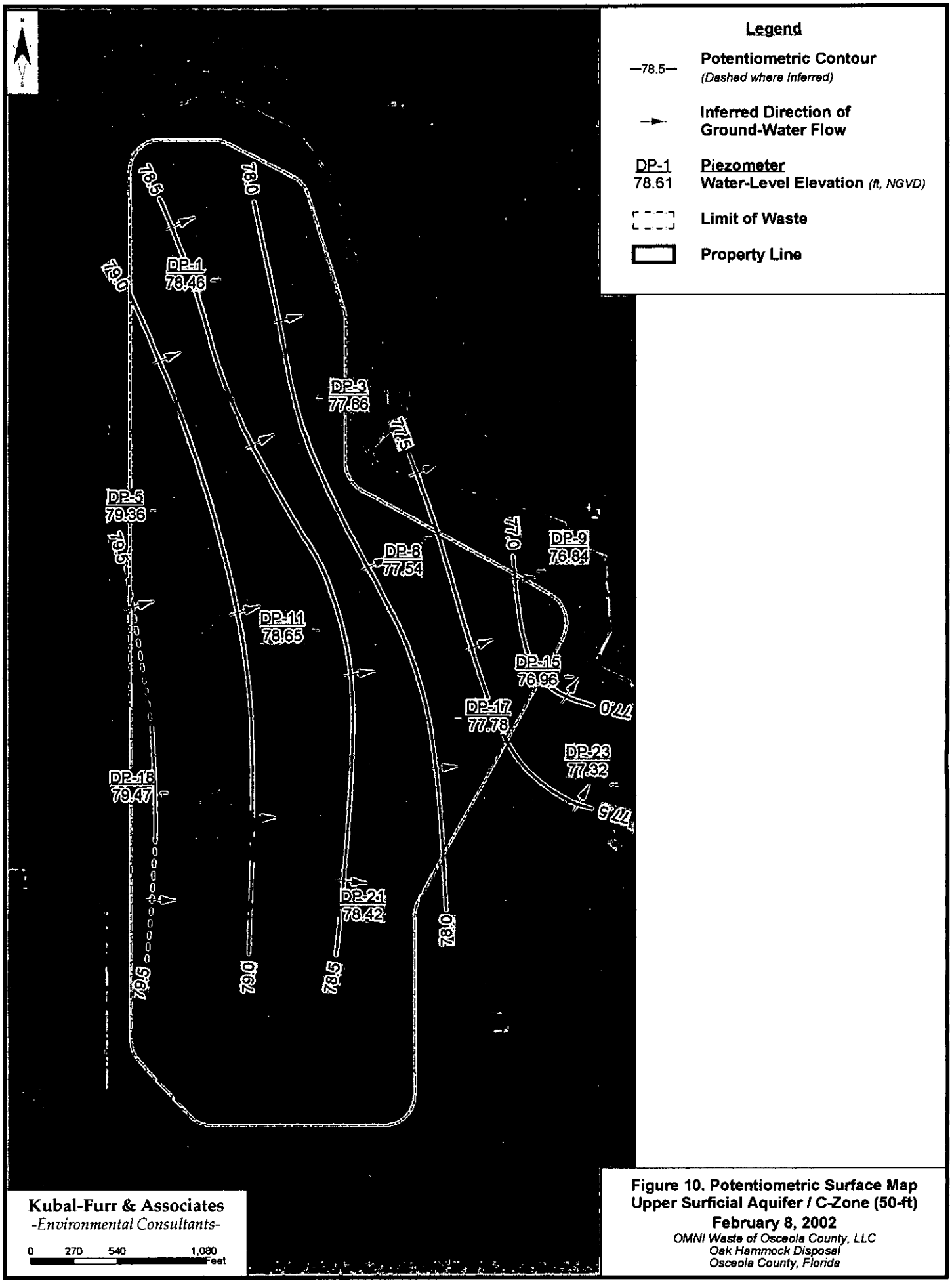


Figure 9. Potentiometric Surface Map
Upper Surficial Aquifer / C-Zone (50-ft)
December 3, 2001
OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida



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0 270 540 1,080 Feet

Figure 10. Potentiometric Surface Map
Upper Surficial Aquifer / C-Zone (50-ft)
February 8, 2002
OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida

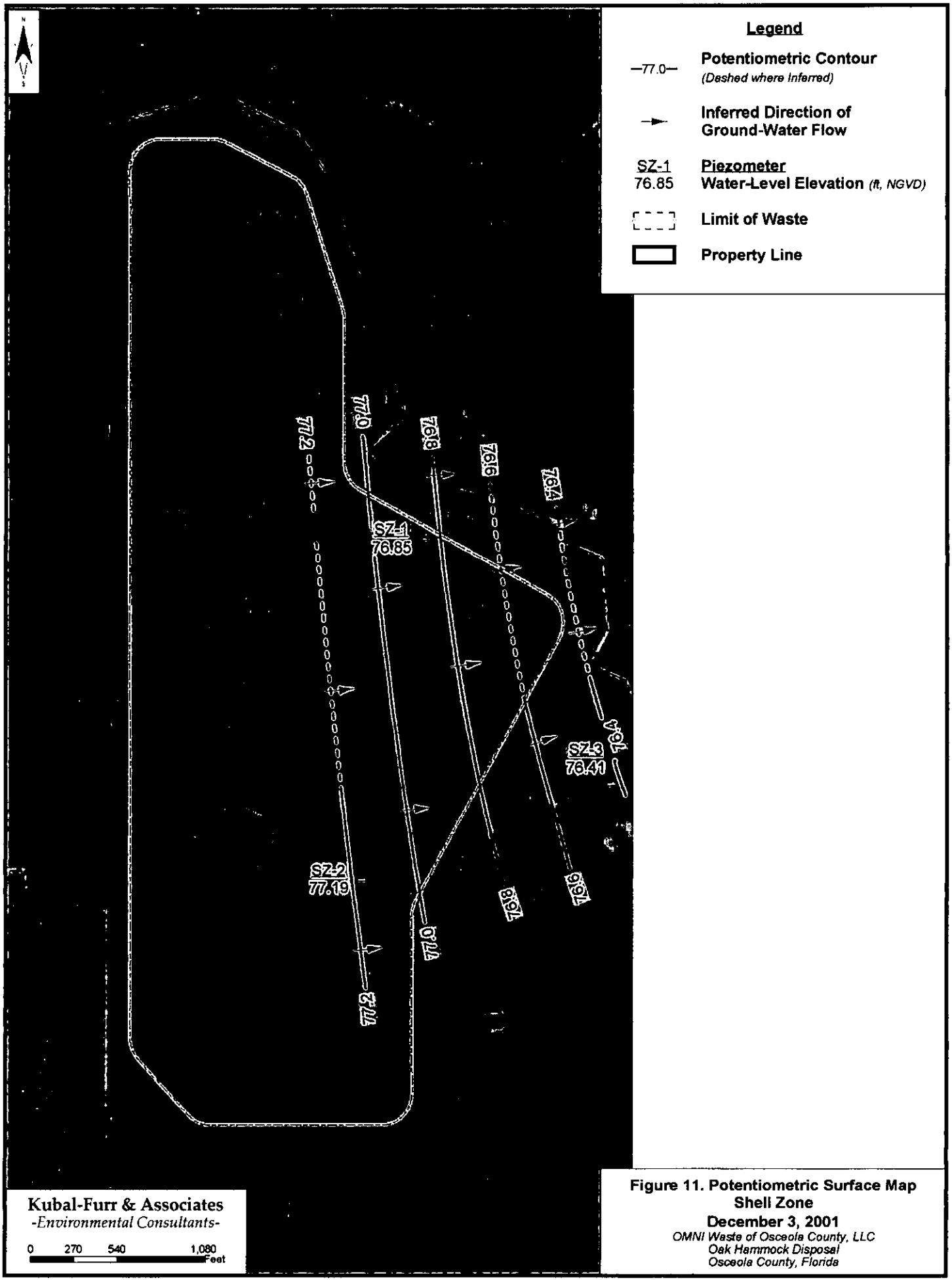
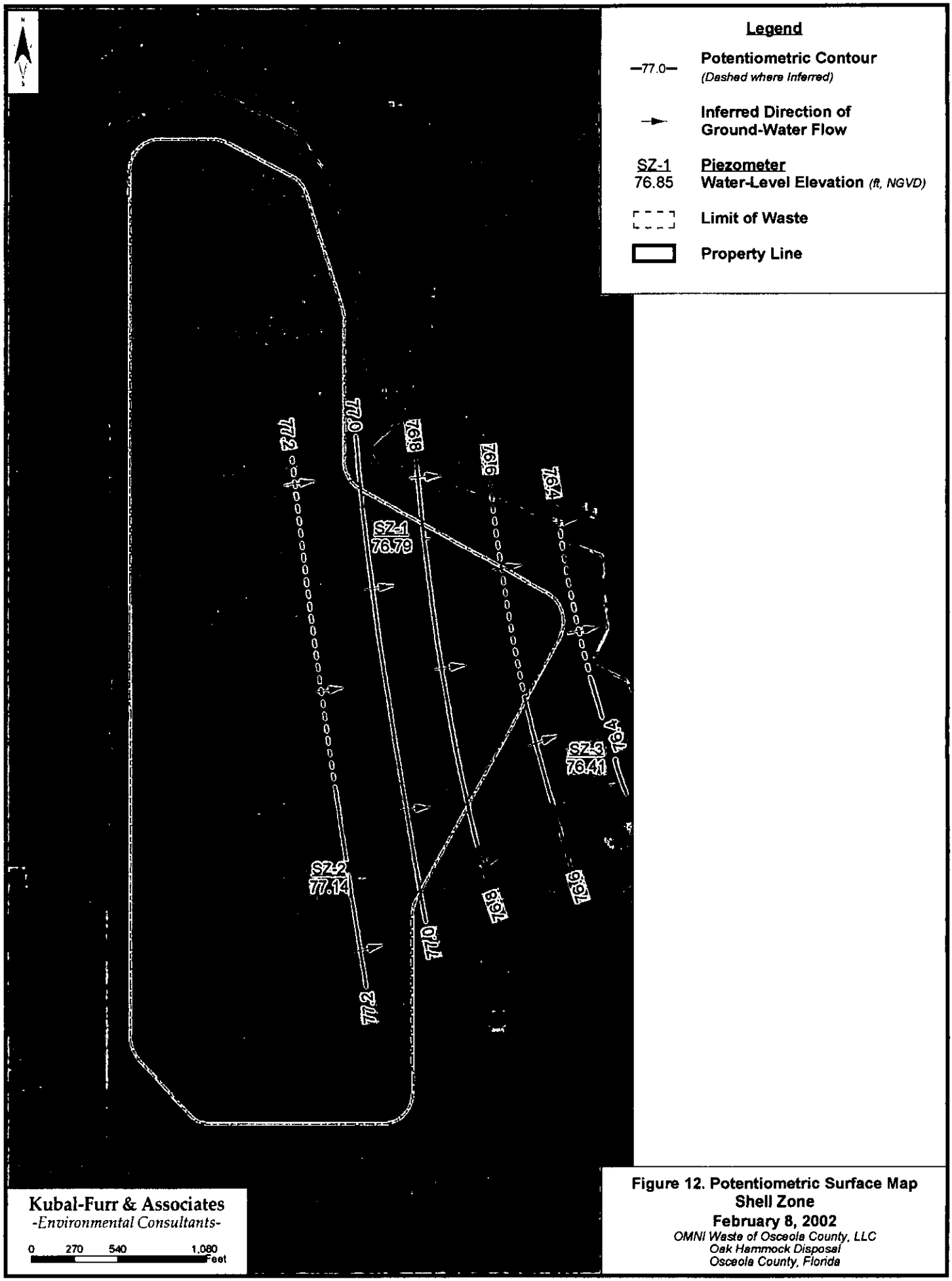


Figure 11. Potentiometric Surface Map
Shell Zone
December 3, 2001
OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida



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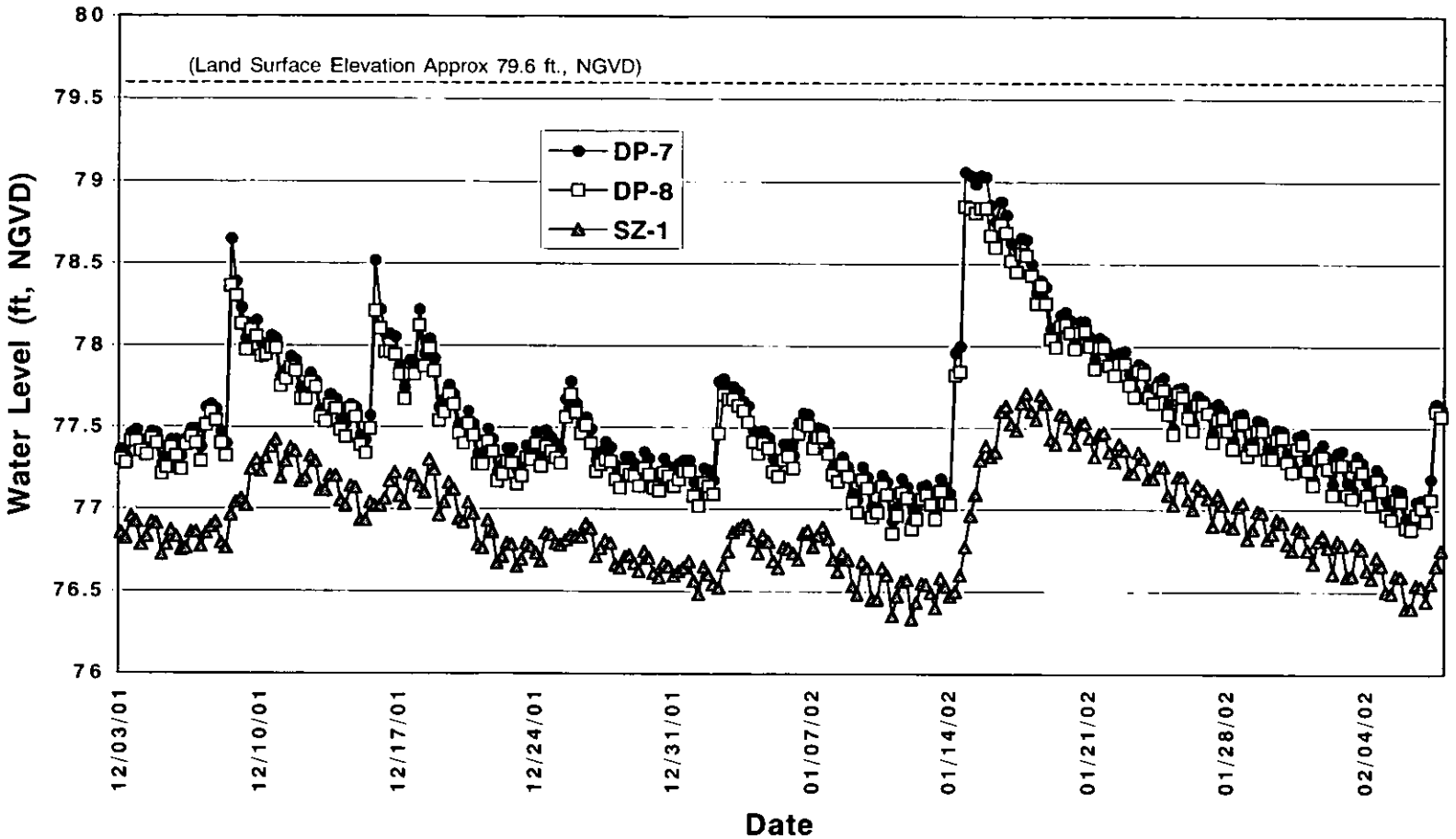
0 270 540 1,080 Feet

Figure 12. Potentiometric Surface Map
Shell Zone
February 8, 2002
OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida

Figure 13. Oak Hammock Hydrographs (DP-7/DP-8/SZ-1)



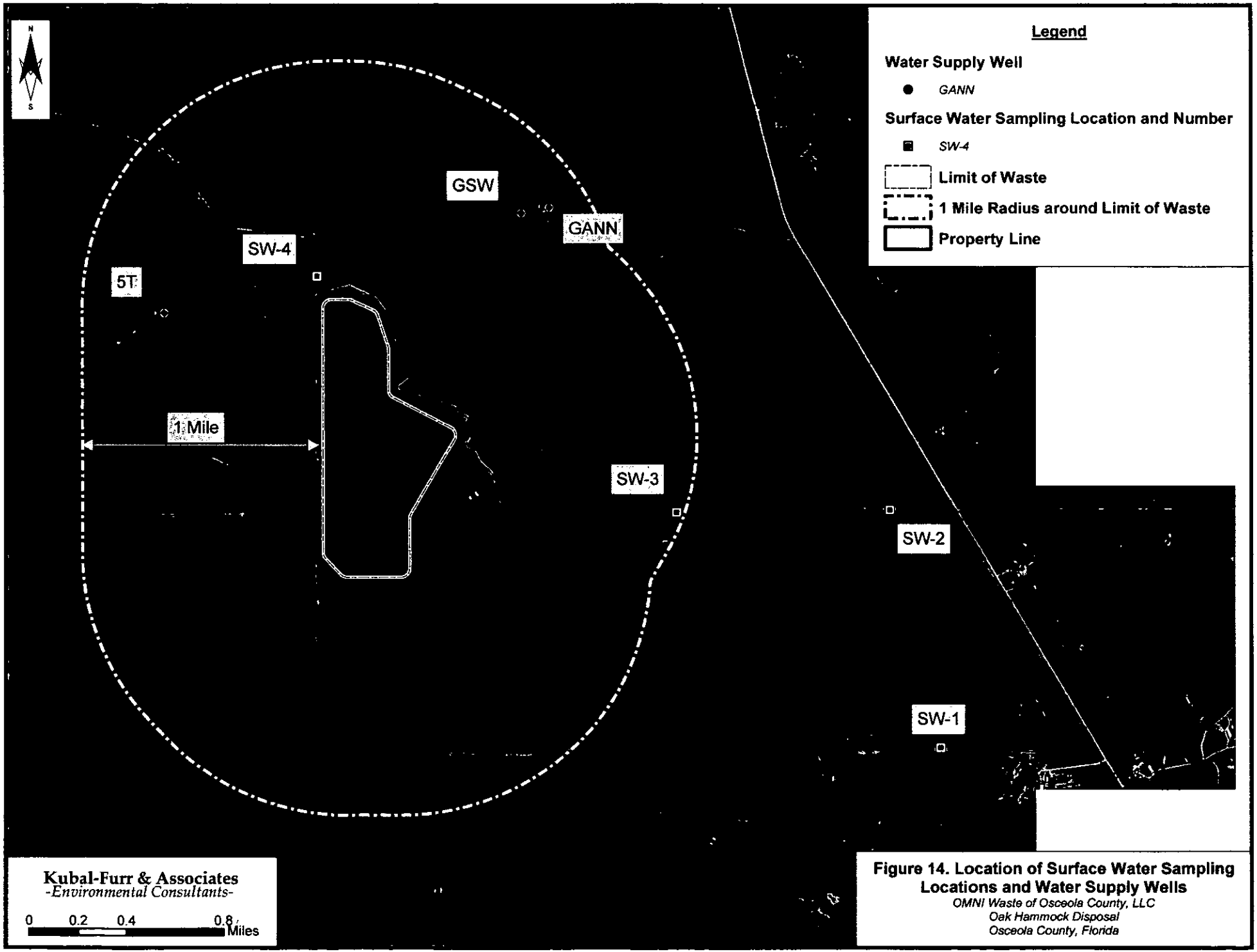
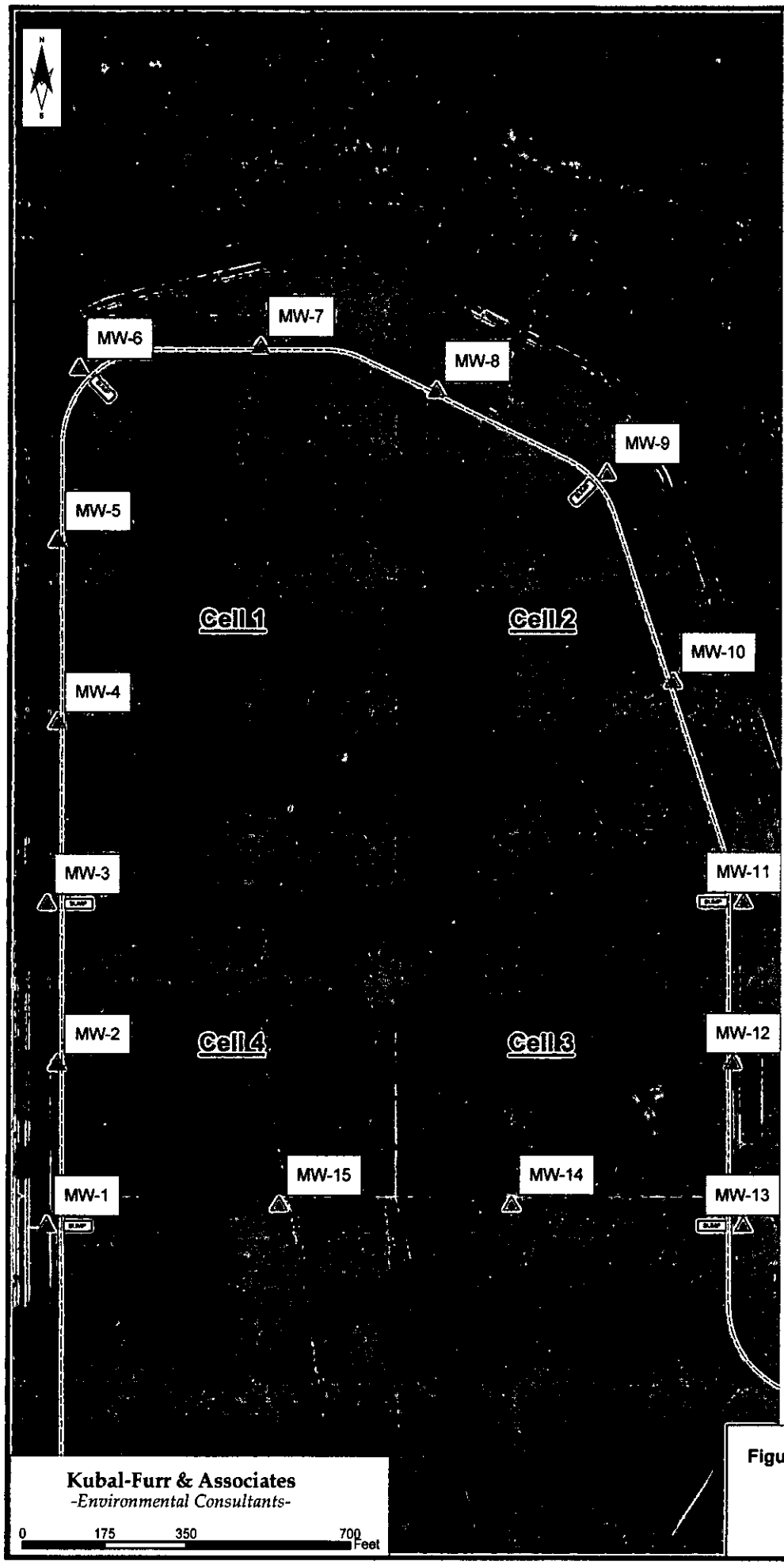


Figure 14. Location of Surface Water Sampling Locations and Water Supply Wells

OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida



Legend

- ▲ Proposed Monitor Well Cluster
- Limit of Waste
- Property Line
- Landfill Construction Detail

Well Spacing

Well Cluster	Approximate Spacing (ft)
MW-1 to MW-2	341
MW-2 to MW-3	341
MW-3 to MW-4	383
MW-4 to MW-5	382
MW-5 to MW-6	367
MW-6 to MW-7	391
MW-7 to MW-8	388
MW-8 to MW-9	404
MW-9 to MW-10	463
MW-10 to MW-11	488
MW-11 to MW-12	342
MW-12 to MW-13	342
MW-13 to MW-14	499
MW-14 to MW-15	497
MW-15 to MW-1	499

Note: Each monitor well cluster consists of an A-well, B-well and C-well. See text (Section 5.0) for descriptions and approximate depths.

Figure 15. Proposed Ground-Water Monitor Well Locations

OMNI Waste of Osceola County, LLC
Oak Hammock Disposal
Osceola County, Florida

Attachment 1

Lithologic Logs and
Piezometer Construction Details

Kubal-Furr & Associates
-Environmental Consultants-

LOG OF BORING SB-1

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/2/01	Company Rep.	: K. Smith
Date Completed	: 11/3/01	Northing Coord.	: 1356401.00
Hole Diameter	: 4 inches	Easting Coord.	: 624799.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 80.00	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
0	80		SILTY SAND, Olive Black to Brown, well sorted, fine grained	1	
5	75			2	
10	70		SAND, Moderate Yellowish Brown, well sorted, fine grained with minor silt	3	
15	65			4	
20	60			5	
25	55		SILTY SAND, Dark Yellowish Brown to Gray to Dark Gray to Grayish Black, medium-fine grained, sub-angular quartz grains, becoming more Silty 40-47ft	6	
30	50			7	
35	45			8	
40	40			9	
45	35			10	
50	30		SILTY SAND, Light Olive Gray to Grayish Olive, with minor dark minerals (5%-10%), well sorted, fine grained, DISTURBED SAMPLE- 55'-65'	11	
55	25			12	
60	20			13	
65	15		DISTURBED SAMPLE-65'-75' CLAYEY SAND, Grayish Olive with minor shell fragments	14	
70	10		SANDY SHELLY CLAY, Light Olive Gray to Light Olive	15	
75	5			16	
80	0			17	
85	-5		SHELL HASH with minor clay, Yellowish Gray, Some whole shells, fragments from 2mm-50mm	18	
90					

02-26-2002 C:\Program Files\vmtech2002\OMNI Logs\SB-1.bo

Kubal-Furr & Associates
-Environmental Consultants-

LOG OF BORING SB-1

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/2/01	Company Rep.	: K. Smith
Date Completed	: 11/3/01	Northing Coord.	: 1356401.00
Hole Diameter	: 4 inches	Easting Coord.	: 624799.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 80.00	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
90	-10		SHELLY SILTY SAND with Partially Cemented Shells, Grayish Olive	19	
95	-15			20	
100	-20		SILTY SAND with minor Shell fragments, Light Olive Gray, fine grained	21	
105	-25		CLAYEY SAND/SANDY CLAY with minor Shell fragments, Light Olive Gray to Grayish Olive, fine grained	22	
110	-30			23	
115	-35			24	
120	-40			25	
125	-45			26	
130	-50			27	
135	-55		SILTY SAND with Shell fragments (2mm-25mm), and minor Dark Minerals, Grayish Olive, well sorted, fine grained	28	
140	-60			29	
145	-65			30	
150	-70			31	
155	-75		CLAYEY SAND with Shell fragments, Grayish Olive, fine grained	32	
160	-80			33	
165	-85		CALCAREOUS SAND with Shell fragments, Grayish Olive, fine grained	34	
170	-90		CLAY, STIFF, PLASTIC, with fine Phosphatic nodules, Olive Gray (Top of Hawthorn Group)	35	
175	-95			36	175-177'
180					

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Kubal-Furr & Associates
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LOG OF BORING SB-2

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 10/31/01	Company Rep.	: K. Smith
Date Completed	: 11/01/01	Northing Coord.	: 1353191.00
Hole Diameter	: 4 inches	Easting Coord.	: 624139.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman / J. Furr

Depth in Feet	Surf. Elev. 82.00	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
0	82		SILTY SAND, Gray	1	
5	77		SILT,Dark Black, Organic Rich at top grading less organic to Dark Brown SILT	2	
10	72			3	
15	67		SAND, PaleYellowish Brown, well sorted, sub-angular quartz grains, fine grained with minor silt	4	
20	62		SILTY SAND, Dark Brown to Olive Gray to Dusky Yellowish Green, fine grained, less Silty 25-35ft.	5	
25	57			6	
30	52			7	
35	47			8	
40	42			9	
45	37			10	
50	32			11	
55	27		DISTURBED SAMPLE-55-65' CLAY with Shell fragments (1mm-2mm), Grayish Green	12	
60	22			13	
65	17		SHELL HASH with Shell fragments 2mm-50mm, Fragments included complete Gastopods, Bivalves, Yellowish Gray, Poorly Sorted	14	
70	12			15	
75					

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LOG OF BORING SB-2

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 10/31/01	Company Rep.	: K. Smith
Date Completed	: 11/01/01	Northing Coord.	: 1353191.00
Hole Diameter	: 4 inches	Easting Coord.	: 624139.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman / J. Furr

Depth in Feet	Surf. Elev. 82.00	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
75	7				
80	2		CLAYEY SAND to SANDY CLAY, medium to fine grained, Large Oyster Shell fragments (2mm-50mm), and Dark Minerals (10%) 90-115ft., Grayish Green to Dark Grayish Green	16	
85	-3			17	
90	-8			18	
95	-13			19	
100	-18			20	
105	-23			21	
110	-28			22	
115	-33			23	
120	-38			24	
125	-43		CALCAREOUS SAND with Shell fragments, Grayish Olive, fine grained	25	
130	-48		CLAYEY SAND with Shell fragments, Olive Gray	26	
135	-53		CLAY with Shell fragments, Olive Gray,		
140	-58		SANDY CLAY with SHARKS TOOTH, 2mm-50mm PHOSPHATE NODULES and minor Shell fragments, Gray, (Top of Hawthorn Group)	27	
145	-63		CLAY, STIFF, PLASTIC with fine Phosphatic Nodules, fine sand stringers 143-145ft., Olive Gray	28	
150				29	
				30	145-147'

02-26-2002 C:\Program Files\mtech2002\OMNI Logs\SB-2.bo

Kubal-Furr & Associates
-Environmental Consultants-

LOG OF BORING SB-3

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/01/01	Company Rep.	: K. Smith
Date Completed	: 11/02/01	Northing Coord.	: 1353810.00
Hole Diameter	: 4 inches	Easting Coord.	: 626532.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman / J. Furr

Depth in Feet	Surf. Elev. 79.20	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
0	79		SILTY SAND, Black, Organic-rich	1	
5	74		SILTY SAND, Pale Yellowish Brown	2	
10	69			3	
15	64		SAND, PaleYellowish Brown, fine grained, clean quartz sand		
			SILTY SAND, Dark Yellowish Brown to Grayish Brown to Grayish Olive, Medium to fine grained	4	
20	59			5	
25	54			6	
30	49			7	
35	44			8	
40	39			9	
45	34			10	
50	29			11	
55	24		SANDY SILTY CLAY with large (1-mm-50mm) fragments, Grayish Olive Green	12	
60	19			13	
65	14		SHELLY SAND with large Shell fragments (1-mm-50mm), Yellowish Gray, some whole shells	14	
70	9		SHELL HASH with CLAY, Shell fragments from 5mm-50mm, Yellowish Gray	15	
75	4		SHELLY SAND with fragments from 5mm-25mm, Yellowish Gray to Pale Greenish Yellow	16	
80					

02-2 02 C:\Program Files\mtech2002\OMNI Logs\SB-3.bor

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LOG OF BORING SB-3

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/01/01	Company Rep.	: K. Smith
Date Completed	: 11/02/01	Northing Coord.	: 1353810.00
Hole Diameter	: 4 inches	Easting Coord.	: 626532.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman / J. Furr

Depth in Feet	Surf. Elev. 79.20	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
80	-1			17	
85	-6			18	
90	-11		CLAYEY SAND, Pale Olive to Grayish Olive, well sorted, fine grained, mixed with minor Shell fragments 95-146ft.	19	
95	-16			20	
100	-21			21	
105	-26			22	
110	-31			23	
115	-36			24	
120	-41			25	
125	-46			26	
130	-51			27	
135	-56			28	
140	-61			29	
145	-66			30	
150	-71		SANDY CLAY with PHOSPHATE NODULES and Shell fragments, Olive Gray, (Top of Hawthorn Group)	31	
155	-76		CLAY, STIFF, PLASTIC, with fine Phosphatic Nodules, Olive Gray, (Hawthorn Group)	32	155-157'
160					

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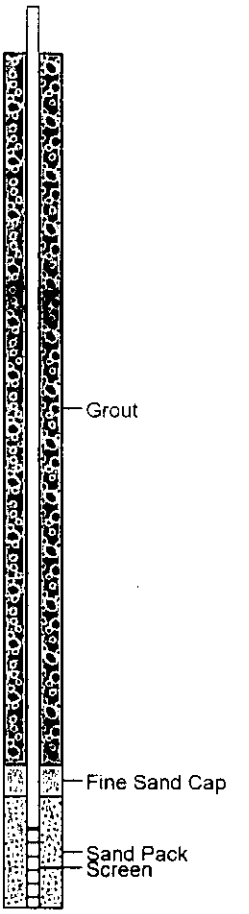
LOG OF BORING DP-1/2

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/5/01	Company Rep.	: B. Chitten
Date Completed	: 11/6/01	Northing Coord.	: 1356797.91
Hole Diameter	: 1.5 in.	Easting Coord.	: 624537.79
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 81.20	GRAPHIC	DESCRIPTION
0	81		SAND, Dark Gray to Yellowish Gray, well sorted, fine grained
			SILTY SAND, Brownish Black, fine grained
5	76		SAND, Gray grading into Yellowish Gray, fine grained
10	71		SILTY SAND, Brownish Black grading to Moderate Brown to Moderate Yellowish Brown, well sorted, fine grained
15	66		
20	61		
			SAND, Pale Yellowish Brown
25	56		SILTY SAND, Dusky Yellowish Brown, well sorted, fine grained grading coarser into Moderate Yellowish Brown, medium to fine grained
30	51		
35	46		
40	41		
45	36		SILTY SAND with minor Dark Minerals (5% grading to 10%), Grayish Olive
50	31		
55	26		
60	21		SAND with Dark Minerals (10%) Slightly Silty in top portion but grading out into Sand, Olive Gray to Yellowish Gray, medium to fine grained
65	16		
70	11		
			SILTY SAND with Dark Minerals, Dark Gray, fine grained
75	6		CLAYEY SAND, Dark Gray, grades more clayey
80			

Piezometer: DP-1
TOC Elev.: 84.12



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/5/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-20 2 C:\Program Files\mtech2002\OMNI Logs\DP-1.bor

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-Environmental Consultants-

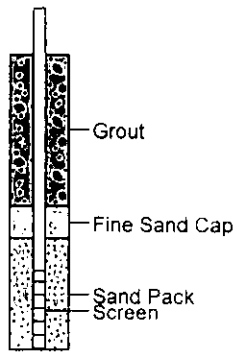
LOG OF BORING DP-1/2

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/5/01	Company Rep.	: B. Chitten
Date Completed	: 11/6/01	Northing Coord.	: 1356802.93
Hole Diameter	: 1.5 in.	Easting Coord.	: 624536.96
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 81.20	GRAPHIC	DESCRIPTION
0	81		SAND, Dark Gray to Yellowish Gray, well sorted, fine grained
5	76		SILTY SAND, Brownish Black, fine grained
			SAND, Gray grading into Yellowish Gray, fine grained
10	71		SILTY SAND, Brownish Black grading to Moderate Brown to Moderate Yellowish Brown, well sorted, fine grained
15	66		
20	61		
			SAND, Pale Yellowish Brown
25	56		SILTY SAND, Dusky Yellowish Brown, well sorted, fine grained grading coarser into Moderate Yellowish Brown, medium to fine grained
30	51		
35	46		
40	41		
45	36		SILTY SAND with minor Dark Minerals (5% grading to 10%), Grayish Olive
50	31		
55	26		
60	21		SAND with Dark Minerals (10%) Slightly Silty in top portion but grading out into Sand, Olive Gray to Yellowish Gray, medium to fine grained
65	16		
70	11		
			SILTY SAND with Dark Minerals, Dark Gray, fine grained
75	6		CLAYEY SAND, Dark Gray, grades more clayey
80			

Piezometer: DP-2
TOC Elev.: 84.11



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/6/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

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Kubal-Furr & Associates
-Environmental Consultants-

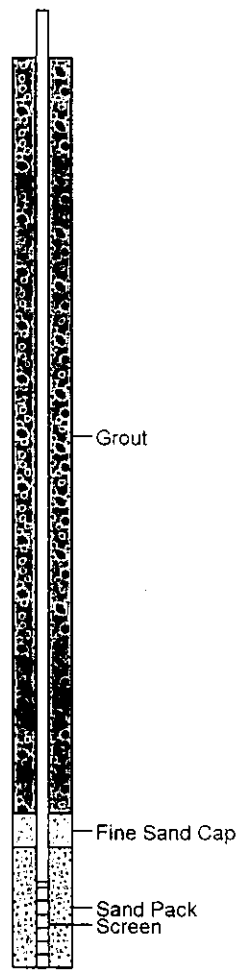
LOG OF BORING DP-3/4

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/7/01	Company Rep.	: B. Chitten
Date Completed	: 11/7/01	Northing Coord.	: 1356050.85
Hole Diameter	: 1.5 in.	Easting Coord.	: 625213.95
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.30	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Grayish Black grading into Grayish Brown to Grayish Orange well sorted, fine grained
10	69		SAND with minor Dark Minerals, White, fine grained
15	64		SILTY SAND, Grayish Orange grading more silty into Dark Yellowish Brown to Dark Gray, well sorted, fine grained
35	44		SILTY SAND, Dusky Yellowish Brown fine grained grading more coarse into Moderate Yellowish Brown medium to fine grained
45	34		SILTY SAND with Dark Minerals, Grayish Olive, well sorted, fine grained, medium grains of Dark Minerals at 50ft.
50	29		SILTY SAND with minor Dark Minerals, Moderate Yellowish Brown to Pale Olive to Grayish Olive, well sorted, fine grained
65	14		SILTY CLAYEY SAND with Cemented Clay Nodules, Grayish Olive
70	9		SILTY SAND, Grayish Olive
75			

Piezometer: DP-3
TOC Elev.: 82.22



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/7/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-3.boi

Kubal-Furr & Associates
-Environmental Consultants-

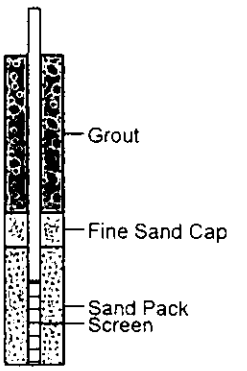
LOG OF BORING DP-3/4

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/7/01	Company Rep.	: B. Chitten
Date Completed	: 11/7/01	Northing Coord.	: 1356053.84
Hole Diameter	: 1.5 in.	Easting Coord.	: 625219.58
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.30	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Grayish Black grading into Grayish Brown to Grayish Orange well sorted, fine grained
5	74		
10	69		SAND with minor Dark Minerals, White, fine grained
15	64		SILTY SAND, Grayish Orange grading more silty into Dark Yellowish Brown to Dark Gray, well sorted, fine grained
20	59		
25	54		
30	49		
35	44		
40	39		SILTY SAND, Dusky Yellowish Brown fine grained grading more coarse into Moderate Yellowish Brown medium to fine grained
45	34		SILTY SAND with Dark Minerals, Grayish Olive, well sorted, fine grained, medium grains of Dark Minerals at 50ft.
50	29		SILTY SAND with minor Dark Minerals, Moderate Yellowish Brown to Pale Olive to Grayish Olive, well sorted, fine grained
55	24		
60	19		
65	14		SILTY CLAYEY SAND with Cemented Clay Nodules, Grayish Olive
70	9		SILTY SAND, Grayish Olive
75			

Piezometer: DP-4
TOC Elev.: 82.24



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/6/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-26-02 C:\Program Files\vmtech2002\OMNI Logs\DP-4.bor

Kubal-Furr & Associates
-Environmental Consultants-

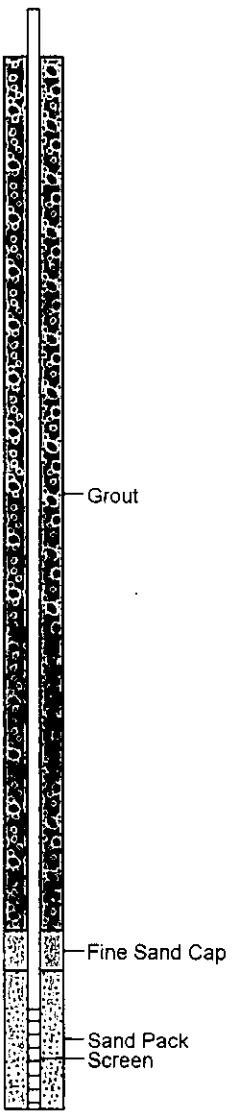
LOG OF BORING DP-5/6

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/6/01	Company Rep.	: B. Chitten
Date Completed	: 11/6/01	Northing Coord.	: 1355353.25
Hole Diameter	: 1.5 in.	Easting Coord.	: 624128.08
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 81.60	GRAPHIC	DESCRIPTION
0	81		SILTY SAND, Black, well sorted, fine grained
			SAND, Very Light Gray, fine grained
5	76		SILTY SAND, Black grading to Dark Yellowish Brown to Black, well sorted, fine grained
10	71		
15	66		SILTY SAND with minor Dark Minerals, Moderate Brown grading into Moderate Yellowish Brown, well sorted, fine grained
20	61		SILTY SAND, Moderate Yellowish Brown grading into Black to Grayish Brown, fine grained
25	56		
30	51		
35	46		
40	41		SILTY SAND with Dark Minerals (10%), Dark Yellowish Brown, well sorted, fine grained
45	36		
50	31		SILTY SAND with Dark Minerals, Light Olive Gray grading into Olive Gray, well sorted, fine grained
55	26		
			SILTY SAND with small (2mm-15mm) Moderate Yellowish Brown Cemented Clay Nodules, Grayish Black
60	21		CLAYEY SILTY SAND, Grayish Black, well sorted, fine grained
			CLAYEY SAND, Grayish Black
65			

Piezometer: DP-5
TOC Elev.: 84.13



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/6/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-5.boi

Kubal-Furr & Associates
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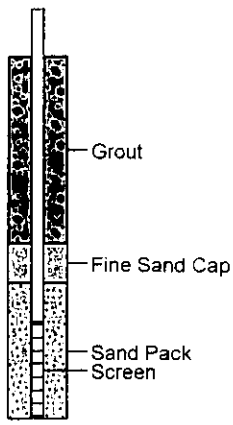
LOG OF BORING DP-5/6

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/6/01	Company Rep.	: B. Chitten
Date Completed	: 11/6/01	Northing Coord.	: 1355356.37
Hole Diameter	: 1.5 in.	Easting Coord.	: 624125.45
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 81.60	GRAPHIC	DESCRIPTION
0	81		SILTY SAND, Black, well sorted, fine grained
			SAND, Very Light Gray, fine grained
5	76		SILTY SAND, Black grading to Dark Yellowish Brown to Black, well sorted, fine grained
10	71		
15	66		SILTY SAND with minor Dark Minerals, Moderate Brown grading into Moderate Yellowish Brown, well sorted, fine grained
20	61		SILTY SAND, Moderate Yellowish Brown grading into Black to Grayish Brown, fine grained
25	56		
30	51		
35	46		
40	41		SILTY SAND with Dark Minerals (10%), Dark Yellowish Brown, well sorted, fine grained
45	36		
50	31		SILTY SAND with Dark Minerals, Light Olive Gray grading into Olive Gray, well sorted, fine grained
55	26		
			SILTY SAND with small (2mm-15mm) Moderate Yellowish Brown Cemented Clay Nodules, Grayish Black
60	21		CLAYEY SILTY SAND, Grayish Black, well sorted, fine grained
			CLAYEY SAND, Grayish Black
65			

Piezometer: DP-6
TOC Elev.: 84.23



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/6/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

02-26-02 C:\Program Files\vmtech2002\OMNI Logs\DP-6.boi

Kubal-Furr & Associates
-Environmental Consultants-

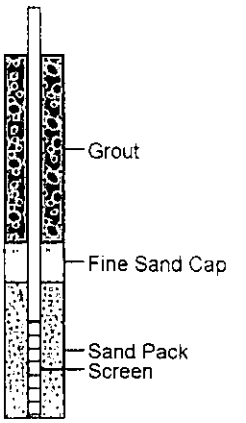
LOG OF BORING DP-7/8

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/7/01	Company Rep.	: B. Chitten
Date Completed	: 11/8/01	Northing Coord.	: 1355177.88
Hole Diameter	: 1.5 in.	Easting Coord.	: 625941.53
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.60	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Brownish Black grading into Dark Yellowish Brown to Pale Yellowish Brown to Dark Yellowish Brown, well sorted, fine grained
5	74		
10	69		
15	64		
20	59		SILTY SAND with Dark Minerals, Pale Yellowish Brown to Pale Brown to Dark Yellowish Brown, medium to fine grained grading to fine grained
25	54		
30	49		SILTY SAND, Brownish Gray to Dusky Yellowish Brown to Dark Yellowish Brown, well sorted, fine grained
35	44		
40	39		SILTY SAND with Dark Minerals, Dusky Yellowish Brown to Grayish Olive to Light Olive, fine grained
45	34		
50	29		
55	24		
60	19		CLAYEY SAND with Dark Minerals, Grayish Olive, fine grained
65			

Piezometer: DP-7
TOC Elev.: 82.63



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/7/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

02-28 C:\Program Files\Intech2002\OMNI Logs\DP-7.bo

Kubal-Furr & Associates
-Environmental Consultants-

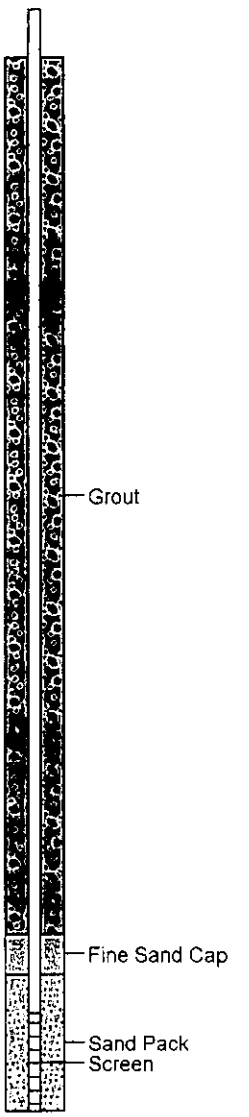
LOG OF BORING DP-7/8

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/7/01	Company Rep.	: B. Chitten
Date Completed	: 11/8/01	Northing Coord.	: 1355182.23
Hole Diameter	: 1.5 in.	Easting Coord.	: 625941.31
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.60	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Brownish Black grading into Dark Yellowish Brown to Pale Yellowish Brown to Dark Yellowish Brown, well sorted, fine grained
5	74		
10	69		
15	64		
20	59		SILTY SAND with Dark Minerals, Pale Yellowish Brown to Pale Brown to Dark Yellowish Brown, medium to fine grained grading to fine grained
25	54		
30	49		SILTY SAND, Brownish Gray to Dusky Yellowish Brown to Dark Yellowish Brown, well sorted, fine grained
35	44		
40	39		SILTY SAND with Dark Minerals, Dusky Yellowish Brown to Grayish Olive to Light Olive, fine grained
45	34		
50	29		
55	24		
60	19		
65			CLAYEY SAND with Dark Minerals, Grayish Olive, fine grained

Piezometer: DP-8
TOC Elev.: 82.78



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/7/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-8.bor

Kubal-Furr & Associates
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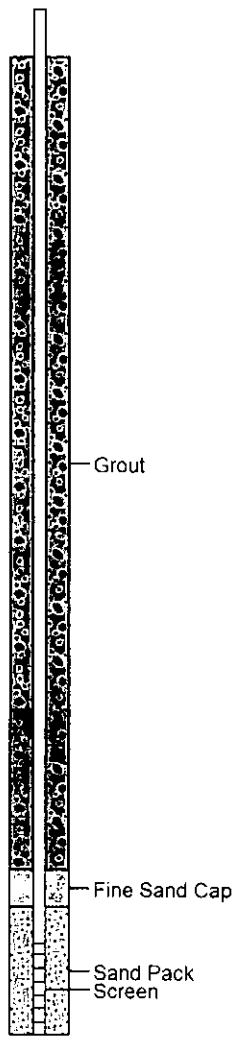
LOG OF BORING DP-9/10

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/8/01	Company Rep.	: B. Chitten
Date Completed	: 11/9/01	Northing Coord.	: 1354970.41
Hole Diameter	: 1.5 in.	Easting Coord.	: 626691.23
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 78.90	GRAPHIC	DESCRIPTION
0	78		SILTY SAND, Black grading through Moderate Yellowish Brown to Grayish Orange, well sorted, fine grained
5	73		
10	68		SAND, Clean White with minor Dark Minerals, well sorted fine grained
			SILTY SAND with minor Dark Minerals, well sorted, fine grained
15	63		SILTY SAND, Pale Yellowish Brown grading into Dark Yellowish Brown to Medium Gray, medium to fine grained, At 47' dark Yellowish Brown Clay Nodules
20	58		
25	53		
30	48		
35	43		
40	38		
45	33		
50	28		SILTY SAND, Grayish Olive, grades more silty, fine grained
55	23		
60	18		
65	13		SHELLY CLAY, Light Olive Gray
			SANDY CLAY with Shell Fragments, Light Olive Gray
70			

Piezometer: DP-9
TOC Elev.: 81.58



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/8/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-9.bor

Kubal-Furr & Associates
-Environmental Consultants-

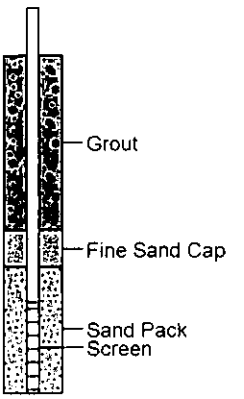
LOG OF BORING DP-9/10

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/8/01	Company Rep.	: B. Chitten
Date Completed	: 11/9/01	Northing Coord.	: 1354970.16
Hole Diameter	: 1.5 in.	Easting Coord.	: 626687.84
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 78.90	DESCRIPTION
0	78	SILTY SAND, Black grading through Moderate Yellowish Brown to Grayish Orange, well sorted, fine grained
5	73	
10	68	SAND, Clean White with minor Dark Minerals, well sorted fine grained
		SILTY SAND with minor Dark Minerals, well sorted, fine grained
15	63	SILTY SAND, Pale Yellowish Brown grading into Dark Yellowish Brown to Medium Gray, medium to fine grained, At 47' dark Yellowish Brown Clay Nodules
20	58	
25	53	
30	48	
35	43	
40	38	
45	33	
50	28	SILTY SAND, Grayish Olive, grades more silty, fine grained
55	23	
60	18	
65	13	SHELLY CLAY, Light Olive Gray
		SANDY CLAY with Shell Fragments, Light Olive Gray
70		

Piezometer: DP-10
TOC Elev.: 81.59



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/8/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-10.bor

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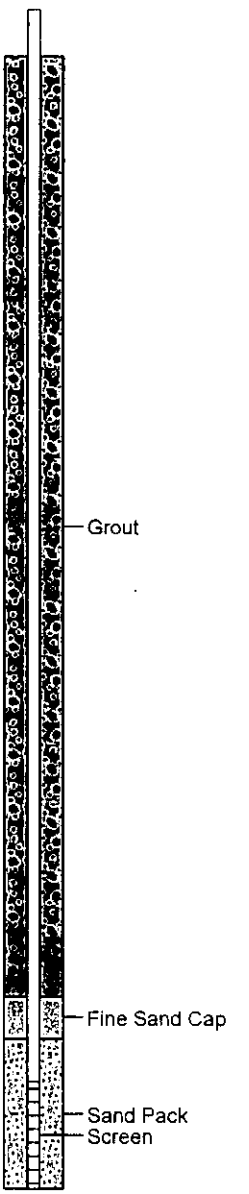
-Environmental Consultants-

LOG OF BORING DP-11/12

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/27/01	Company Rep.	: B. Chitten
Date Completed	: 11/27/01	Northing Coord.	: 1354609.00
Hole Diameter	: 1.5 in.	Easting Coord.	: 625190.27
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 81.20	GRAPHIC	DESCRIPTION
0	81		SILTY SAND, Gray grading into Dusky Yellowish Brown to Grayish Orange, fine grained
5	76		
10	71		
15	66		
20	61		
25	56		SILTY SAND, Moderate Yellowish Brown grading into Dusky Yellowish Brown, medium to fine grained
30	51		
35	46		
40	41		SILTY SAND, Grayish Olive grading into Light Olive Gray to Grayish Olive, medium to fine grained, medium grained Black Pebbles at 56ft.
45	36		
50	31		
55	26		
60			Slightly SANDY CLAY, Grayish Olive



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/16/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

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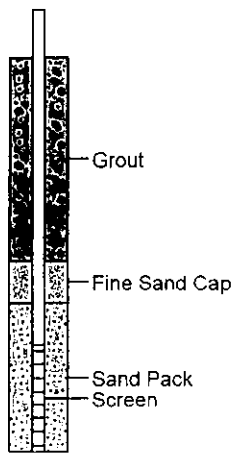
LOG OF BORING DP-11/12

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/27/01	Company Rep.	: B. Chitten
Date Completed	: 11/27/01	Northing Coord.	: 1354604.52
Hole Diameter	: 1.5 in.	Easting Coord.	: 625187.66
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 81.20	GRAPHIC	DESCRIPTION
0	81		SILTY SAND, Gray grading into Dusky Yellowish Brown to Grayish Orange, fine grained
5	76		
10	71		
15	66		
20	61		
25	56		SILTY SAND, Moderate Yellowish Brown grading into Dusky Yellowish Brown, medium to fine grained
30	51		
35	46		
40	41		SILTY SAND, Grayish Olive grading into Light Olive Gray to Grayish Olive, medium to fine grained, medium grained Black Pebbles at 56ft.
45	36		
50	31		
55	26		
60			Slightly SANDY CLAY, Grayish Olive

Piezometer: DP-12
TOC Elev.: 84.18



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/12/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

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Kubal-Furr & Associates
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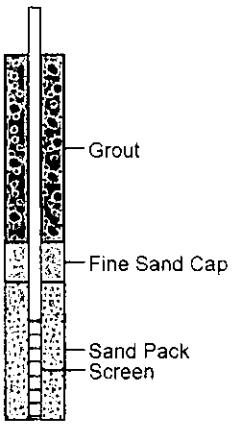
PIEZOMETER DP-13

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/12/01	Company Rep.	: B. Chitten
Date Completed	: 11/23/01	Northing Coord.	: 1354519.86
Hole Diameter	: 1.5 in.	Easting Coord.	: 626168.29
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 80.00	GRAPHIC	DESCRIPTION
0	80		SILTY SAND, Gray grading into Dark Yellowish Brown to Grayish Orange to Dark Yellowish Brown, fine grained
5	75		
10	70		
15	65		
20	60		
25	55		
30	50		
35	45		
40	40		SILTY SAND with minor Dark Minerals, Grayish Orange grading more silty into Dark Gray, medium to fine grained
45	35		
50	30		
55	25		CLAYEY SILTY SAND with minor Black Pebbles, Grayish Olive, fine grained
60	20		CLAYEY SAND, Grayish Olive
65			

Piezometer: DP-13
TOC Elev.: 83.09



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/12/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

No Geoprobe boring performed at DP-13. Lithology taken from closest boring, DP-16/17.

02-28 C:\Program Files\mitech2002\OMNI Logs\DP-13.boi

Kubal-Furr & Associates
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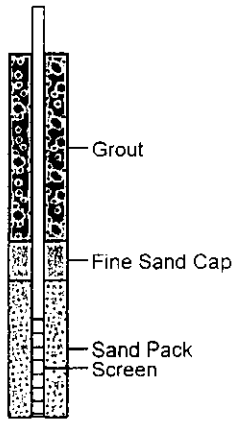
LOG OF BORING DP-14/15

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/12/01	Company Rep.	: B. Chitten
Date Completed	: 11/12/01	Northing Coord.	: 1354321.35
Hole Diameter	: 1.5 in.	Easting Coord.	: 626873.19
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 78.90	GRAPHIC	DESCRIPTION
0	78		SILTY SAND, Black grading into Dark Gray to Pale Yellowish Brown, fine grained, Dark Yellow Nodules at 3.5
5	73		SILTY SAND, Grayish Orange with Wood Fragments
10	68		SILTY SAND, Pale Yellowish Brown grading into Dark Yellowish Brown to Grayish Brown, fine grained
15	63		
20	58		SILTY SAND, Dark Yellowish Brown grading into Dusky Yellowish Brown to Grayish Black, medium to fine grained
25	53		
30	48		
35	43		
40	38		
45	33		SILTY SAND, Olive Gray to Light Olive Gray, fine grained
50	28		
55	23		
60	18		CLAYEY SILTY SAND, Olive Gray, fine grained
65			CLAYEY SHELLY SAND with Black Nodules (1mm-5mm), Olive Gray

Piezometer: DP-14
TOC Elev.: 81.97



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/8/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

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Kubal-Furr & Associates
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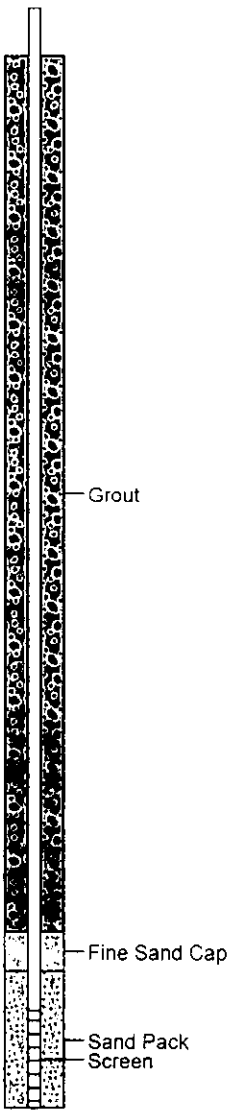
LOG OF BORING DP-14/15

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/12/01	Company Rep.	: B. Chitten
Date Completed	: 11/12/01	Northing Coord.	: 1354318.16
Hole Diameter	: 1.5 in.	Easting Coord.	: 626873.34
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 78.90	GRAPHIC	DESCRIPTION
0	78		SILTY SAND, Black grading into Dark Gray to Pale Yellowish Brown, fine grained, Dark Yellow Nodules at 3.5
5	73		SILTY SAND, Grayish Orange with Wood Fragments
10	68		SILTY SAND, Pale Yellowish Brown grading into Dark Yellowish Brown to Grayish Brown, fine grained
15	63		
20	58		SILTY SAND, Dark Yellowish Brown grading into Dusky Yellowish Brown to Grayish Black, medium to fine grained
25	53		
30	48		
35	43		
40	38		
45	33		SILTY SAND, Olive Gray to Light Olive Gray, fine grained
50	28		
55	23		
60	18		CLAYEY SILTY SAND, Olive Gray, fine grained
65			CLAYEY SHELLY SAND with Black Nodules (1mm-5mm), Olive Gray

Piezometer: DP-15
TOC Elev.: 81.98



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/8/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-2 C:\Program Files\mtech2002\OMNI Logs\DP-15.bo

Kubal-Furr & Associates
-Environmental Consultants-

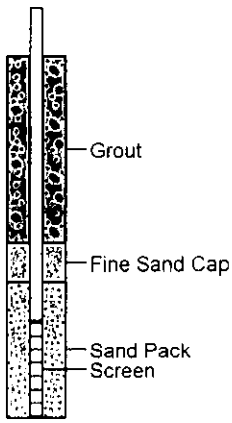
LOG OF BORING DP-16/17

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/12/01	Company Rep.	: B. Chitten
Date Completed	: 11/23/01	Northing Coord.	: 1354048.17
Hole Diameter	: 1.5 in.	Easting Coord.	: 626132.23
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.50	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Gray grading into Dark Yellowish Brown to Grayish Orange to Dark Yellowish Brown, fine grained
5	74		
10	69		
15	64		
20	59		
25	54		
30	49		
35	44		
			SILTY SAND with minor Dark Minerals, Grayish Orange grading more silty into Dark Gray, medium to fine grained
40	39		
45	34		
50	29		
55	24		
			CLAYEY SILTY SAND with minor Black Pebbles, Grayish Olive, fine grained
60	19		CLAYEY SAND, Grayish Olive
65			

Piezometer: DP-16
TOC Elev.: 82.57



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/9/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-2 C:\Program Files\mtech2002\OMNI Logs\DP-16.bo

Kubal-Furr & Associates
-Environmental Consultants-

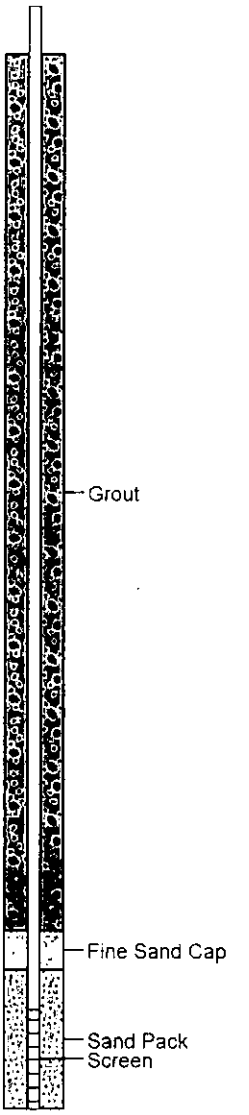
LOG OF BORING DP-16/17

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/12/01	Company Rep.	: B. Chitten
Date Completed	: 11/23/01	Northing Coord.	: 1354047.58
Hole Diameter	: 1.5 in.	Easting Coord.	: 626135.33
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.50	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Gray grading into Dark Yellowish Brown to Grayish Orange to Dark Yellowish Brown, fine grained
5	74		
10	69		
15	64		
20	59		
25	54		
30	49		
35	44		
40	39		SILTY SAND with minor Dark Minerals, Grayish Orange grading more silty into Dark Gray, medium to fine grained
45	34		
50	29		
55	24		CLAYEY SILTY SAND with minor Black Pebbles, Grayish Olive, fine grained
60	19		CLAYEY SAND, Grayish Olive
65			

Piezometer: DP-17
TOC Elev.: 82.58



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/9/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-22-02 C:\Program Files\mtech2002\OMNI Logs\DP-17.boi

Kubal-Furr & Associates
-Environmental Consultants-

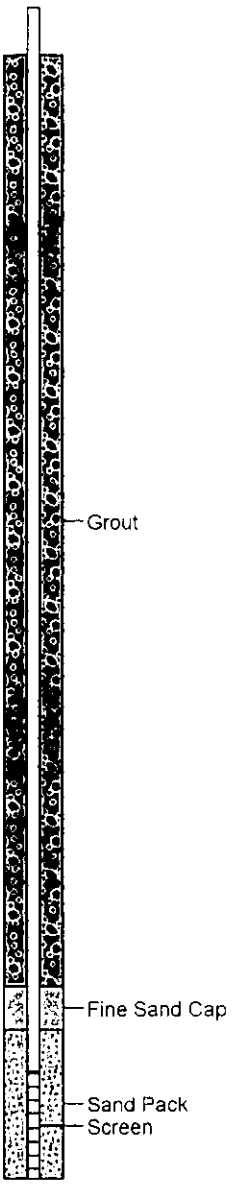
LOG OF BORING DP-18/19

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/27/01	Company Rep.	: B. Chitten
Date Completed	: 11/27/01	Northing Coord.	: 135592.44
Hole Diameter	: 1.5 in.	Easting Coord.	: 624195.90
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 81.20	GRAPHIC	DESCRIPTION
0	81		SILTY SAND, Gray grading into Grayish Brown to Moderate Yellowish Brown fine grained
5	76		
10	71		
15	66		
20	61		SAND, Dark Yellowish Orange grading into Grayish Orange
25	56		SILTY SAND, Moderate Yellowish Brown grading into Light Olive Gray to Dark Gray, medium to fine grained
30	51		
35	46		
40	41		
45	36		
50	31		
55	26		CLAYEY SILTY SAND with Clay Nodules, Dark Gray
			CLAYEY SAND, Dark Gray, fine grained
60			

Piezometer: DP-18
TOC Elev.: 84.38



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/19/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

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Kubal-Furr & Associates
-Environmental Consultants-

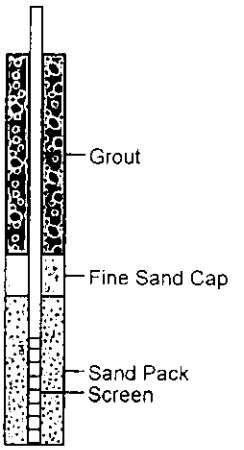
LOG OF BORING DP-18/19

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/27/01	Company Rep.	: B. Chitten
Date Completed	: 11/27/01	Northing Coord.	: 1353596.07
Hole Diameter	: 1.5 in.	Easting Coord.	: 624200.39
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 81.20	GRAPHIC	DESCRIPTION
0	81		SILTY SAND, Gray grading into Grayish Brown to Moderate Yellowish Brown fine grained
5	76		
10	71		
15	66		
20	61		SAND, Dark Yellowish Orange grading into Grayish Orange
25	56		SILTY SAND, Moderate Yellowish Brown grading into Light Olive Gray to Dark Gray, medium to fine grained
30	51		
35	46		
40	41		
45	36		
50	31		
55	26		CLAYEY SILTY SAND with Clay Nodules, Dark Gray
60			CLAYEY SAND, Dark Gray, fine grained

Piezometer: DP-19
TOC Elev.: 84.34



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/15/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

02-2 C:\Program Files\mtech2002\OMNI Logs\DP-18.boi

Kubal-Furr & Associates
-Environmental Consultants-

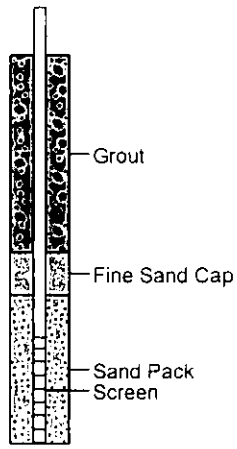
LOG OF BORING DP-20/21

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/9/01	Company Rep.	: B. Chitten
Date Completed	: 11/9/01	Northing Coord.	: 1353034.67
Hole Diameter	: 1.5 in.	Easting Coord.	: 625503.33
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.80	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Dark Gray grading into Grayish Brown to Grayish Orange to Dusky Yellowish Brown, fine grained
5	74		
10	69		
15	64		
20	59		
25	54		
30	49		SILTY SAND, Black grading into Moderate Yellowish Brown with minor Dark Minerals
35	44		
40	39		SILTY SAND, Dark Yellowish Brown grading more silty into Grayish Olive to Grayish Black, fine grained
45	34		
50	29		
55	24		CLAYEY SILTY SAND, Grayish Black, fine grained
60			

Piezometer: DP-20
TOC Elev.: 83.07



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/12/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

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Kubal-Furr & Associates
-Environmental Consultants-

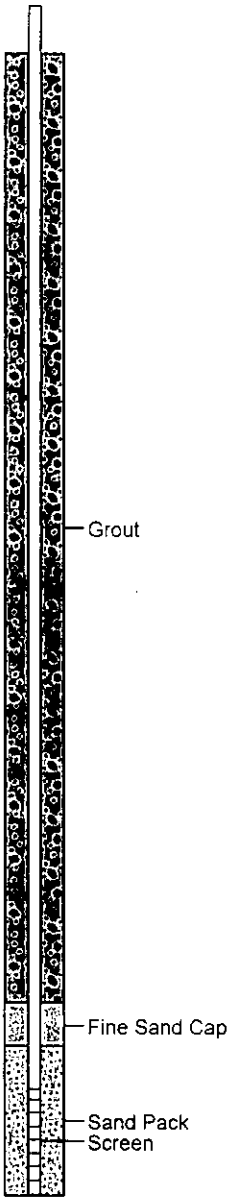
LOG OF BORING DP-20/21

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/9/01	Company Rep.	: B. Chitten
Date Completed	: 11/9/01	Northing Coord.	: 1353030.01
Hole Diameter	: 1.5 in.	Easting Coord.	: 625502.82
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.80	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Dark Gray grading into Grayish Brown to Grayish Orange to Dusky Yellowish Brown, fine grained
5	74		
10	69		
15	64		
20	59		
25	54		
30	49		SILTY SAND, Black grading into Moderate Yellowish Brown with minor Dark Minerals
35	44		
40	39		SILTY SAND, Dark Yellowish Brown grading more silty into Grayish Olive to Grayish Black, fine grained
45	34		
50	29		
55	24		CLAYEY SILTY SAND, Grayish Black, fine grained
60			

Piezometer: DP-21
TOC Elev.: 83.00



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/12/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
Fine Sand Cap	: 30/45 Sand

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-21.bor

Kubal-Furr & Associates
-Environmental Consultants-

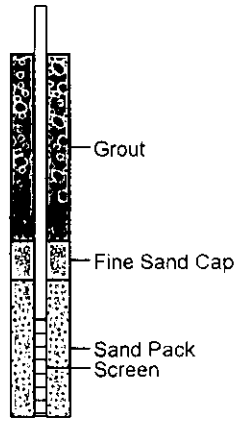
LOG OF BORING DP-22/23

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/9/01	Company Rep.	: B. Chitten
Date Completed	: 11/12/01	Northing Coord.	: 1353637.77
Hole Diameter	: 1.5 in.	Easting Coord.	: 627171.49
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 78.30	GRAPHIC	DESCRIPTION
0	78		SILTY SAND, Black grading into Pale Yellowish Brown to Grayish Black, fine grained
5	73		
10	68		
15	63		
20	58		
25	53		
30	48		
35	43		
40	38		SILTY SAND with minor Dark Minerals, Olive Gray to Light Olive to Grayish Olive, medium to fine grained
45	33		
50	28		
55	23		
60	18		SANDY CLAY with minor Shell Fragments, Grayish Olive
65			SHELLY SANDY CLAY, Pale Olive

Piezometer: DP-22
TOC Elev.: 81.00



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/9/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-22.boi

Kubal-Furr & Associates
-Environmental Consultants-

LOG OF BORING DP-22/23

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/9/01	Company Rep.	: B. Chitten
Date Completed	: 11/12/01	Northing Coord.	: 1353641.31
Hole Diameter	: 1.5 in.	Easting Coord.	: 627170.88
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 78.30
0	78
5	73
10	68
15	63
20	58
25	53
30	48
35	43
40	38
45	33
50	28
55	23
60	18
65	

GRAPHIC

DESCRIPTION

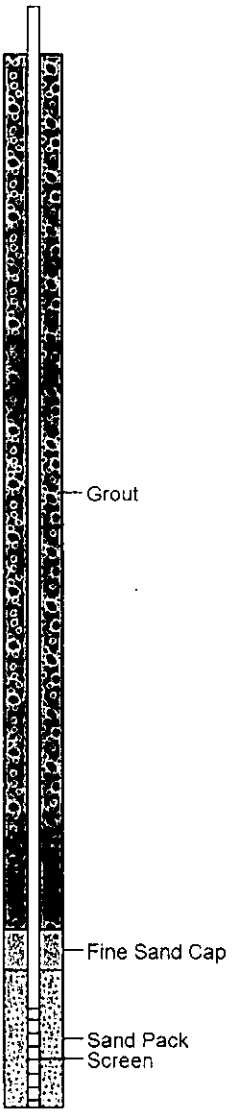
SILTY SAND, Black grading into Pale Yellowish Brown to Grayish Black, fine grained

SILTY SAND with minor Dark Minerals, Olive Gray to Light Olive to Grayish Olive, medium to fine grained

SANDY CLAY with minor Shell Fragments, Grayish Olive

SHELLY SANDY CLAY, Pale Olive

Piezometer: DP-23
TOC Elev.: 81.27



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/9/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-23.boi

Kubal-Furr & Associates
-Environmental Consultants-

PIEZOMETER DP-24

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/12/01	Company Rep.	: B. Chitten
Date Completed	: 11/23/01	Northing Coord.	: 1353736.22
Hole Diameter	: 1.5 in.	Easting Coord.	: 626342.40
Drilling Method	: Geoprobe	Survey By	: Johnston's Surveying
Sampling Method	: Geoprobe	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.20
0	79
5	74
10	69
15	64
20	59
25	54
30	49
35	44
40	39
45	34
50	29
55	24
60	19
65	

GRAPHIC

DESCRIPTION

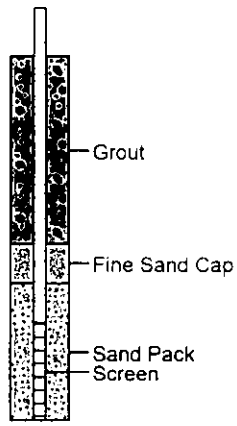
SILTY SAND, Gray grading into Dark Yellowish Brown to Grayish Orange to Dark Yellowish Brown, fine grained

SILTY SAND with minor Dark Minerals, Grayish Orange grading more silty into Dark Gray, medium to fine grained

CLAYEY SILTY SAND with minor Black Pebbles, Grayish Olive, fine grained

CLAYEY SAND, Grayish Olive

Piezometer: DP-24
TOC Elev.: 82.22



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/12/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: R. Wilkie

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot

SAND PACK : 20/30 Sand

FINE SAND CAP : 30/45 Sand

No Geoprobe boring performed at DP-24. Lithology taken from closest boring, DPT 16/17.

02-26-02 C:\Program Files\mtech2002\OMNI Logs\DP-24.boi

Kubal-Furr & Associates
-Environmental Consultants-

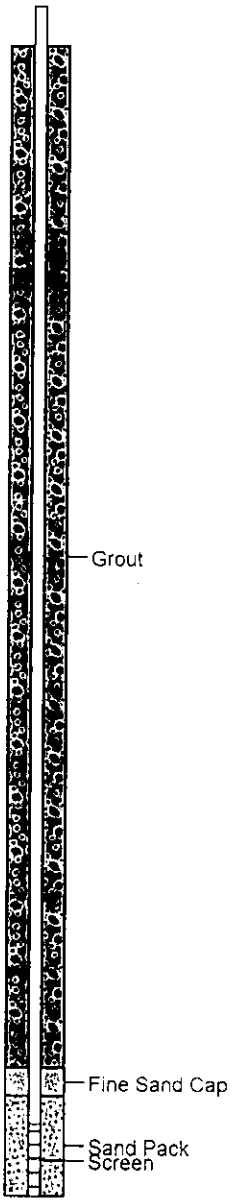
PIEZOMETER SZ-1

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/28/01	Company Rep.	: H. Hammal
Date Completed	: 11/28/01	Northing Coord.	: 1355170.25
Hole Diameter	: 5 5/8 in.	Easting Coord.	: 625942.43
Drilling Method	: HSA	Survey By	: Johnston's Surveying
		Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.60	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Brownish Black grading into Dark Yellowish Brown to Pale Yellowish Brown to Dark Yellowish Brown, well sorted, fine grained
5	74		
10	69		
15	64		
20	59		SILTY SAND with Dark Minerals, Pale Yellowish Brown to Pale Brown to Dark Yellowish Brown, medium to fine grained grading to fine grained
25	54		
30	49		SILTY SAND, Brownish Gray to Dusky Yellowish Brown to Dark Yellowish Brown, well sorted, fine grained
35	44		
40	39		SILTY SAND with Dark Minerals, Dusky Yellowish Brown to Grayish Olive to Light Olive, fine grained
45	34		
50	29		
55	24		
60	19		
65	14		CLAYEY SAND with Dark Minerals, Grayish Olive, fine grained
70	9		SHELLY SAND with large Shell fragments (1-mm-50mm), Yellowish Gray, some whole shells
75	4		SHELL HASH with CLAY, Shell fragments from 5mm-50mm, Yellowish Gray
80	-1		SHELLY SAND with fragments from 5mm-25mm, Yellowish Gray to Pale Greenish Yellow
85	-6		
90			

Piezometer: SZ-1
TOC Elev.: 82.43



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/28/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: H. Hammal

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

Lithology taken from the closest borings, DP-7/8 and Sonic Boring SB-3.

Pushed Shelby Tube 66-68ft.

02-2 02 C:\Program Files\vmtech2002\OMNI Logs\SZ-1.boi

Kubal-Furr & Associates
-Environmental Consultants-

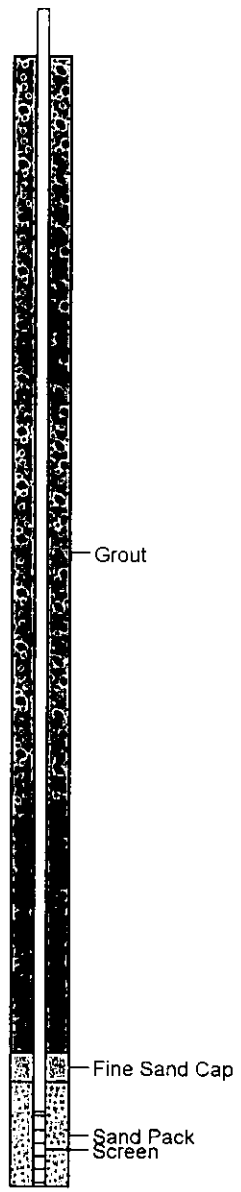
PIEZOMETER SZ-2

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/27/01	Company Rep.	: H. Hammal
Date Completed	: 11/27/01	Northing Coord.	: 1353030.47
Hole Diameter	: 5 5/8 in.	Easting Coord.	: 625511.10
Drilling Method	: HSA	Survey By	: Johnston's Surveying
		Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 79.80	GRAPHIC	DESCRIPTION
0	79		SILTY SAND, Dark Gray grading into Grayish Brown to Grayish Orange to Dusky Yellowish Brown, fine grained
5	74		
10	69		
15	64		
20	59		
25	54		
30	49		SILTY SAND, Black grading into Moderate Yellowish Brown with minor Dark Minerals
35	44		
40	39		SILTY SAND, Dark Yellowish Brown grading more silty into Grayish Olive to Grayish Black, fine grained
45	34		
50	29		
55	24		CLAYEY SILTY SAND, Grayish Black, fine grained
60	19		DISTURBED SAMPLE-55-65' CLAY with Shell Fragments (1mm-2mm), Grayish Green
65	14		SHELL HASH with Shell fragments 2mm-50mm, Clasts included complete Gastopods, Bivalves, Yellowish Gray, Poorly Sorted
70	9		
75	4		
80	-1		CLAYEY SAND to SANDY CLAY, medium to fine grained, Large Oyster Shell fragments (2mm-50mm), and Dark Minerals (10%) 90-115ft., Grayish Green to Dark Grayish Green
85			

Piezometer: SZ-2
TOC Elev.: 83.16



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/27/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: H. Hammal

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

Lithology taken from the closest borings, DP-20/21 and Sonic Boring SB-2.

Pushed Shelby Tube 60-62ft.

02-2 C:\Program Files\mtech2002\OMNI Logs\SZ-2.bo

Kubal-Furr & Associates
-Environmental Consultants-

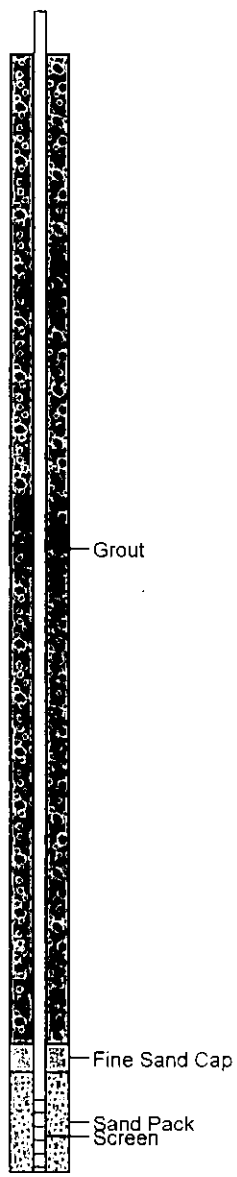
PIEZOMETER SZ-3

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/27/01	Company Rep.	: H. Hammal
Date Completed	: 11/28/01	Northing Coord.	: 1353629.43
Hole Diameter	: 5 5/8 in.	Easting Coord.	: 627175.45
Drilling Method	: HSA	Survey By	: Johnston's Surveying
		Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 78.30	GRAPHIC	DESCRIPTION
0	78		SILTY SAND, Black grading into Pale Yellowish Brown to Grayish Black, fine grained
5	73		
10	68		
15	63		
20	58		
25	53		
30	48		
35	43		
40	38		SILTY SAND with minor Dark Minerals, Olive Gray to Light Olive to Grayish Olive, medium to fine grained
45	33		
50	28		
55	23		
60	18		SANDY CLAY with minor Shell fragments, Grayish Olive
65	13		SHELLY SANDY CLAY, Pale Olive to Grayish Olive Green
70	8		SHELLY SAND with large Shell fragments (1-mm-50mm), Yellowish Gray, some whole shells
75	3		SHELL HASH with CLAY, Shell fragments from 5mm-50mm, Yellowish Gray
80	-2		SHELLY SAND with fragments from 5mm-25mm, Yellowish Gray to Pale Greenish Yellow
85	-7		
90			

Piezometer: SZ-3
TOC Elev.: 81.27



Piezometer Construction Information

PIEZOMETER CONSTRUCTION

Date Compl.	: 11/28/01
Hole Diameter	: 5 5/8 in.
Drill. Method	: HSA
Company Rep.	: H. Hammal

PIEZOMETER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

PIEZOMETER SCREEN

Material	: PVC
Diameter	: 2 in.
Length	: 5 ft.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/30 Sand
FINE SAND CAP	: 30/45 Sand

Lithology taken from the closest borings, DP-22/23 and Sonic Boring SB-3.

Pushed Shelby Tube 64'-66'

02-26-2002 C:\Program Files\mtech2002\OMNI Logs\SZ-3.bor

Attachment 2

PSI Laboratories
Permeability, Grain Size and Porosity Determinations

PSI Environmental Geotechnical Construction
Consulting • Engineering • Testing

RECEIVED
DEC 27 2001

December 18, 2001

Kubal-Furr & Associates
P.O. Box 273210
Tampa, Florida 33688-3210

ATTN: Mr. Jerry Kubal

RE: **Omni Oak Hammock Landfill**
Laboratory Testing
PSI Project No. 779-10225-1

Dear Mr. Kubal:

As requested, **Professional Service Industries, Inc. (PSI)** performed Permeability testing on five samples from the above referenced project. The samples were collected by the client and delivered to our office.

The results of the Permeability testing are in the following table.

PERMEABILITY TESTING		
Boring No.	**Depth**	**Permeability, k (cm/sec)**
SB-3	155' – 157'	3.65×10^{-7}
SB-2	145' – 147'	4.49×10^{-6}
SZ-3	64' – 66'	6.27×10^{-7}
SZ-2	60' – 62'	3.03×10^{-4}
SZ-1	66' – 68'	5.61×10^{-6}

Should you have any questions, please do not hesitate to contact our office.

Respectfully Submitted,
Professional Service Industries, Inc.

Tanya K. Schnier, E.I.
Project Manager
Construction Services

Martin E. Millburg, P.E. 12/19/01
Geotechnical Department Manager
FL Registration No. 36584

TKS/MEM/abm:cs\projects\2001\10225\001-ltr.doc

PSI Information To Build On
Engineering • Consulting • Testing

RECEIVED
DEC 27 2001

December 18, 2001

Kubal-Furr & Associates
P.O. Box 273210
Tampa, Florida 33688-3210

ATTN: Mr. Jerry Kubal

RE: **Omni Oak Hammock Landfill**
Laboratory Testing
PSI Project No. 779-10225-2

Dear Mr. Kubal:

As requested, **Professional Service Industries, Inc. (PSI)** performed Grain Size Analysis and Porosity testing on ten samples from the above referenced project. The samples were collected by the client and delivered to our office.

The results of the Grain Size Analysis and Porosity testing are on the attached sheets. Porosity testing was performed on remolded soils in our laboratory. The soils were tested in a very loose state, and the resulting porosity calculations will therefore be relatively high. In-situ soils will be more dense and could exhibit porosity values on the order of 0.3 to 0.35.

Should you have any questions, please do not hesitate to contact our office.

Respectfully Submitted,
Professional Service Industries, Inc.

Tanya K. Schnier, E.I.
Project Manager
Construction Services

Martin E. Millburg, P.E. 12/18/01
Geotechnical Department Manager
FL Registration No. 36584

TKS/MEM/abm:cs\projects\2001\10225\002-ltr.doc

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

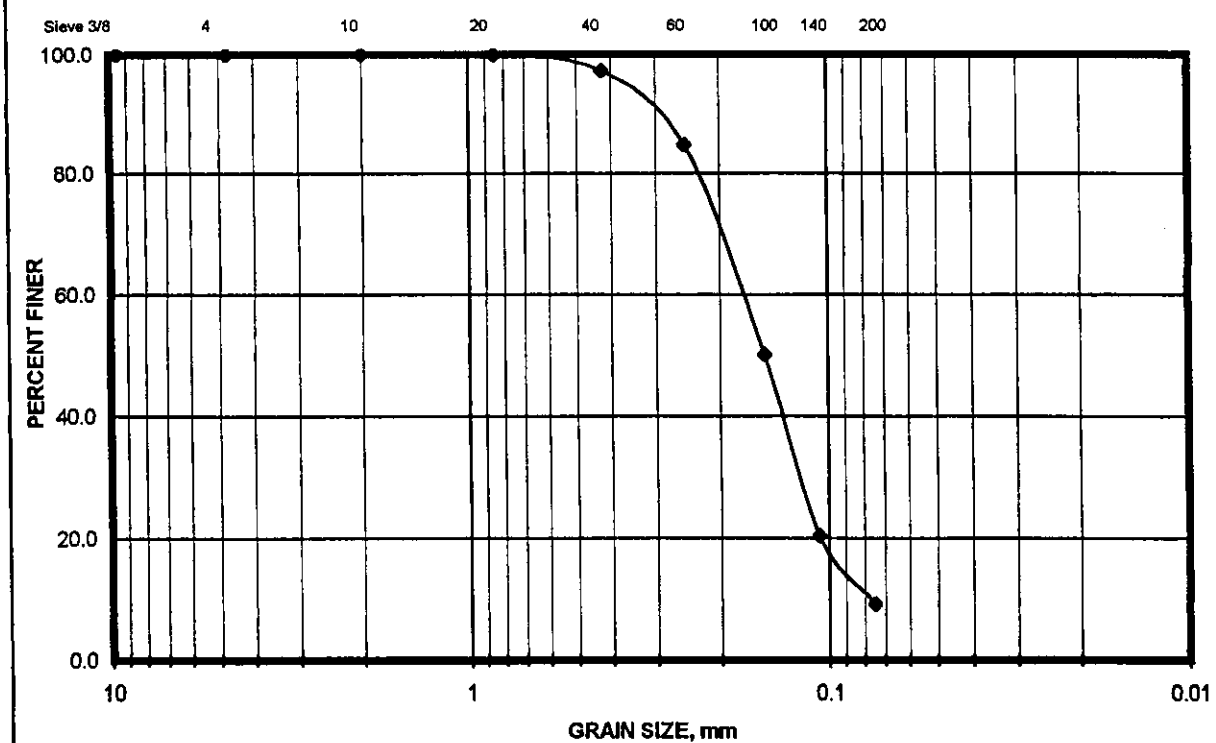
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 5/6@14'-16'

Porosity: 43.4%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	90.7	9.3

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

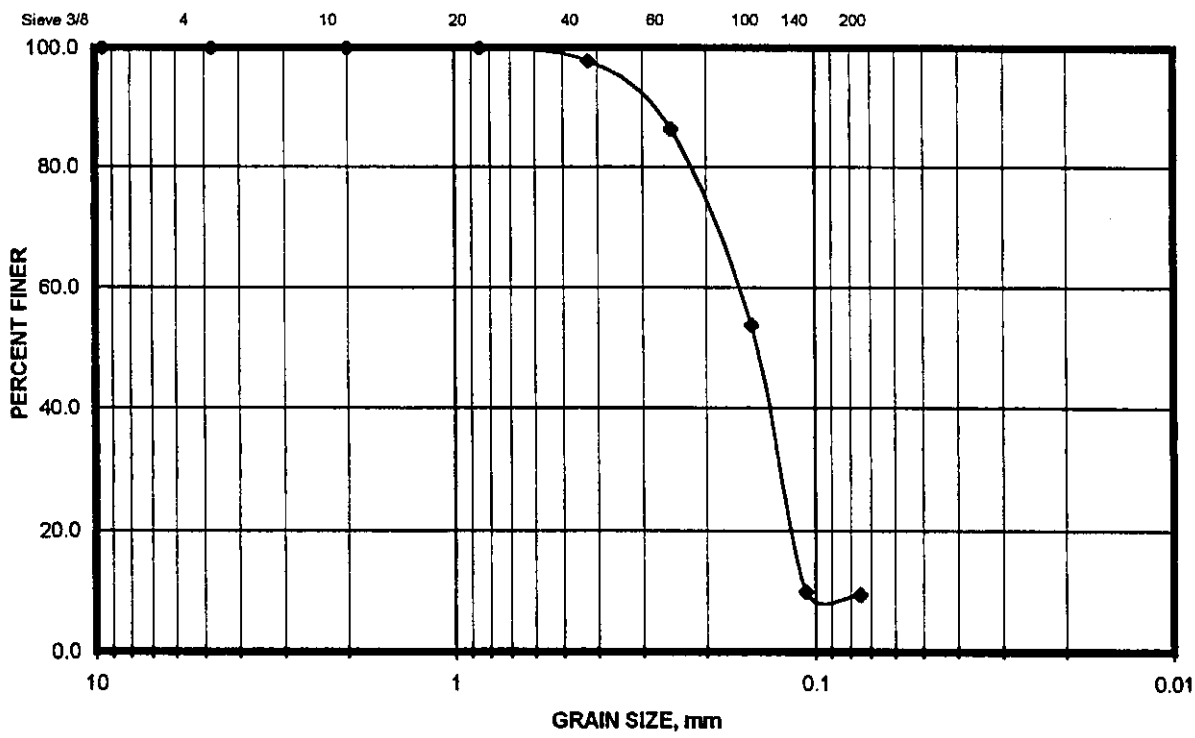
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 20/21@14'-16'

Porosity: 42.6%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	90.7	9.3

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

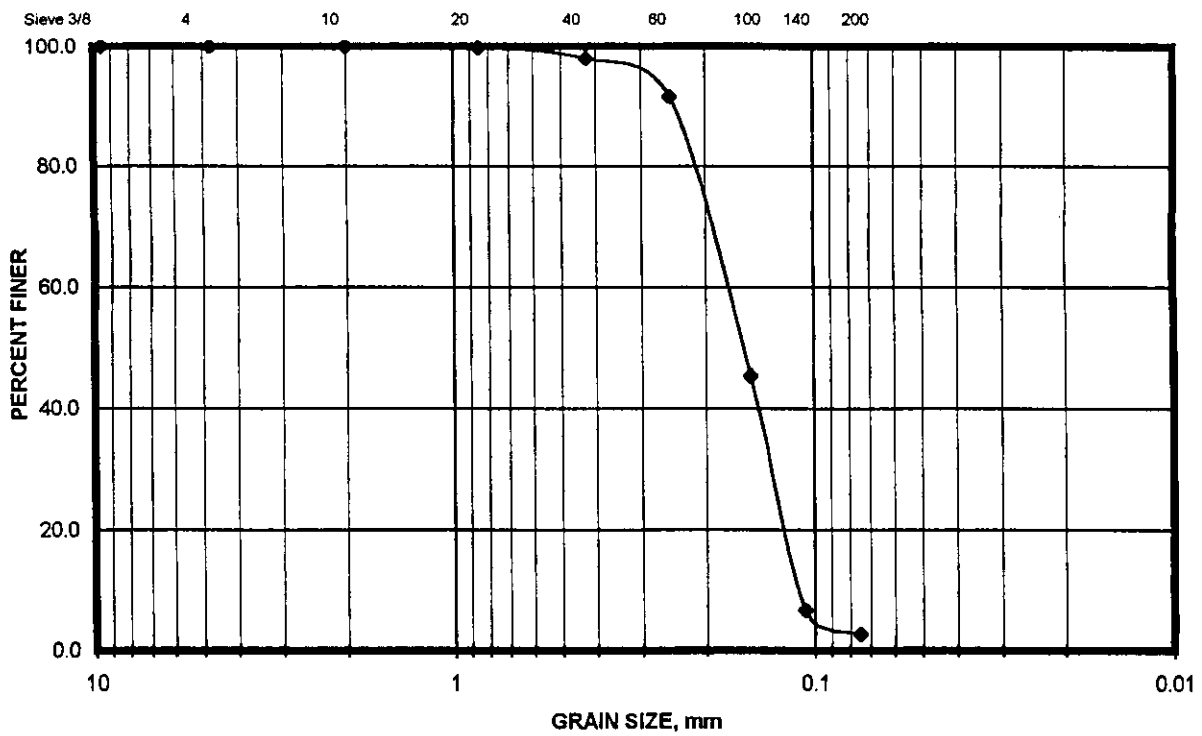
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 5/6@46'-48'

Porosity: 47.8%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	97.4	2.6

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

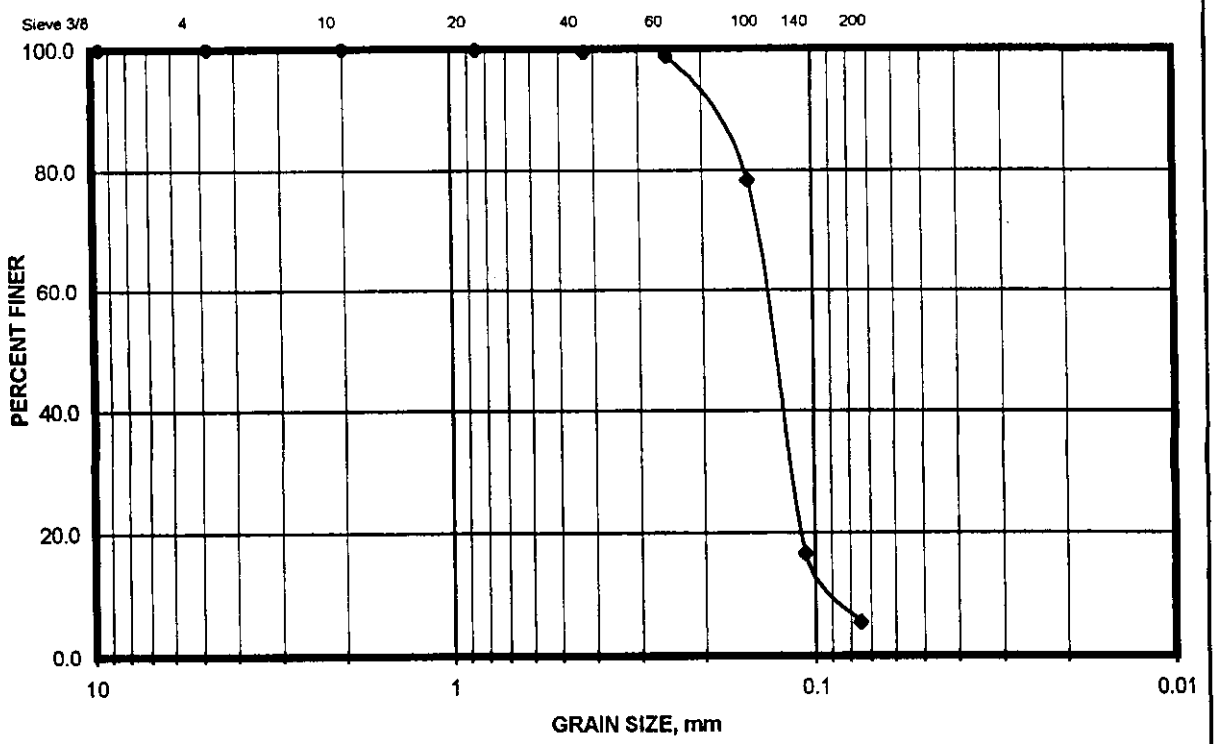
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 20/21@46'-48'

Porosity: 50.5%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	94.7	5.3

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

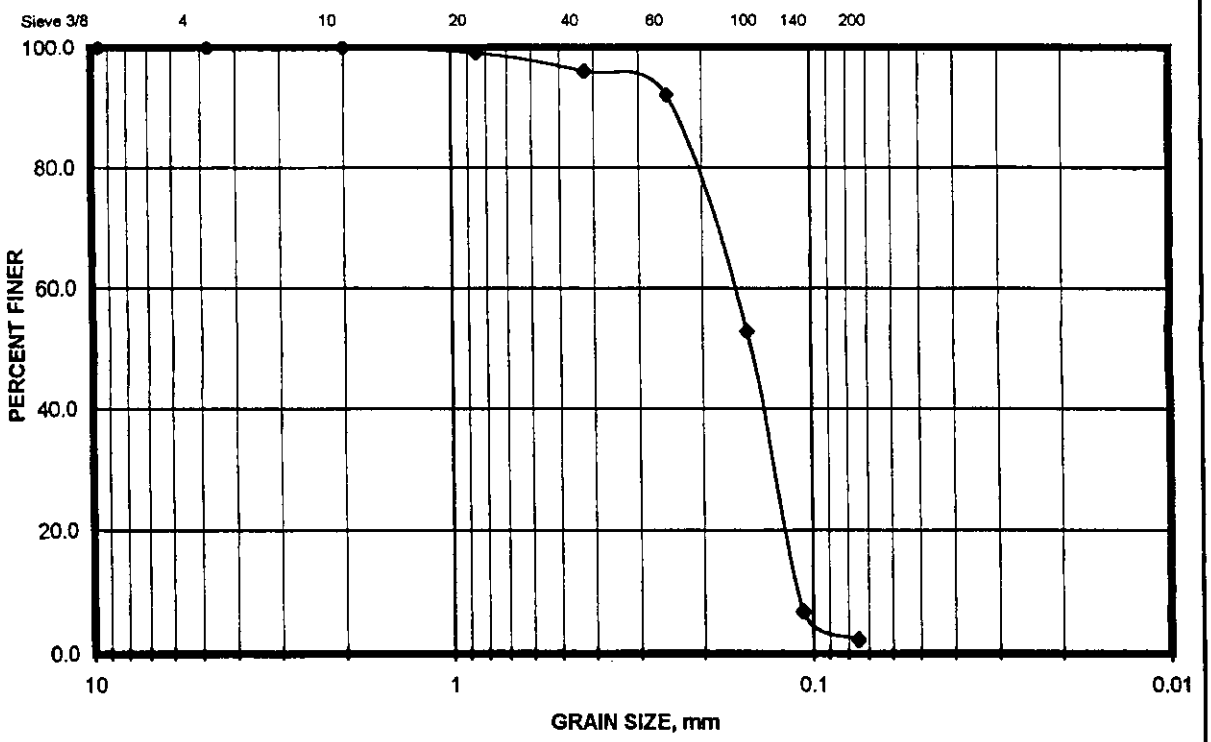
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 22/23@46'-48'

Porosity: 49.8%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	97.7	2.3

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

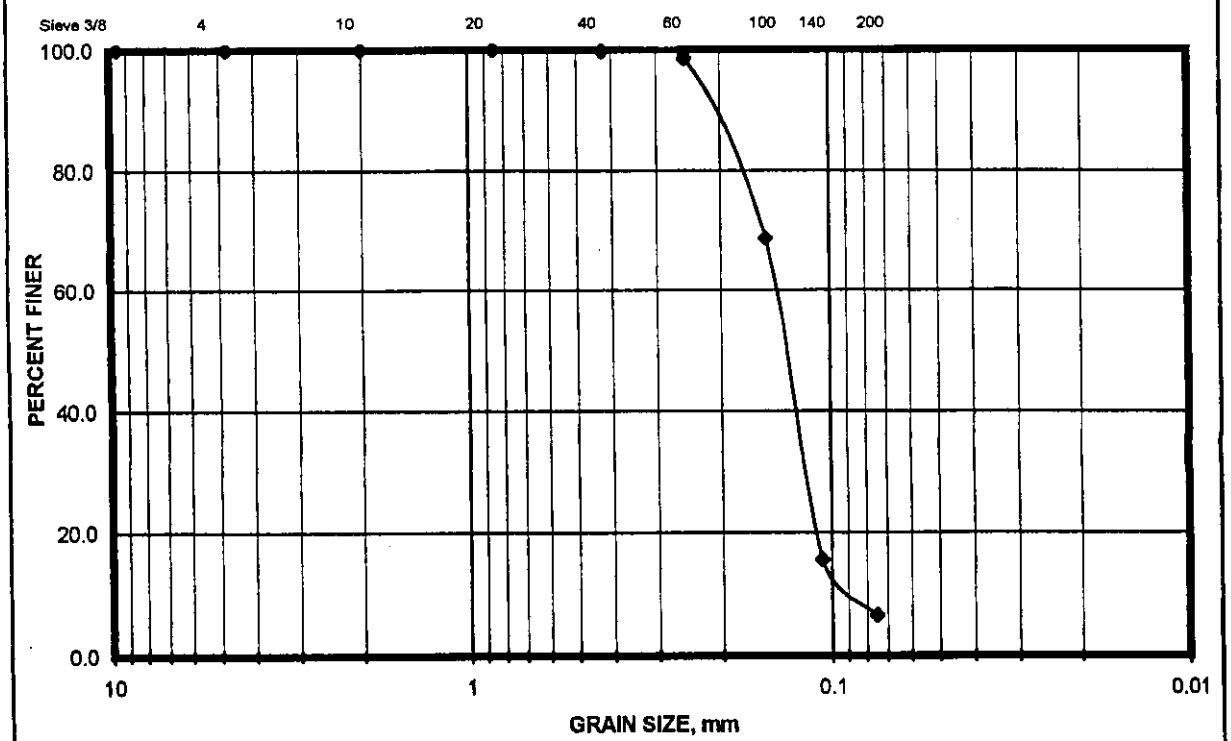
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 1/2@14'-16'

Porosity: 47.6%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	93.6	6.4

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

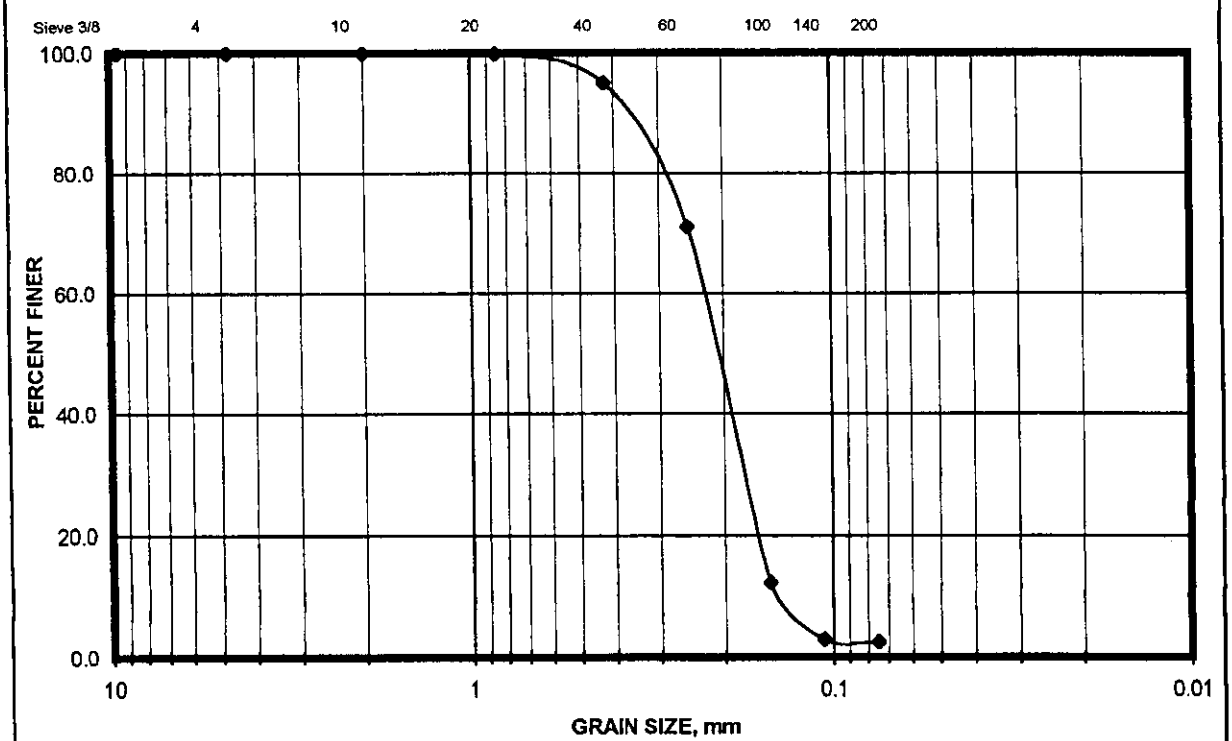
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 7/8@14'-16'

Porosity: 46.5%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	97.4	2.6

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

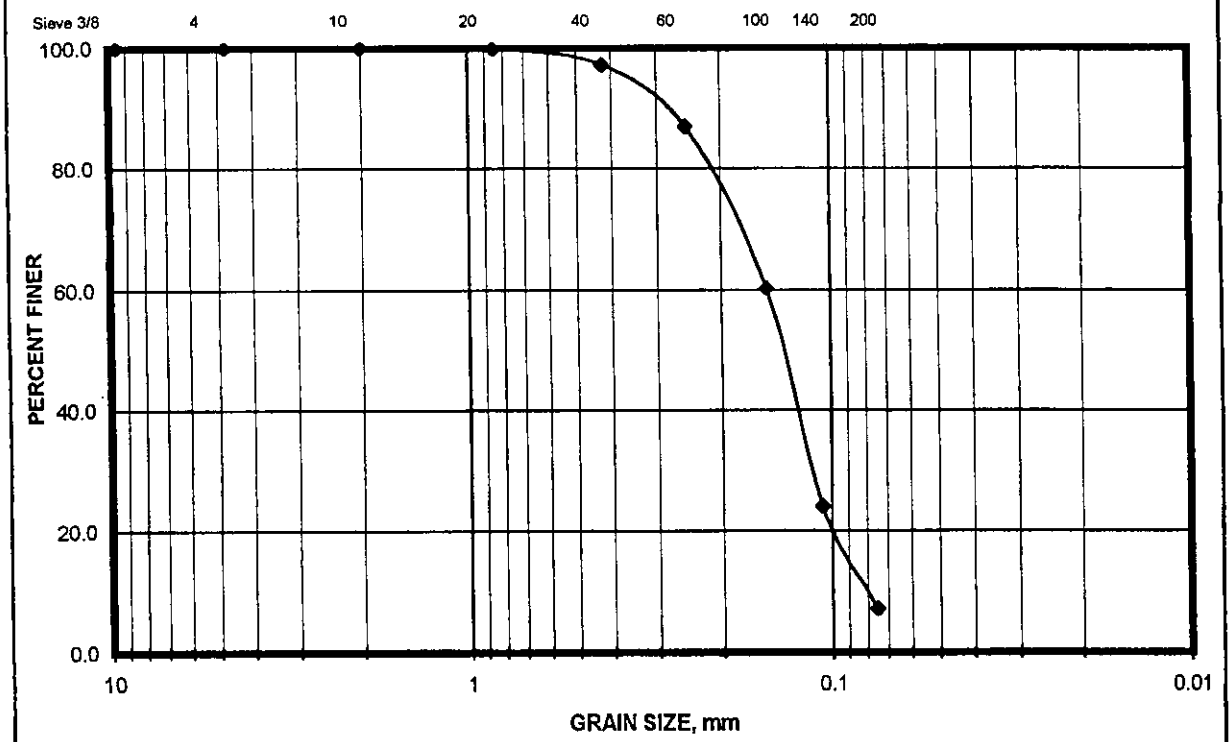
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 22/23@14'-16'

Porosity: 47.6%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	92.8	7.2

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

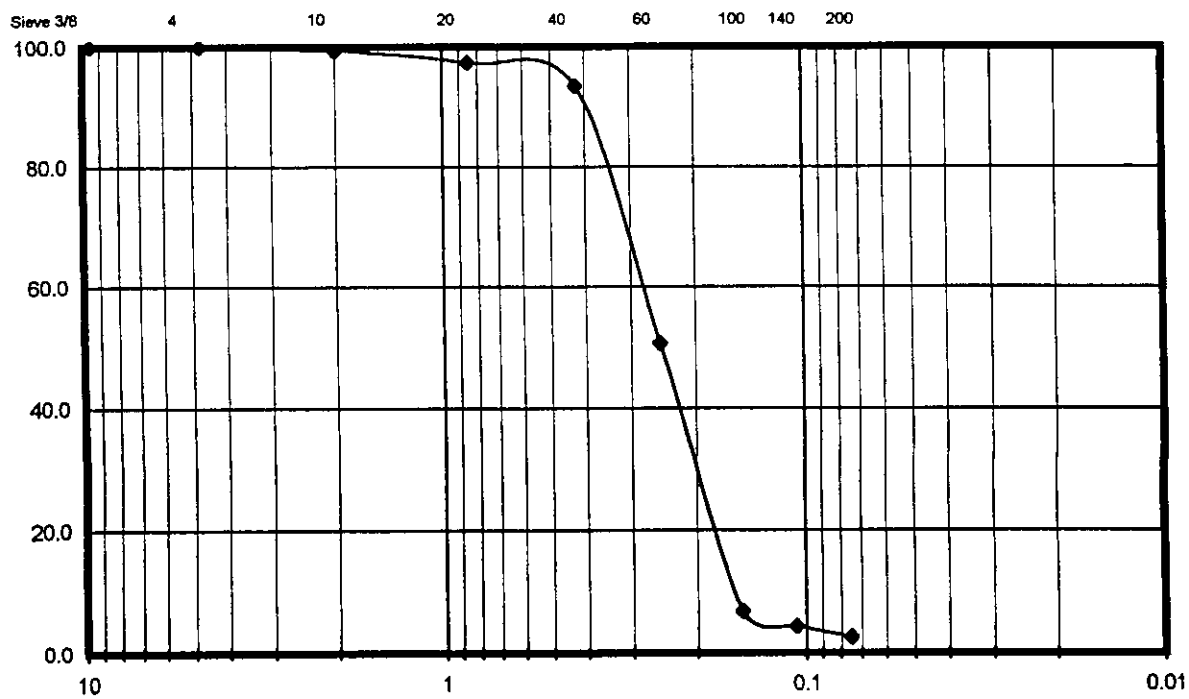
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 1/2@46'-48'

Porosity: 49.6%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	97.4	2.6

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

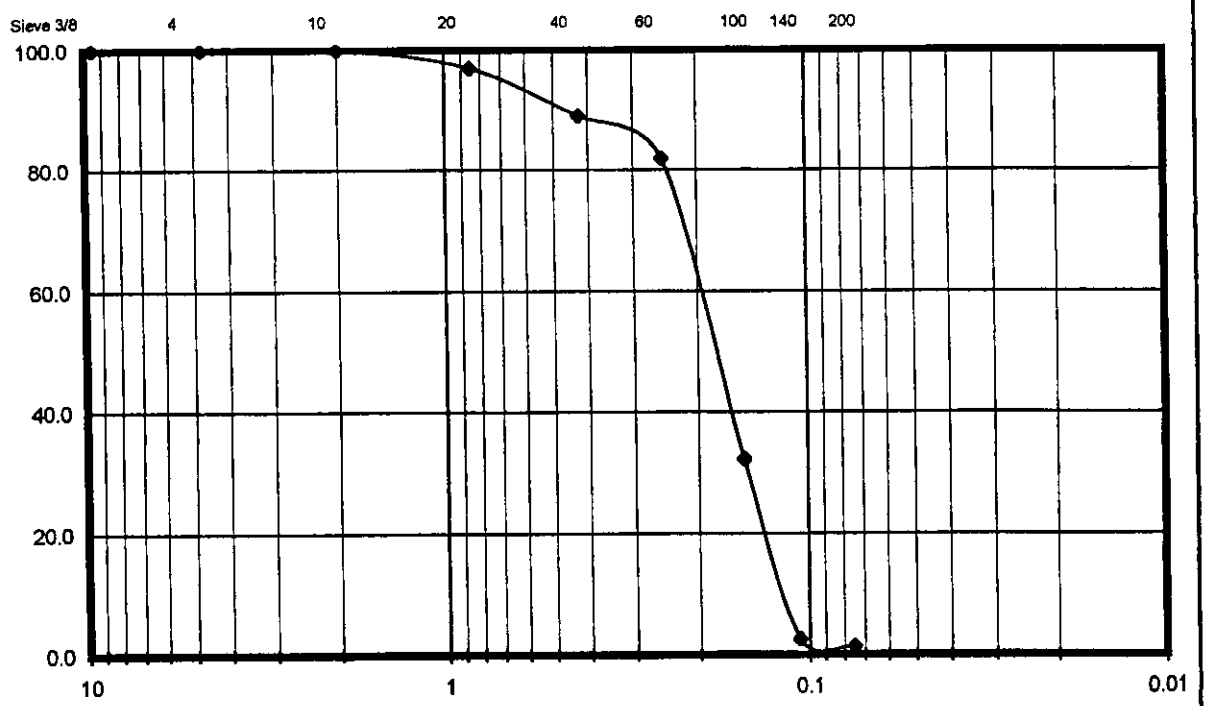
Project No. 779-10225 Date: 12/3/01

Project: Omni Oak Hammock Landfill

Sample Location: DP 7/8@46'-48'

Porosity: 44.7%

GRAIN SIZE DISTRIBUTION



% Gravel	% Sand	%-200
0.0	98.6	1.4

Attachment 3.

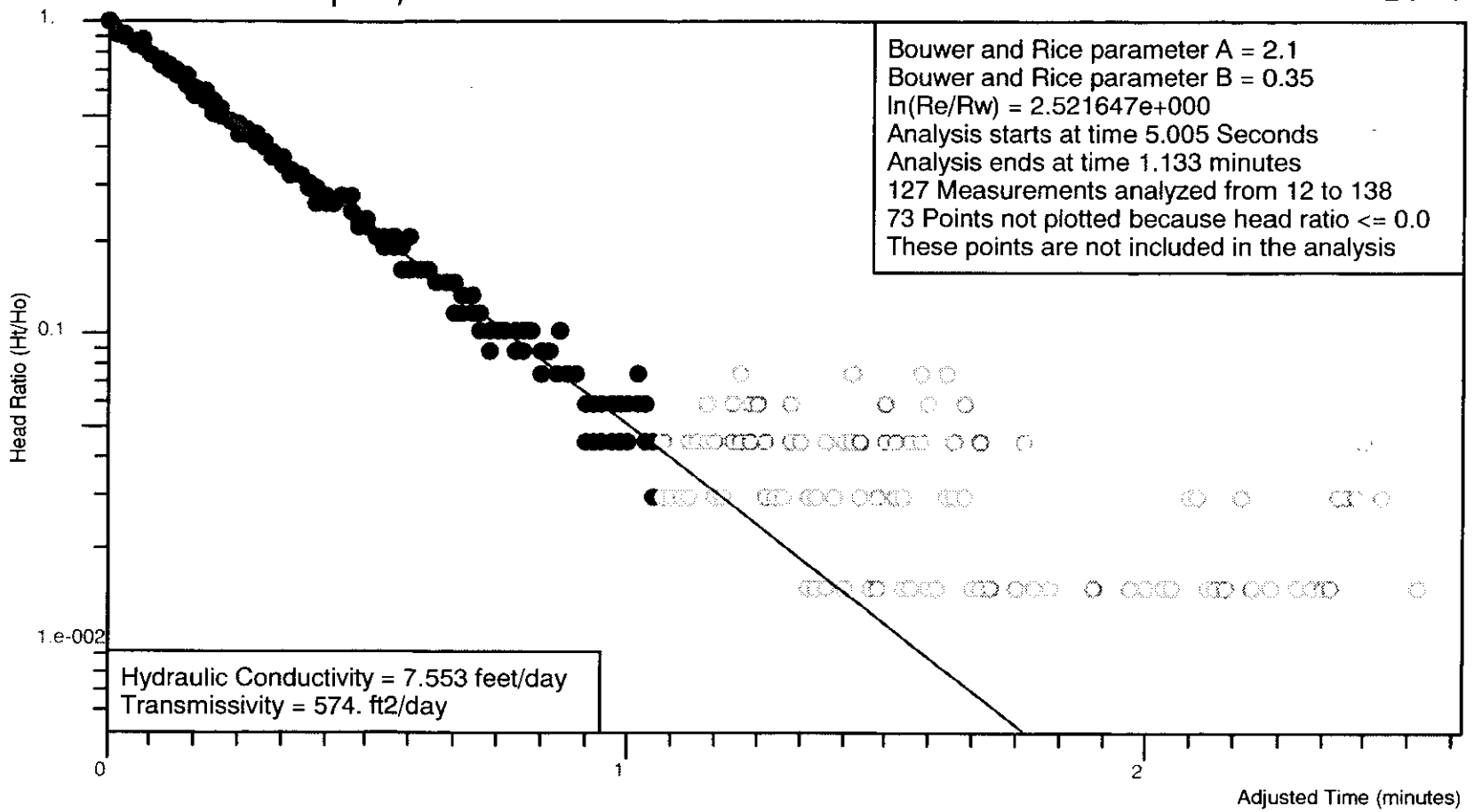
Graphical Plots of Slug Test Data
(Bouwer and Rice)

Slugtest - Slugin - DP-1 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-1



Ho is 0.68 feet at 5.005 Seconds

Project Number: 48OH01 for OMNI Waste

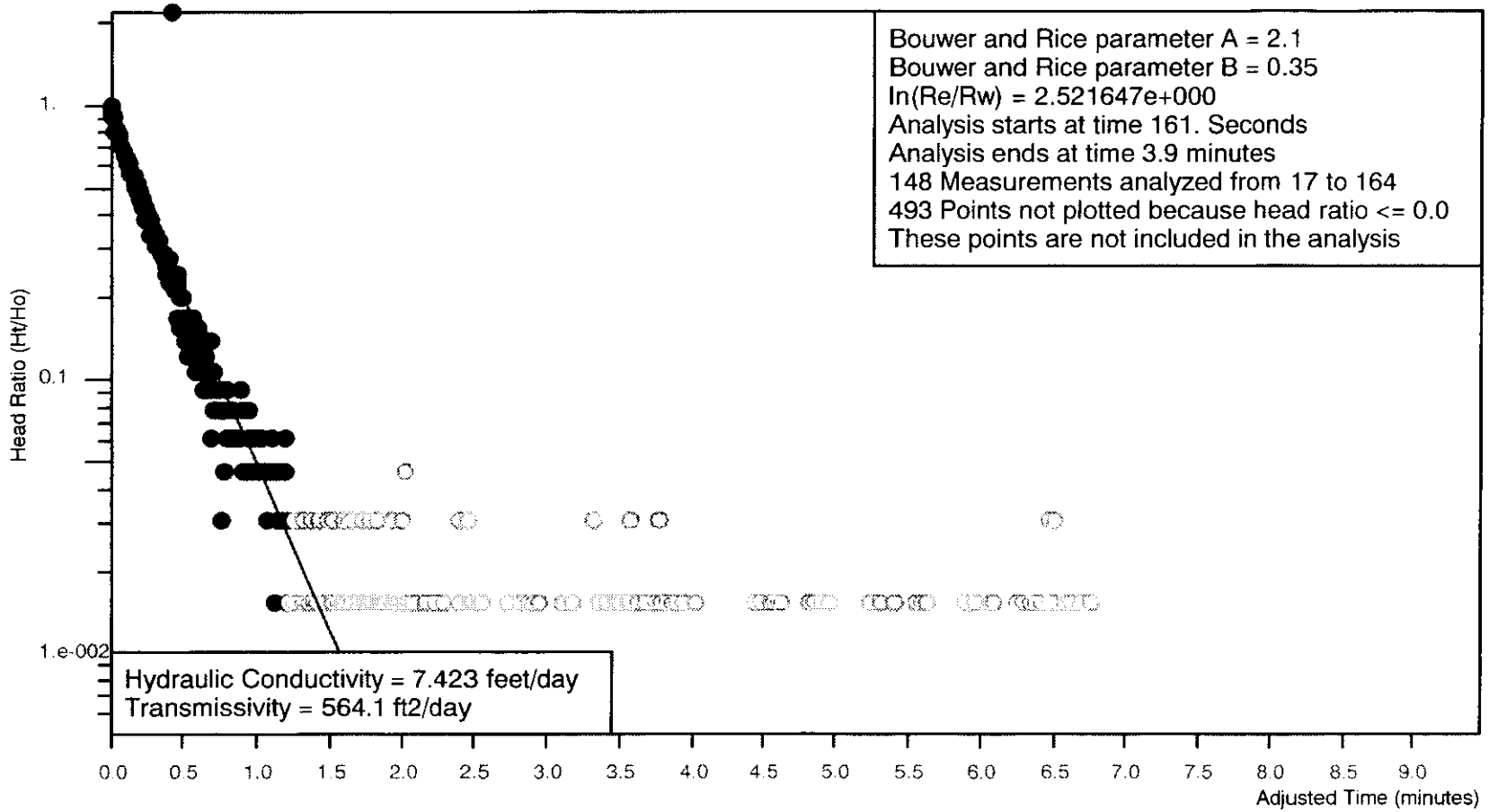
Analysis by Starpoint Software

Slugtest - Slugout - DP-1 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-1



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

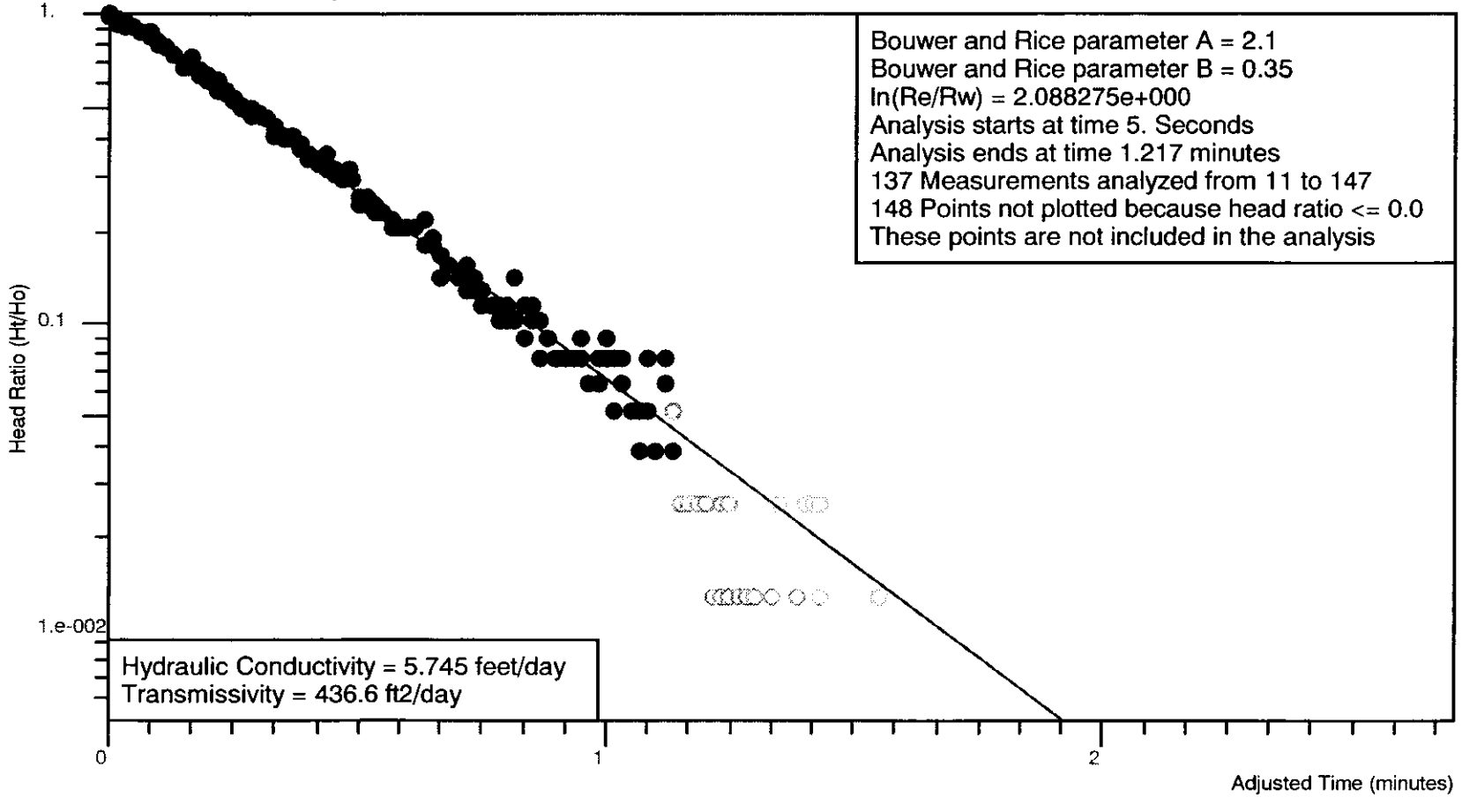
Ho is 0.65 feet at 161. Seconds

Slugtest - Slugin - DP-2 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-2



Ho is 0.78 feet at 5. Seconds

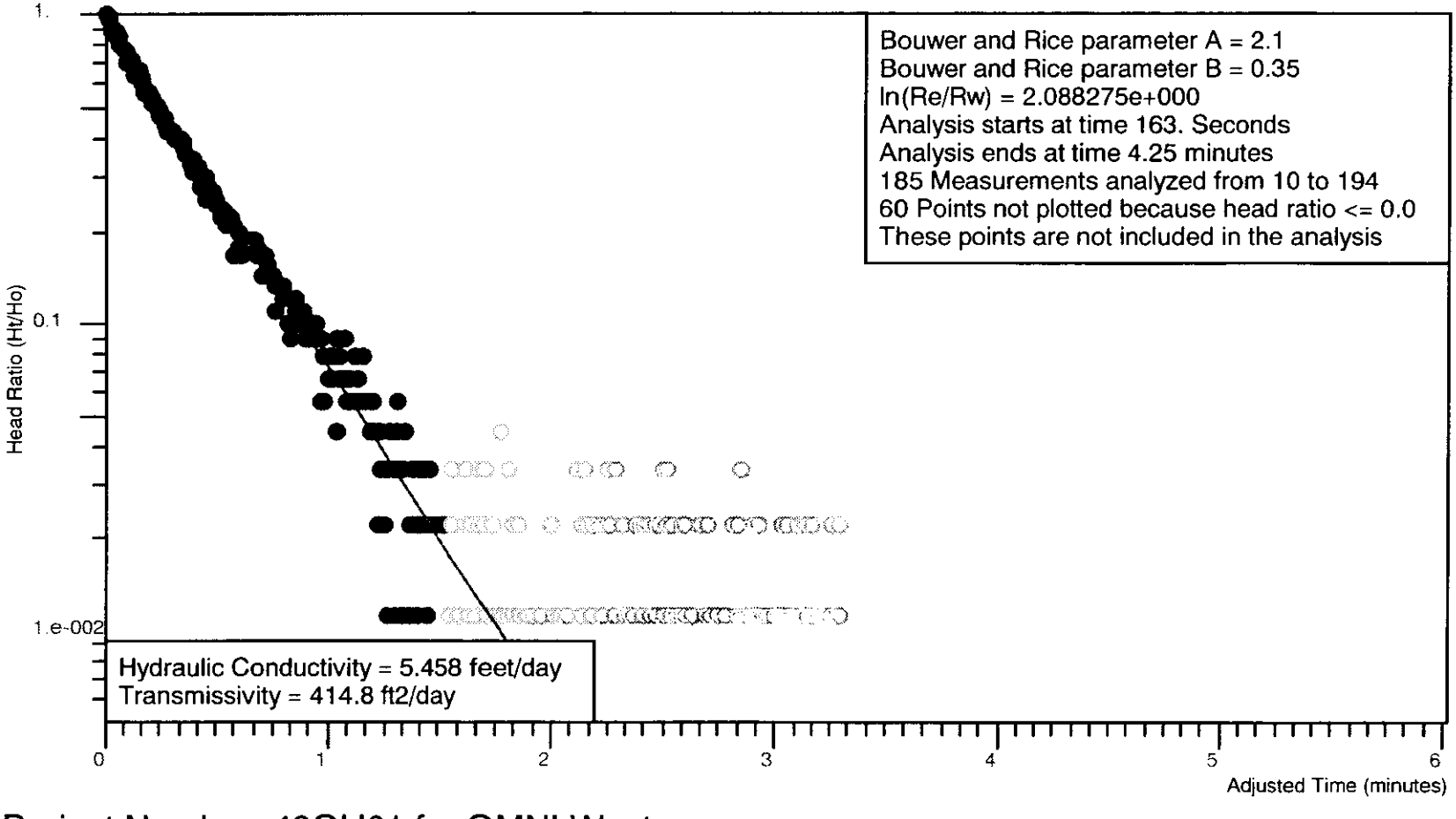
Project Number: 48OH01 for OMNI Waste
Analysis by Starpoint Software

Slugtest - Slugout - DP-2 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-2



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

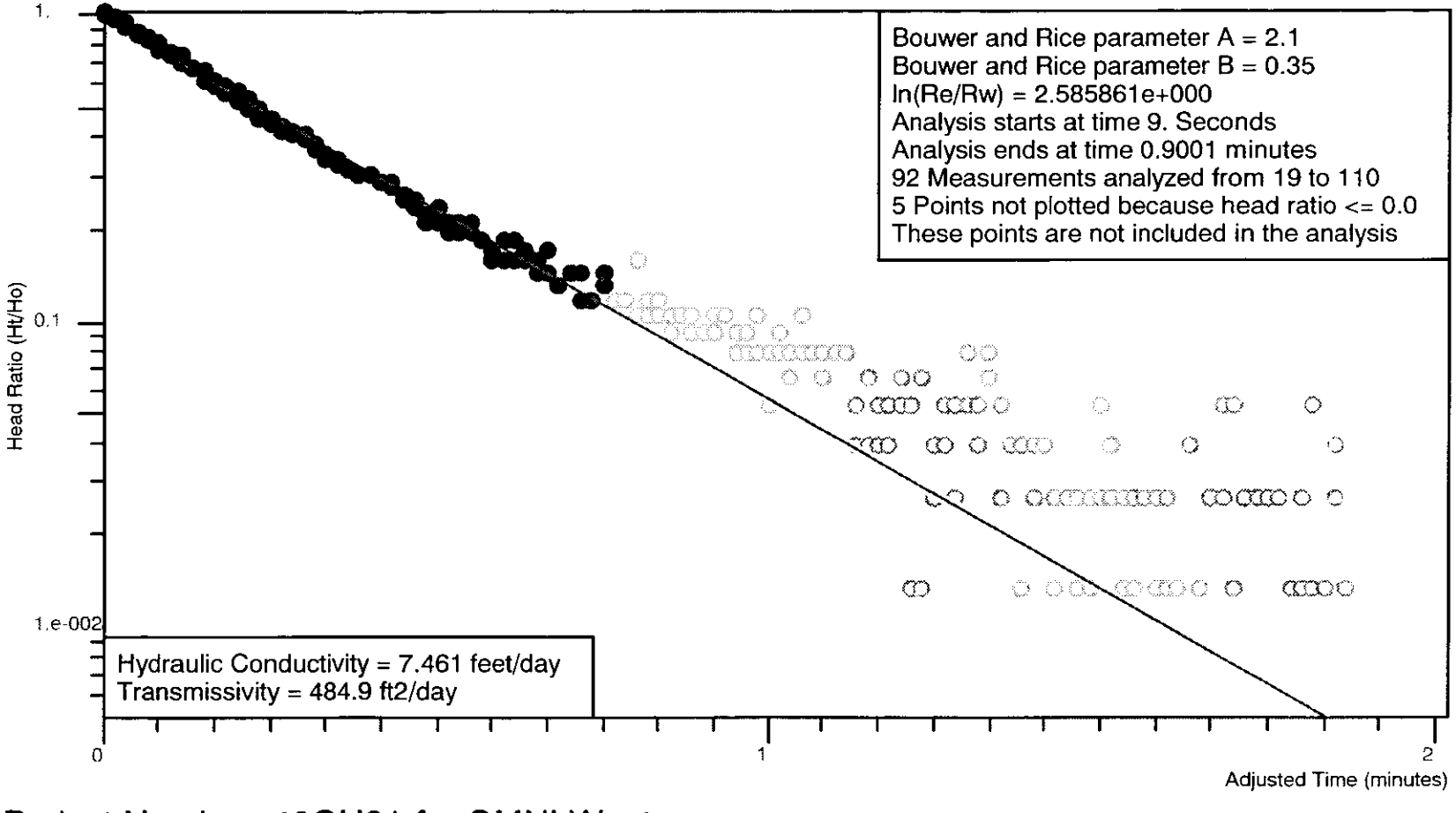
Ho is 0.9 feet at 163. Seconds

Slugtest - Slugin - DP-9 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-9



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

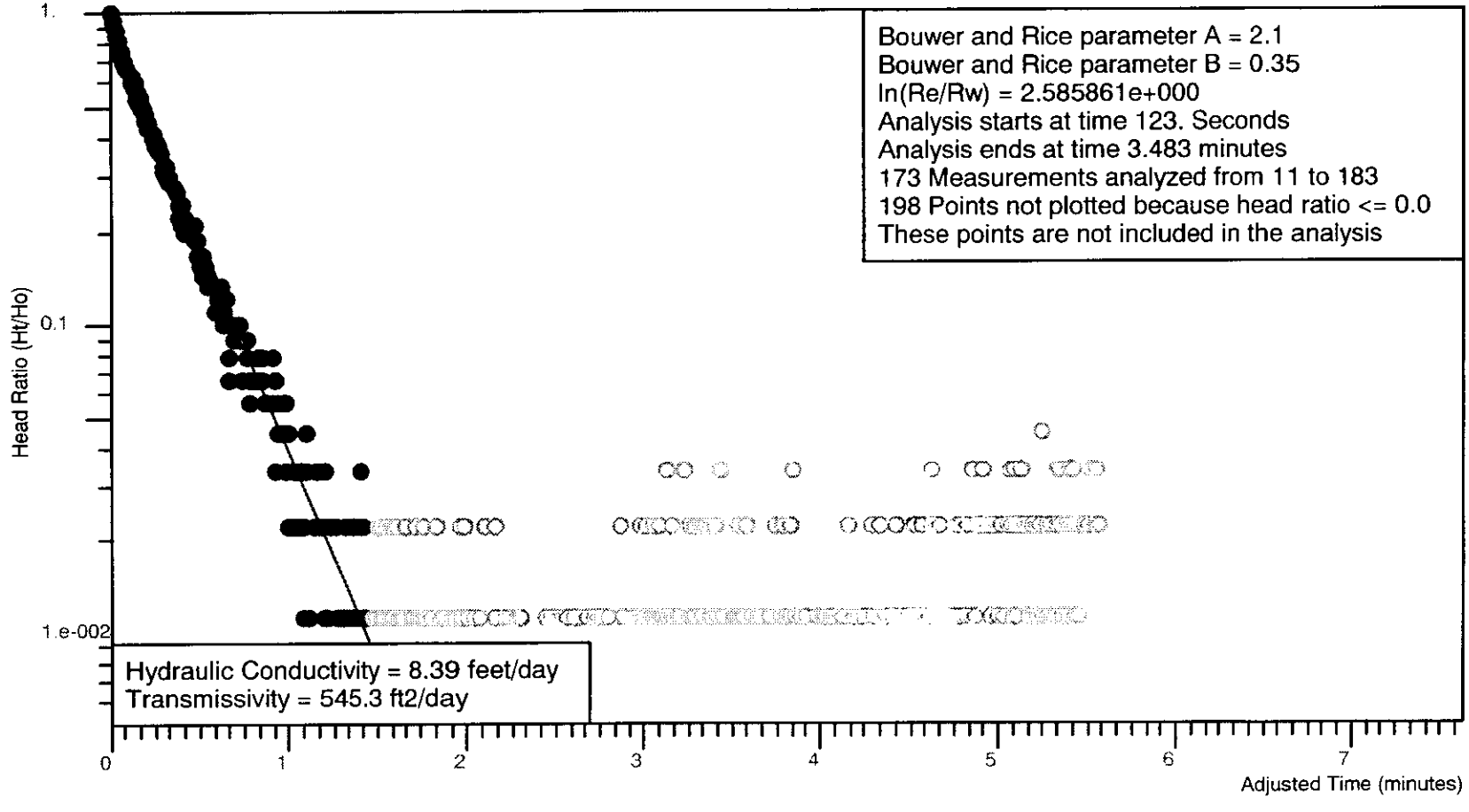
Ho is 0.76 feet at 9. Seconds

Slugtest - Slugout - DP-9 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-9



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

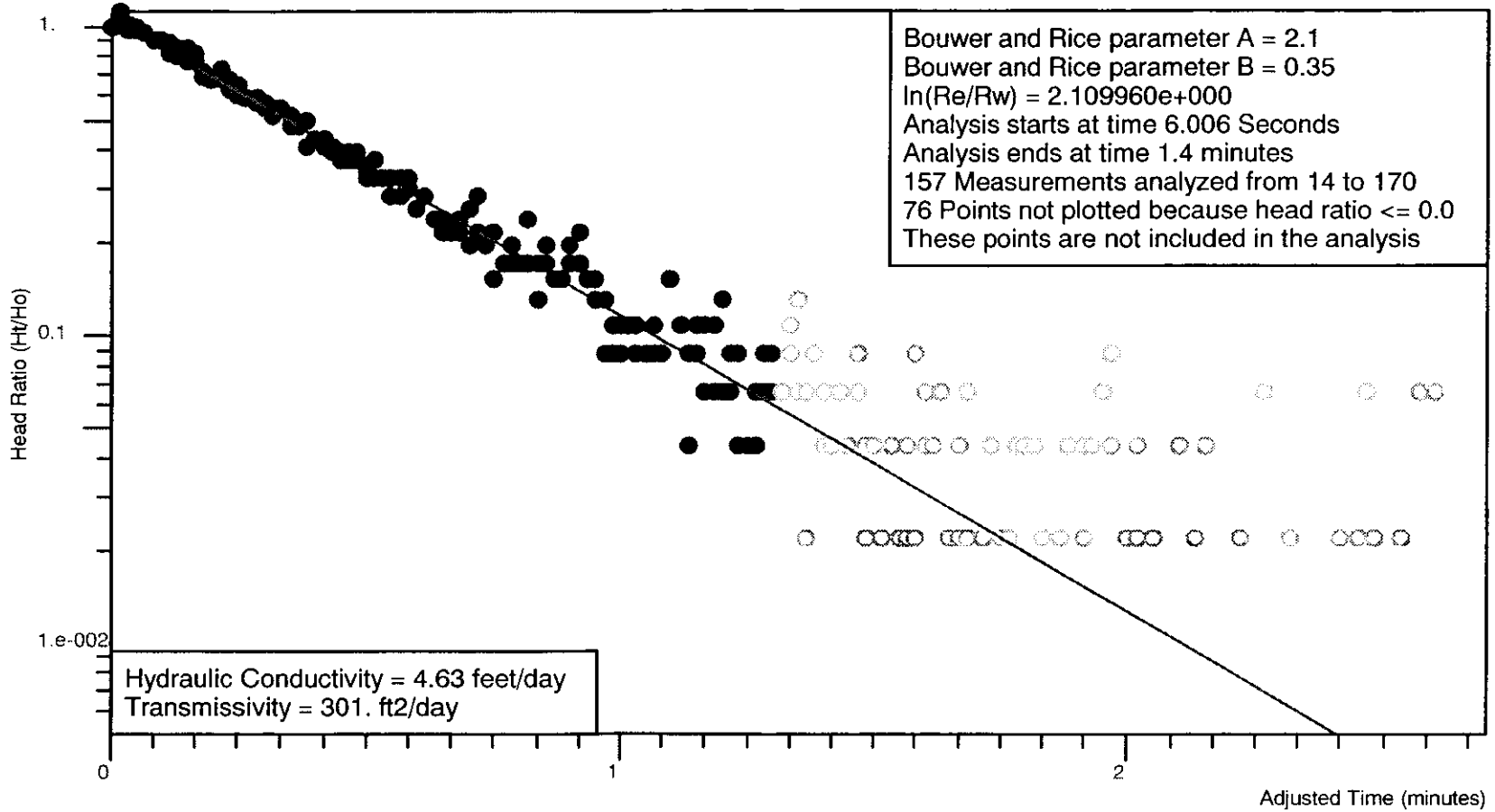
Ho is 0.9 feet at 123. Seconds

Slugtest - Slugin - DP-10 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-10



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

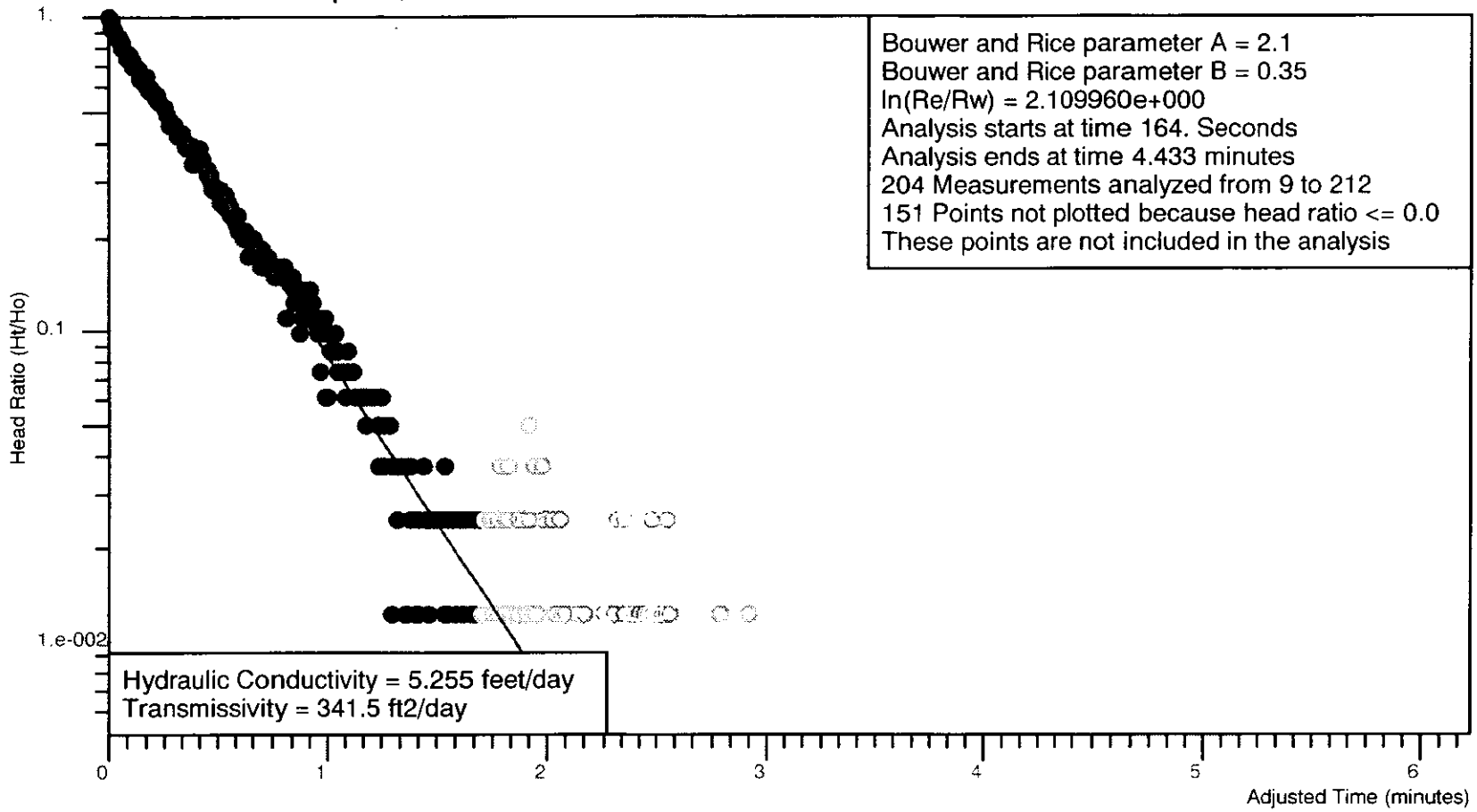
Ho is 0.46 feet at 6.006 Seconds

Slugtest - Slugout - DP-10 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-10



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

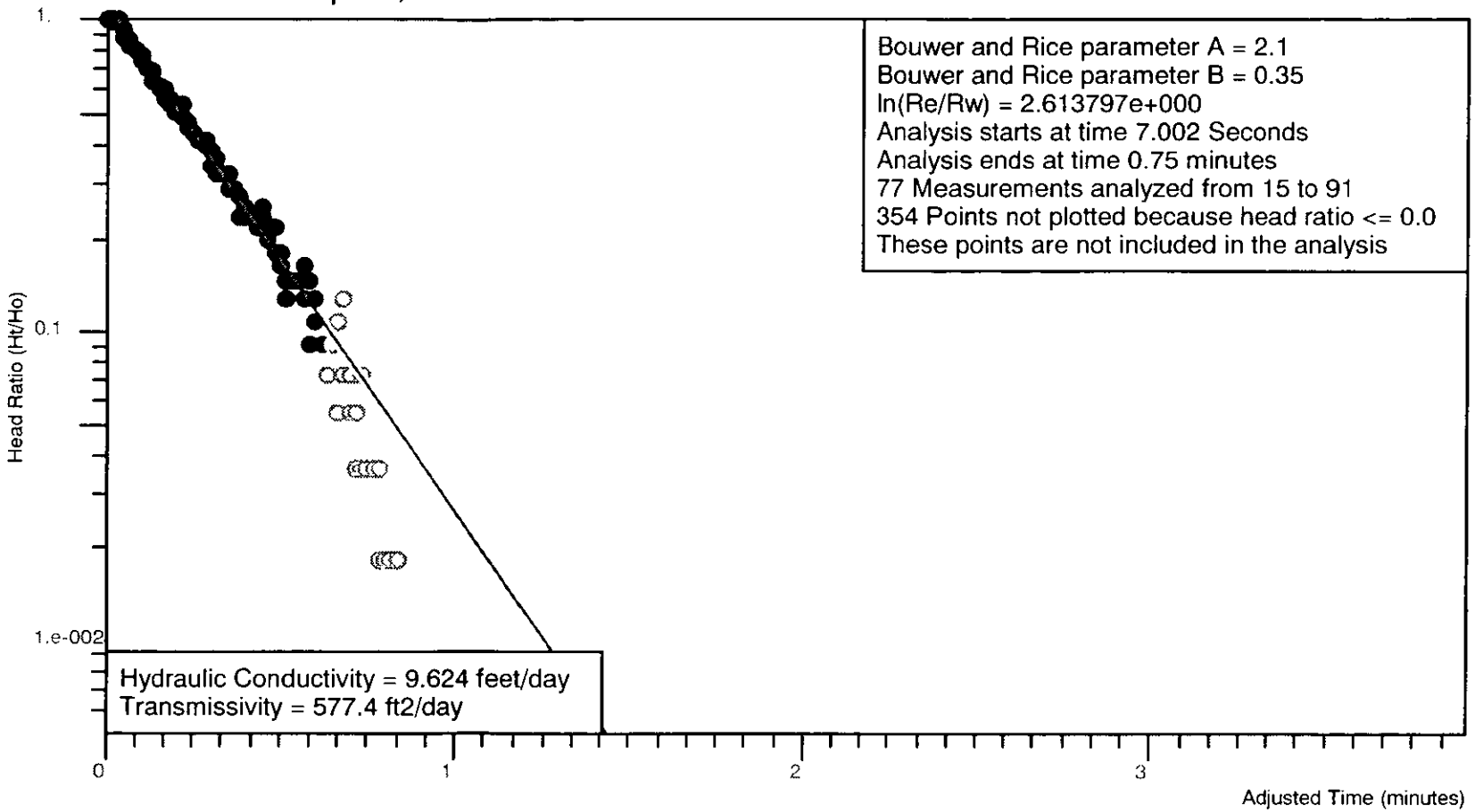
Ho is 0.81 feet at 164. Seconds

Slugtest - Slugin - DP-11 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-11



Project Number: 48OH01 for OMNI Waste
Analysis by Starpoint Software

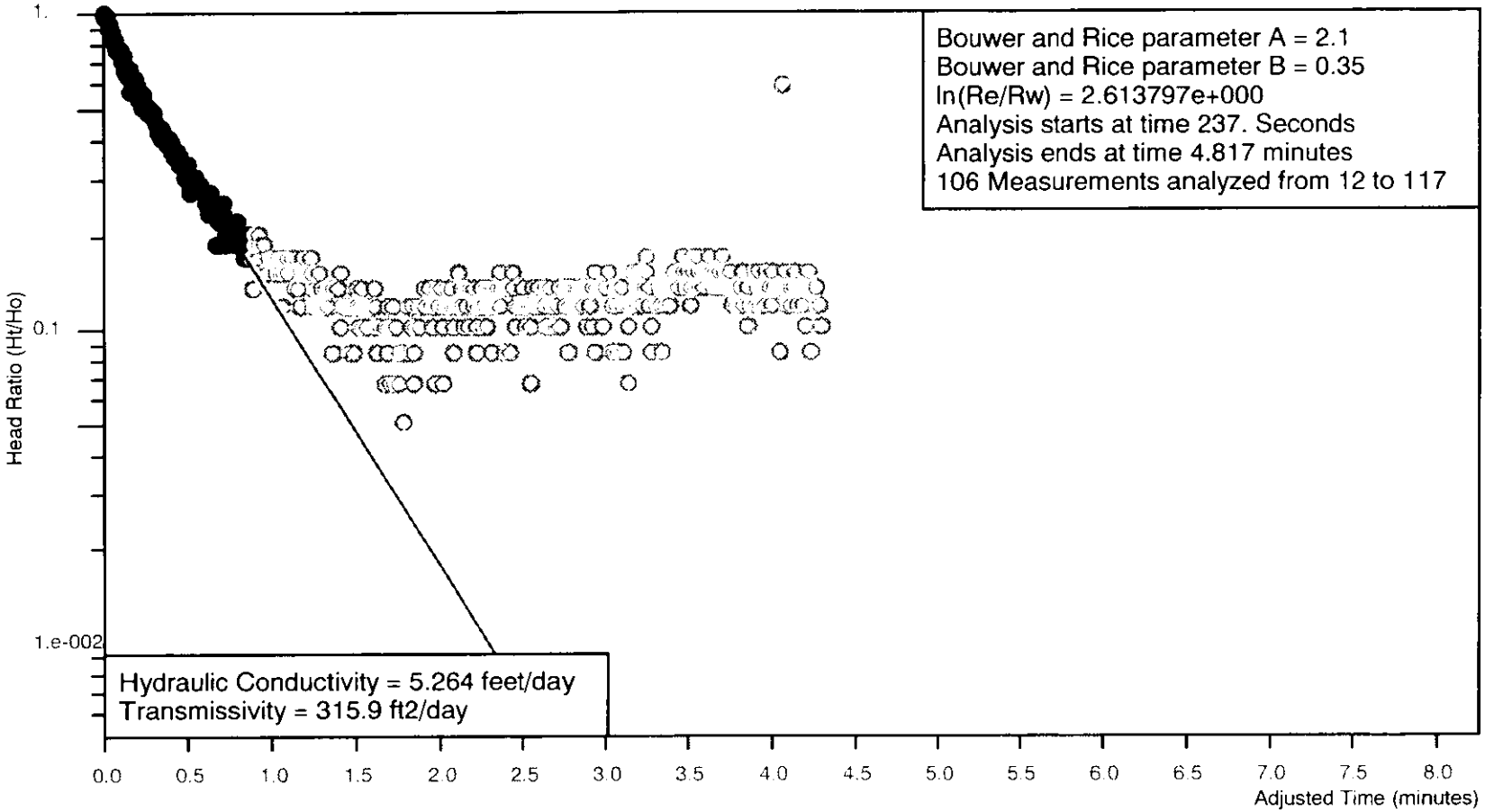
Ho is 0.55 feet at 7.002 Seconds

Slugtest - Slugout - DP-11 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-11



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

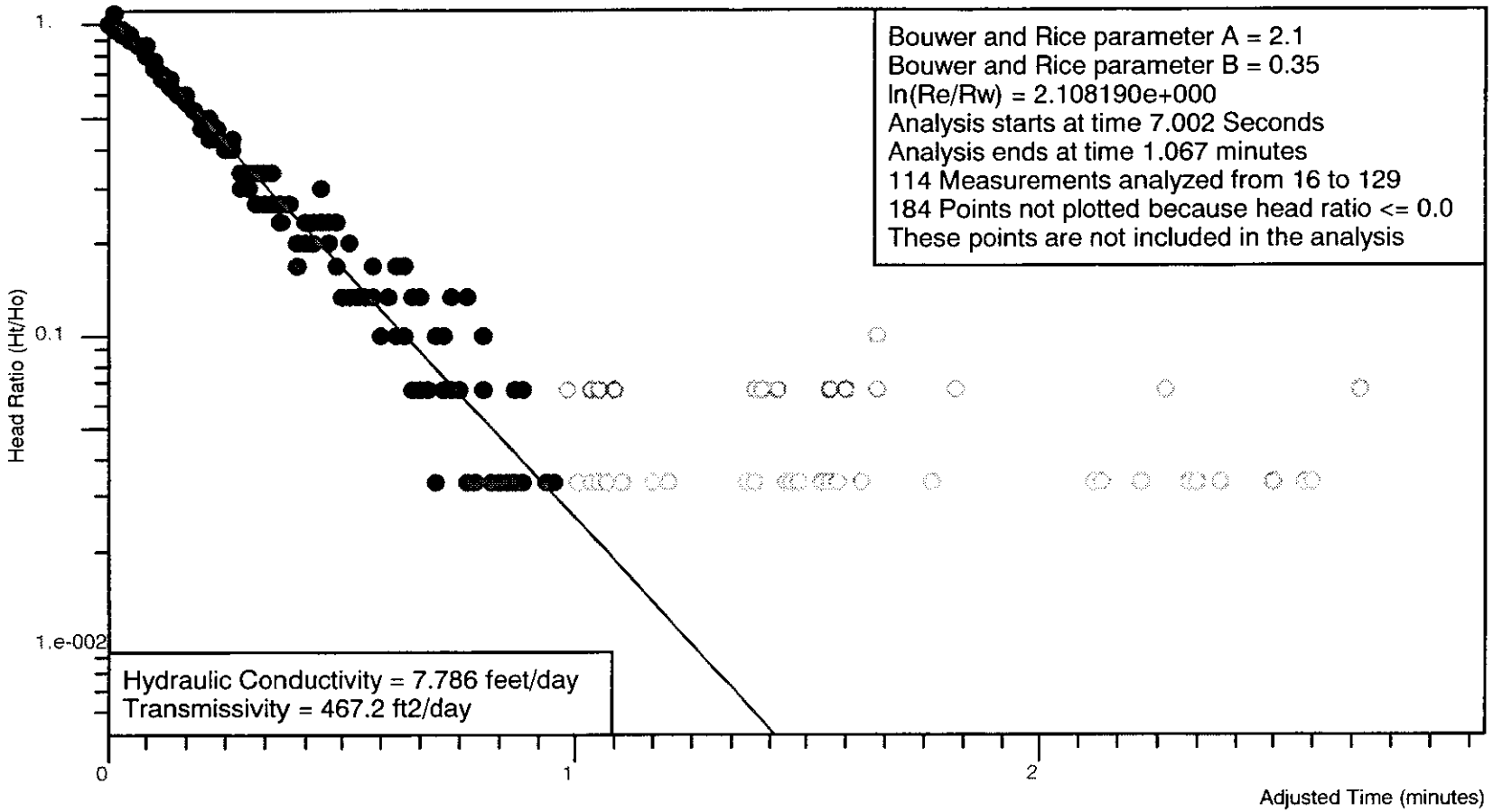
Ho is 0.59 feet at 237. Seconds

Slugtest - Slugin - DP-12 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-12



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

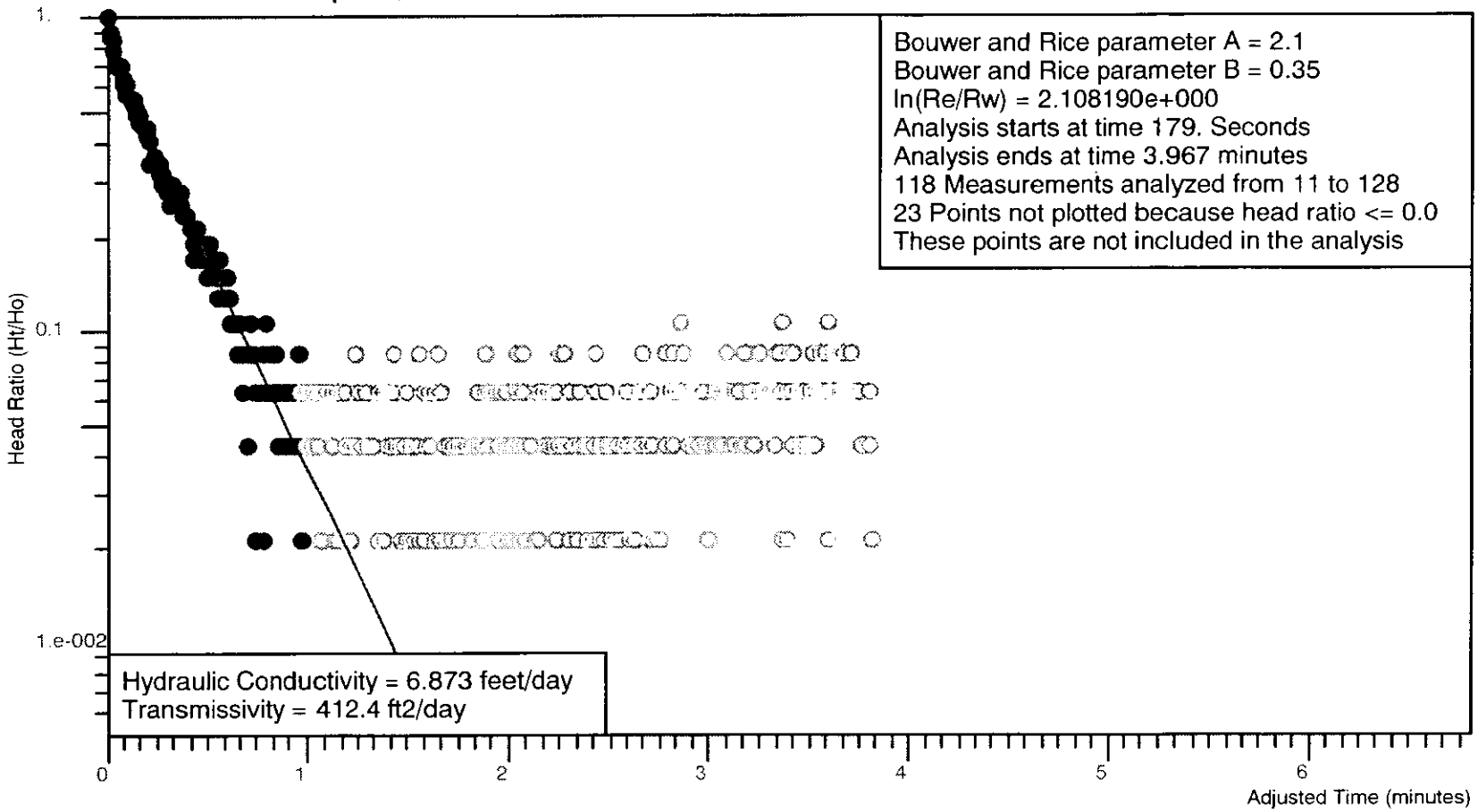
Ho is 0.3 feet at 7.002 Seconds

Slugtest - Slugout - DP-12 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-12



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

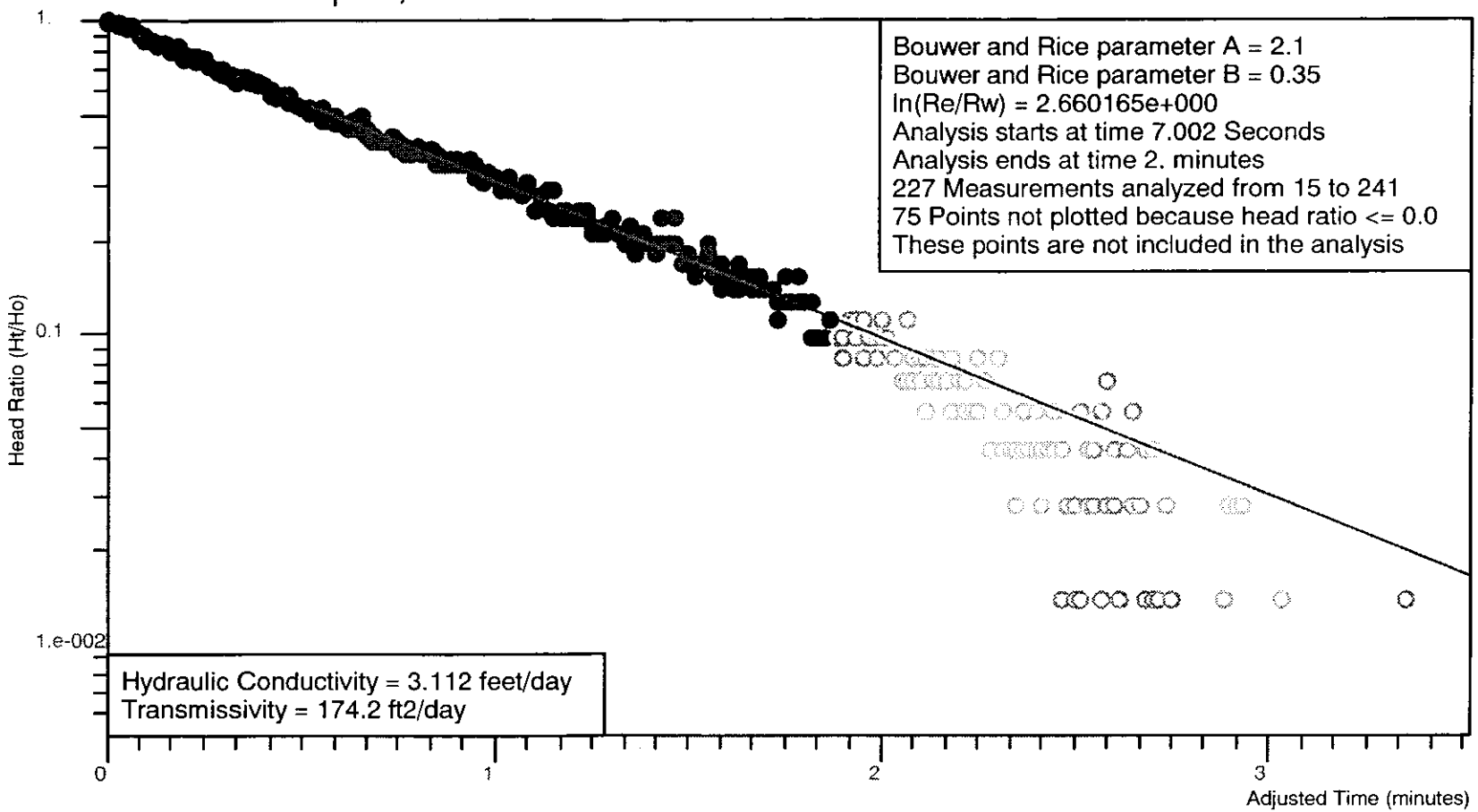
Ho is 0.47 feet at 179. Seconds

Slugtest - Slugin - DP-18 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-18



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

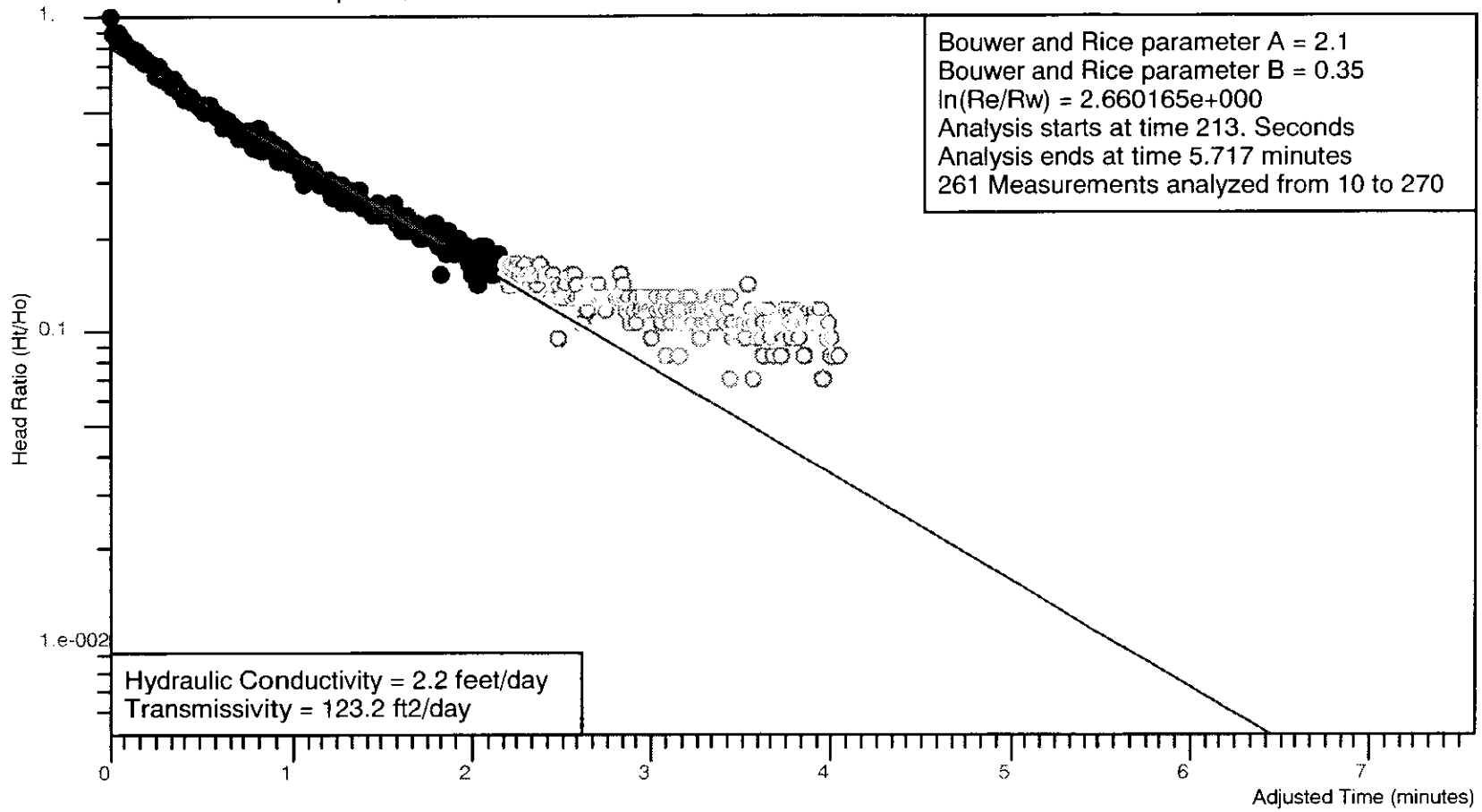
Ho is 0.72 feet at 7.002 Seconds

Slugtest - Slugout - DP-18 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-18



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

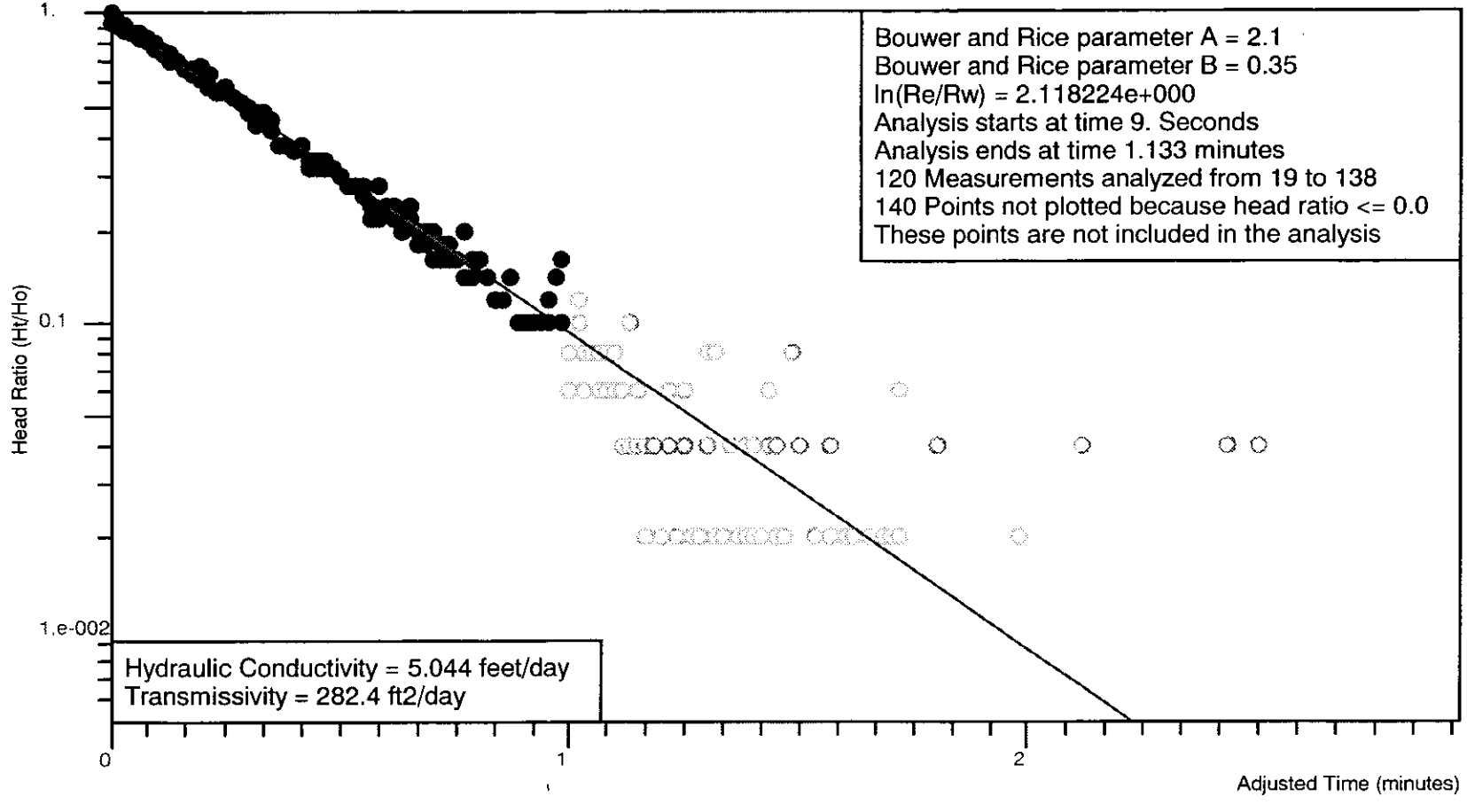
Ho is 0.85 feet at 213. Seconds

Slugtest - Slugin - DP-19 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-19



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

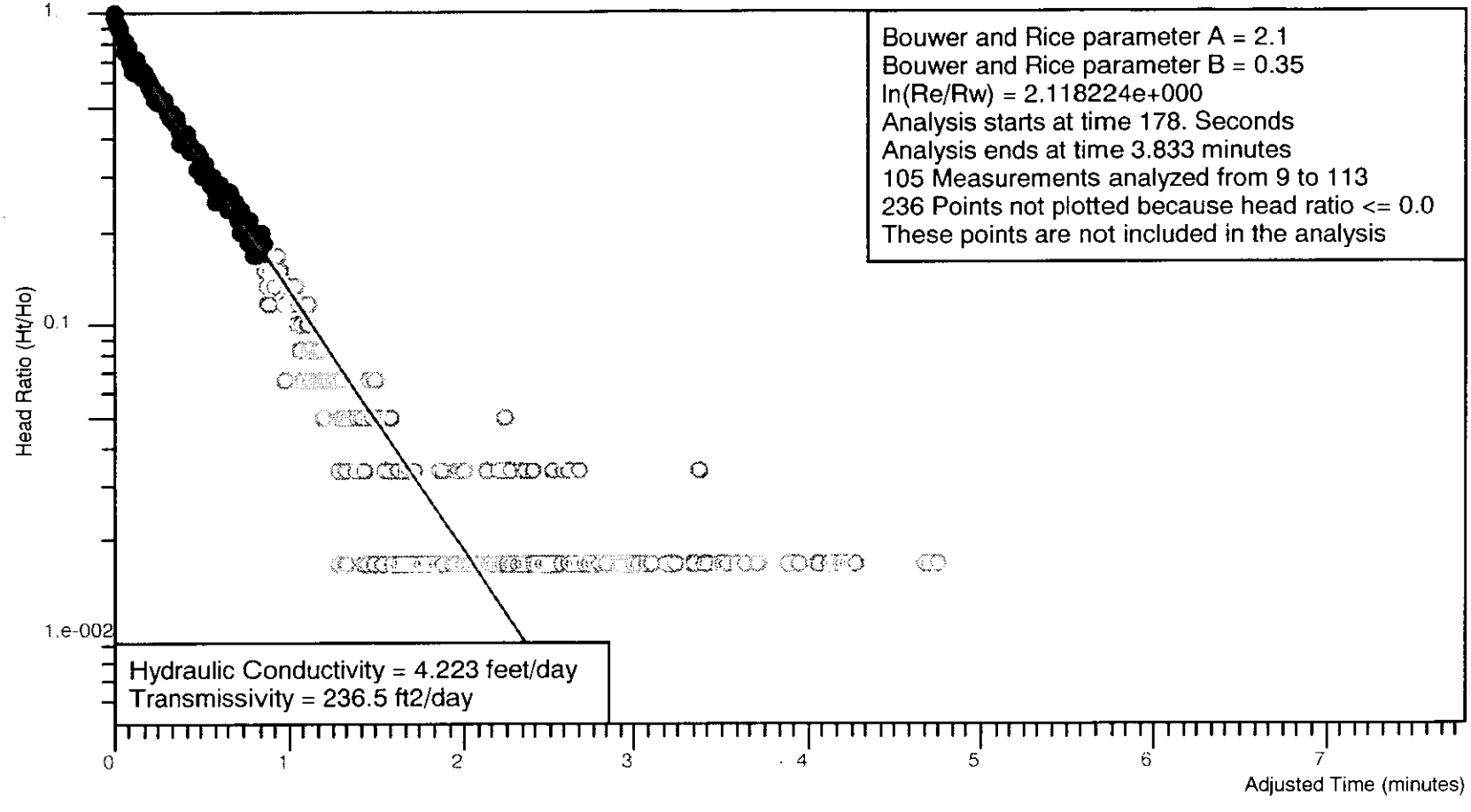
Ho is 0.5 feet at 9. Seconds

Slugtest - Slugout - DP-19 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-19



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

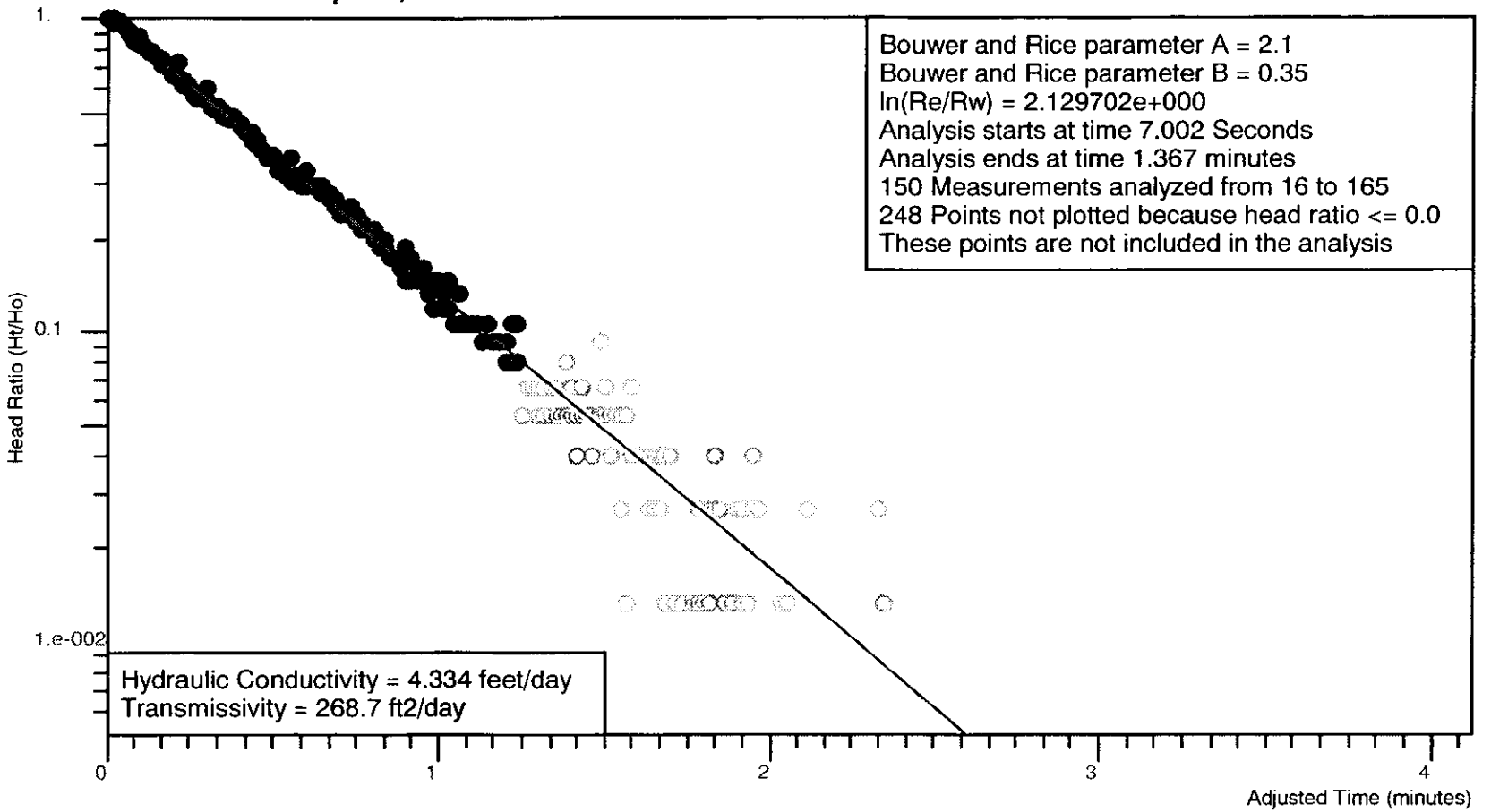
Ho is 0.6 feet at 178. Seconds

Slugtest - Slugin - DP-22 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-22



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

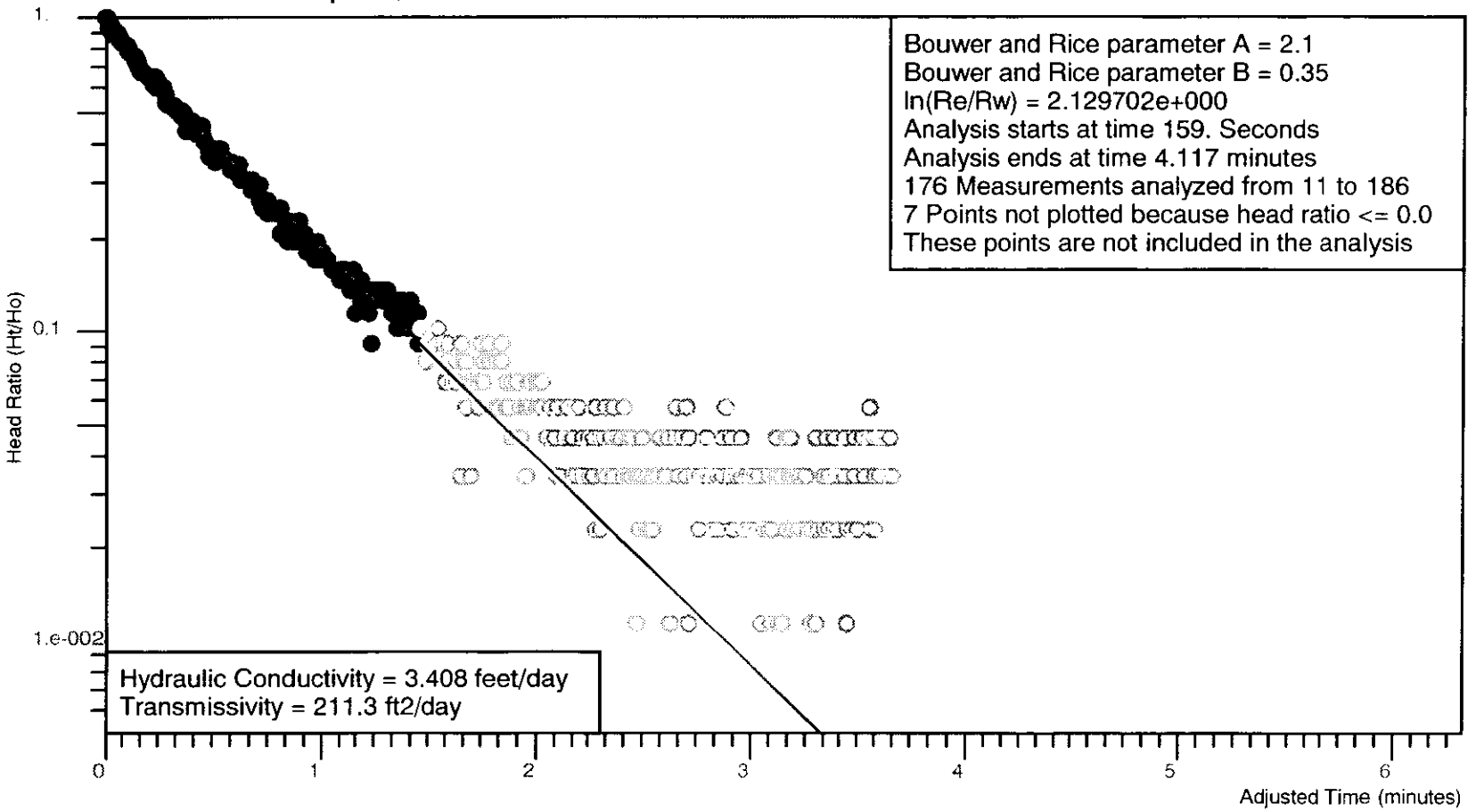
Ho is 0.75 feet at 7.002 Seconds

Slugtest - Slugout - DP-22 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-22



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

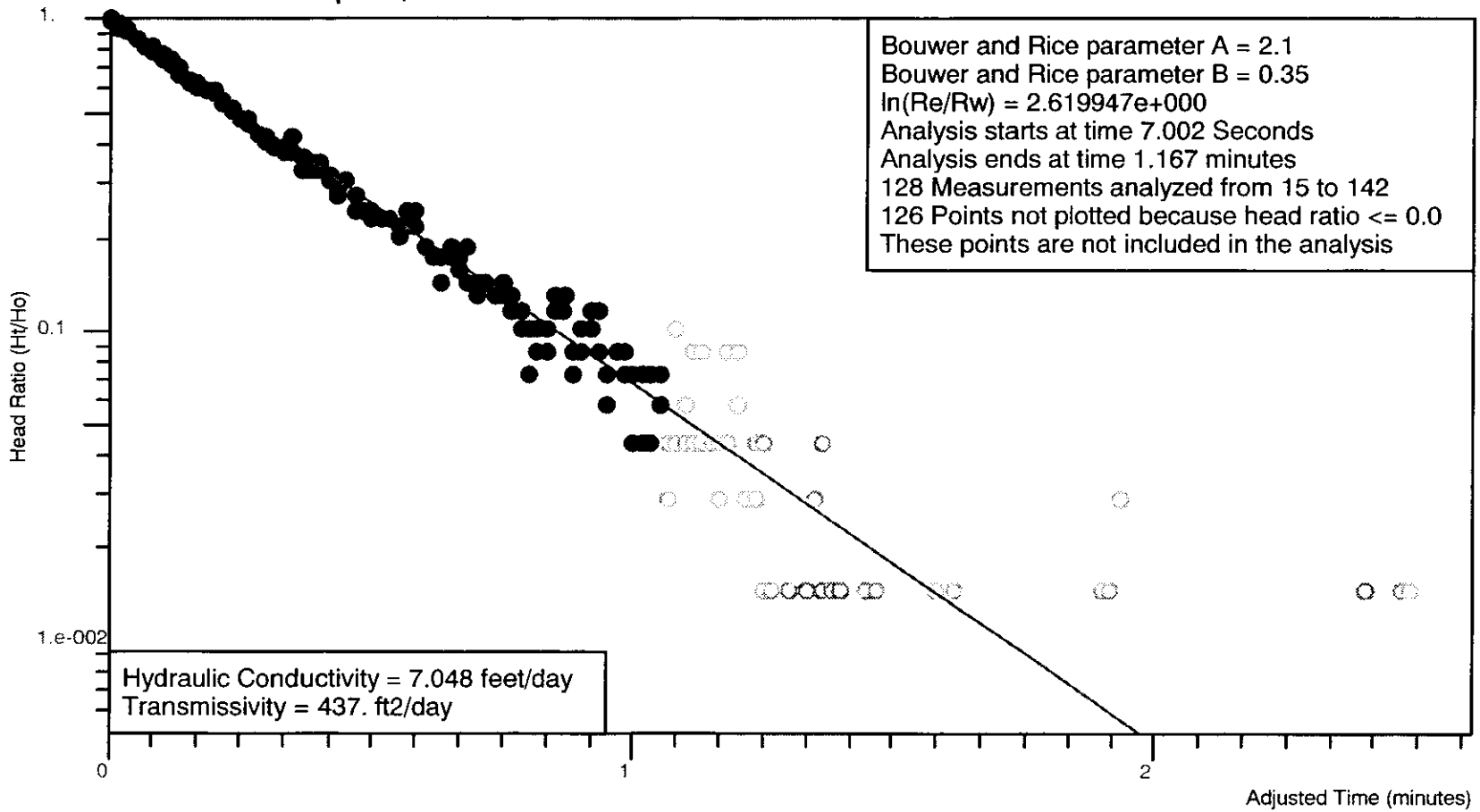
Ho is 0.88 feet at 159. Seconds

Slugtest - Slugin - DP-23 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-23



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

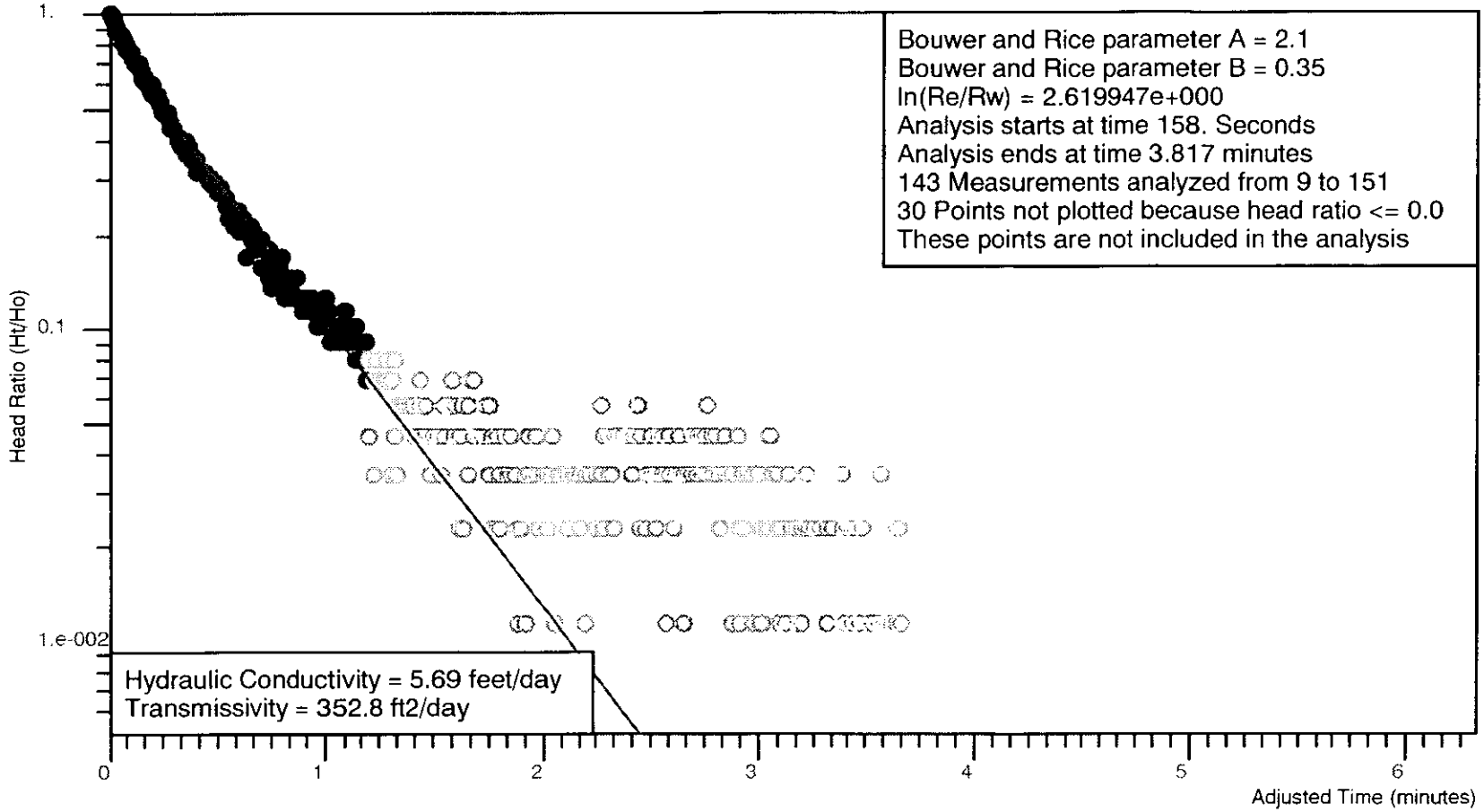
Ho is 0.69 feet at 7.002 Seconds

Slugtest - Slugout - DP-23 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

DP-23



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

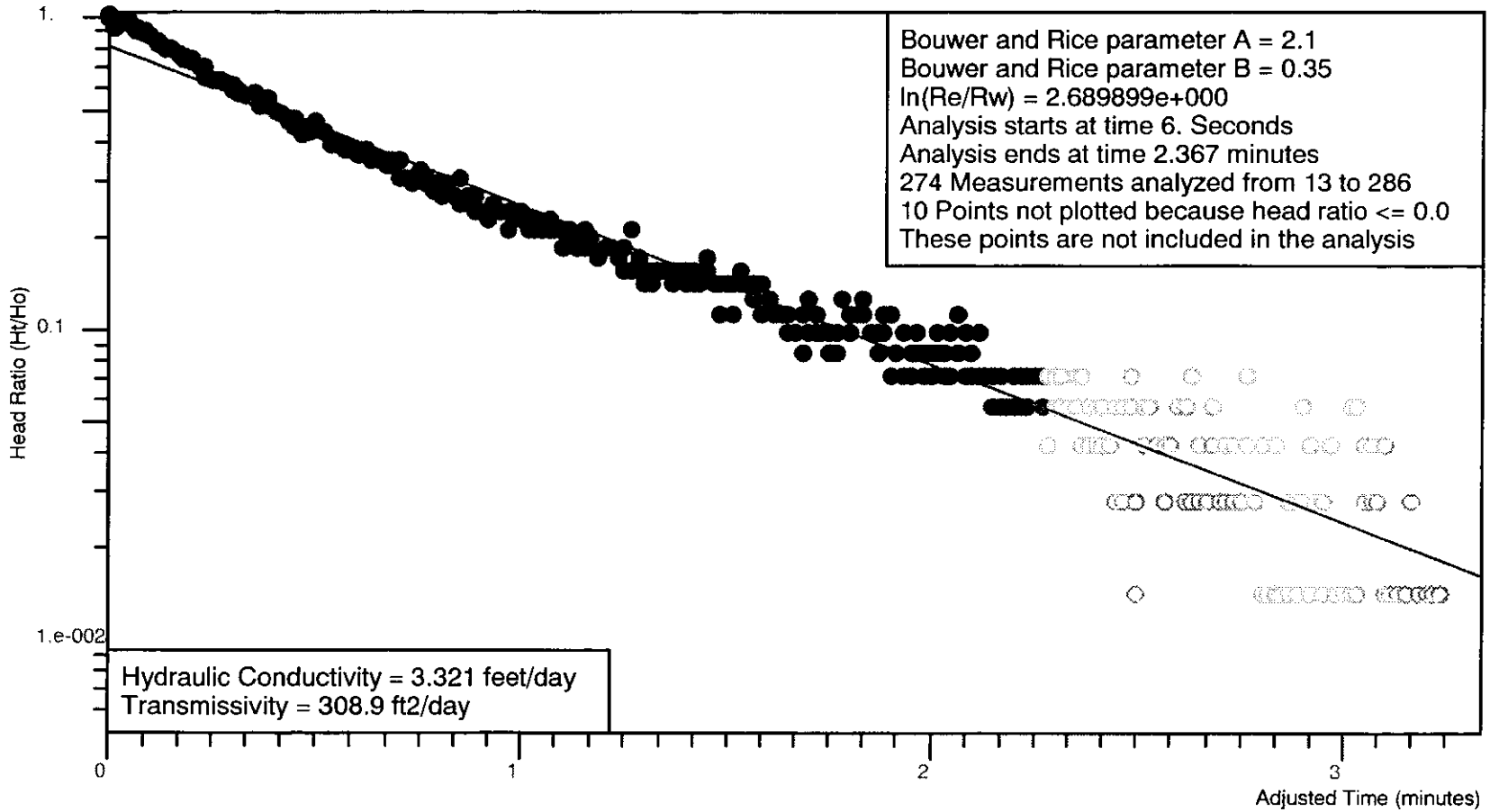
Ho is 0.88 feet at 158. Seconds

Slugtest - Slugin - SZ-1 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

SZ-1



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

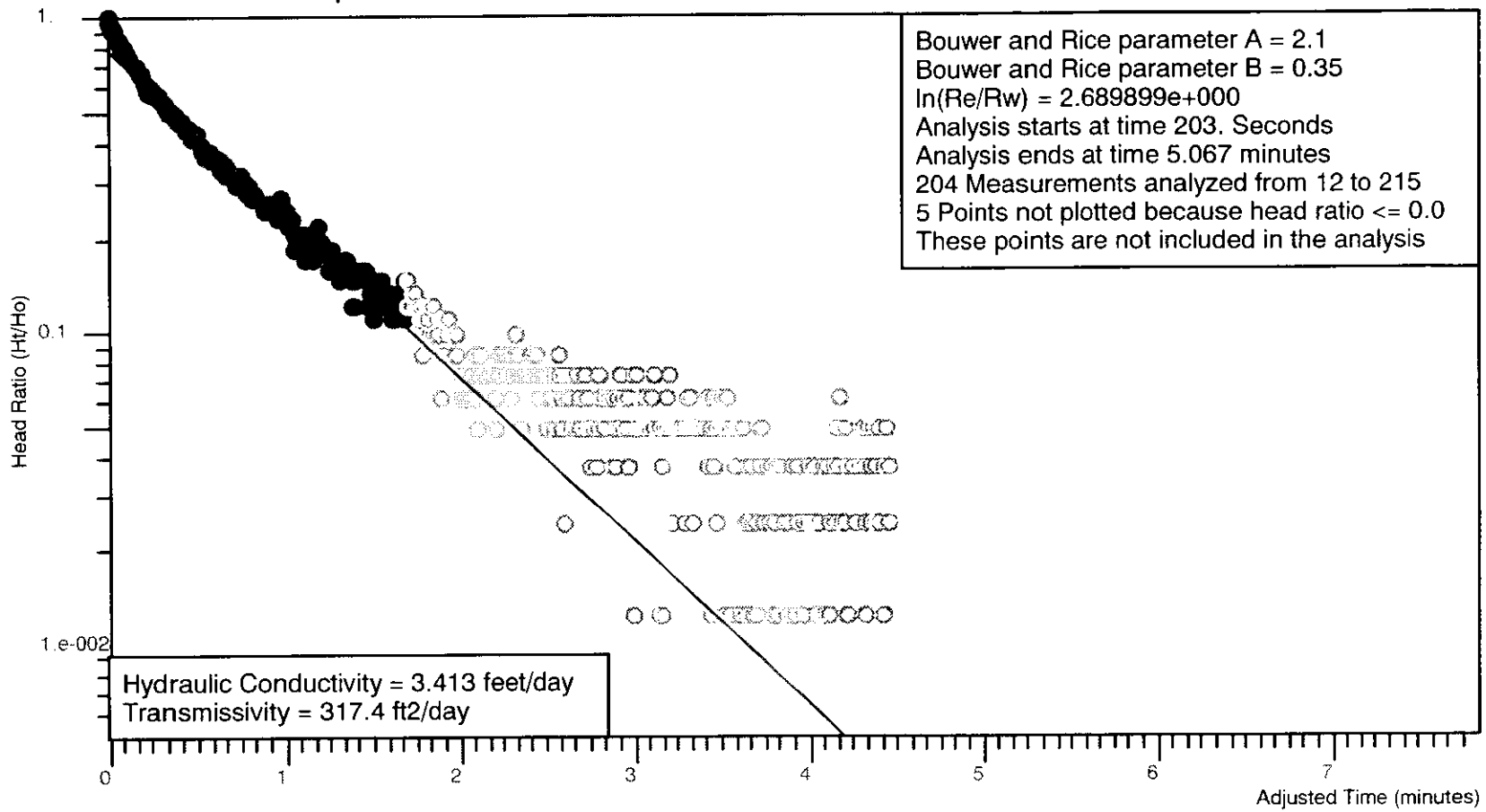
Ho is 0.71 feet at 6. Seconds

Slugtest - Slugout - SZ-1 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

SZ-1



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

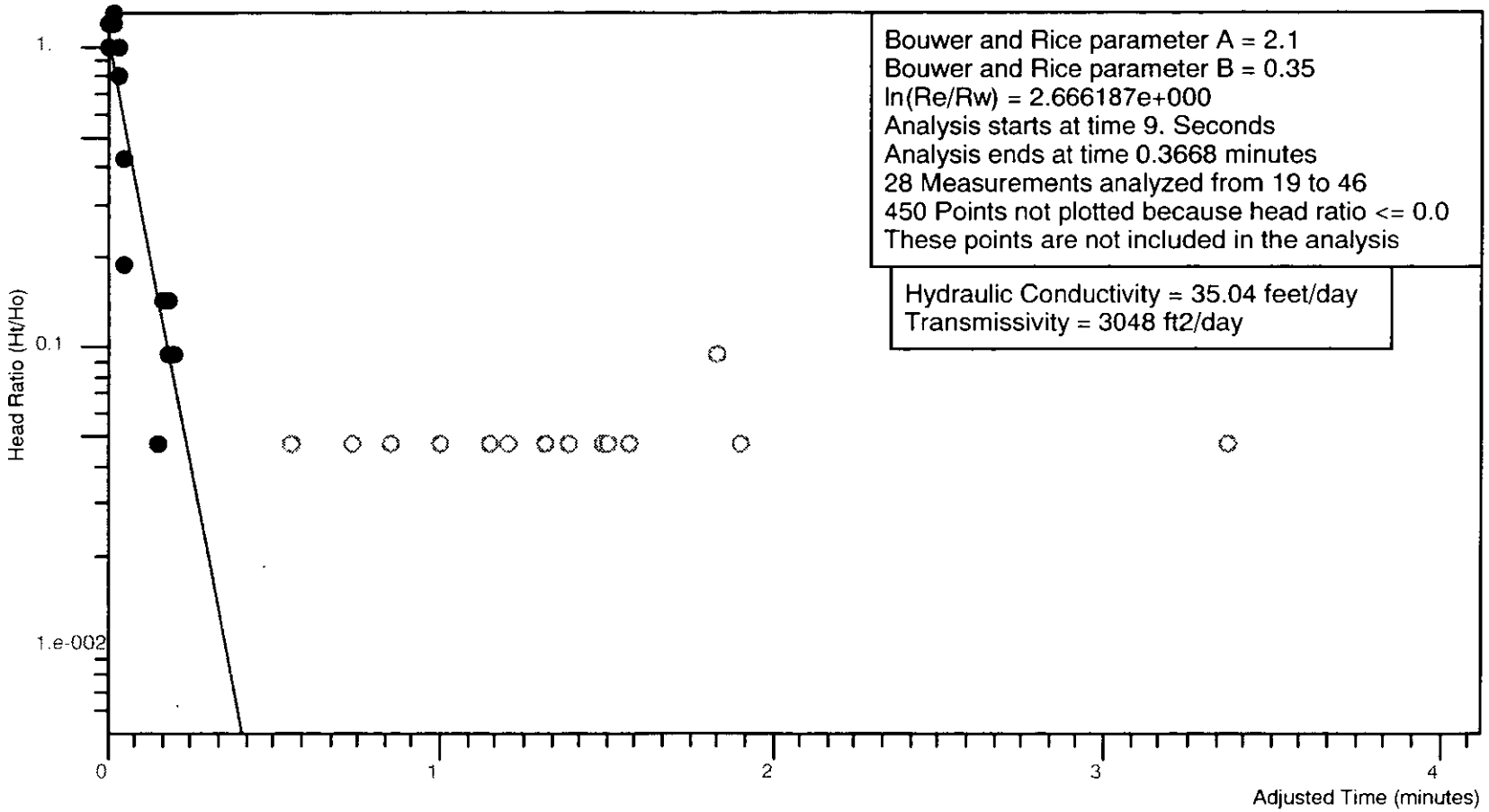
Ho is 0.82 feet at 203. Seconds

Slugtest - Slugin - SZ-2 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

SZ-2



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

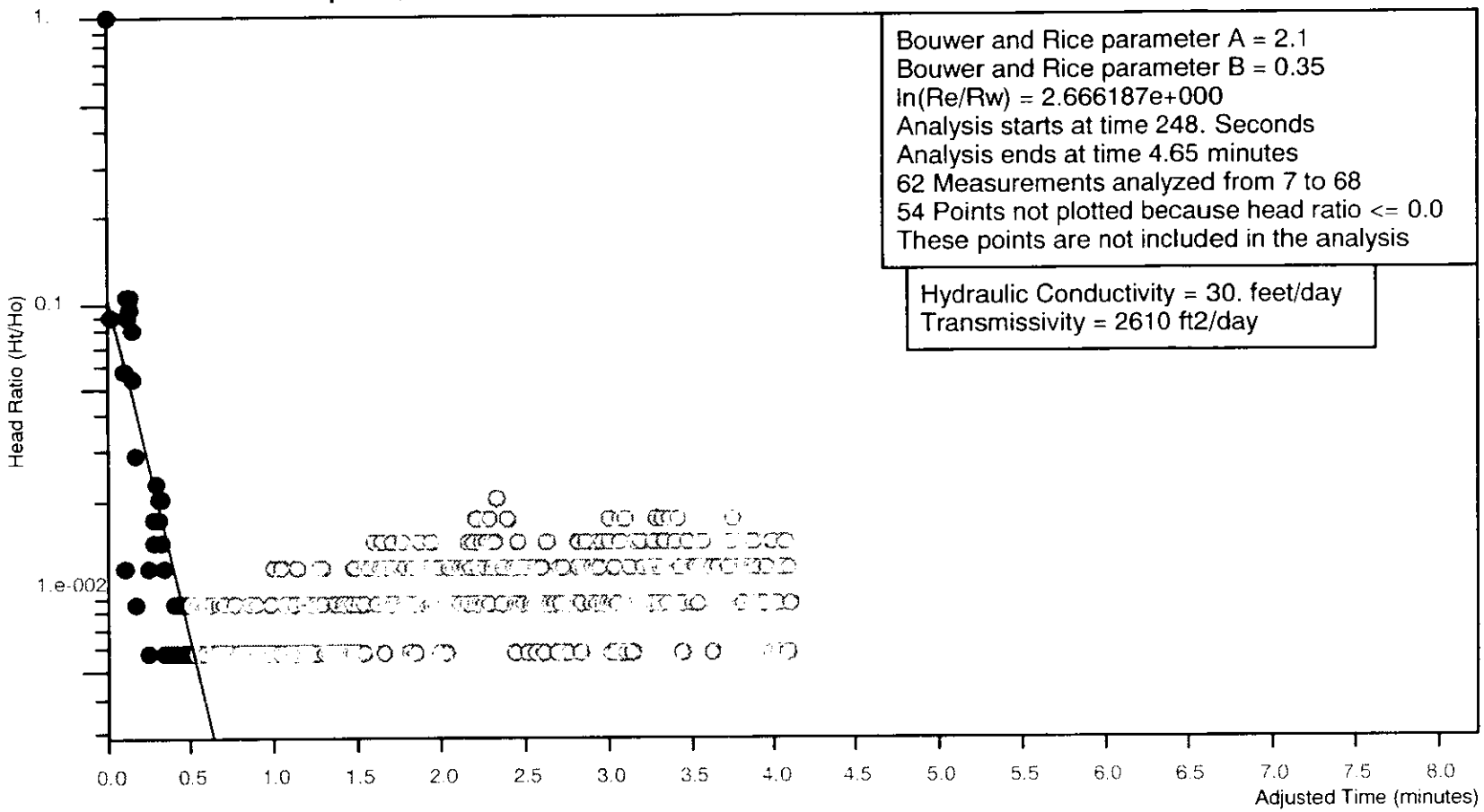
Ho is 0.21 feet at 9. Seconds

Slugtest - Slugout - SZ-2 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

SZ-2



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

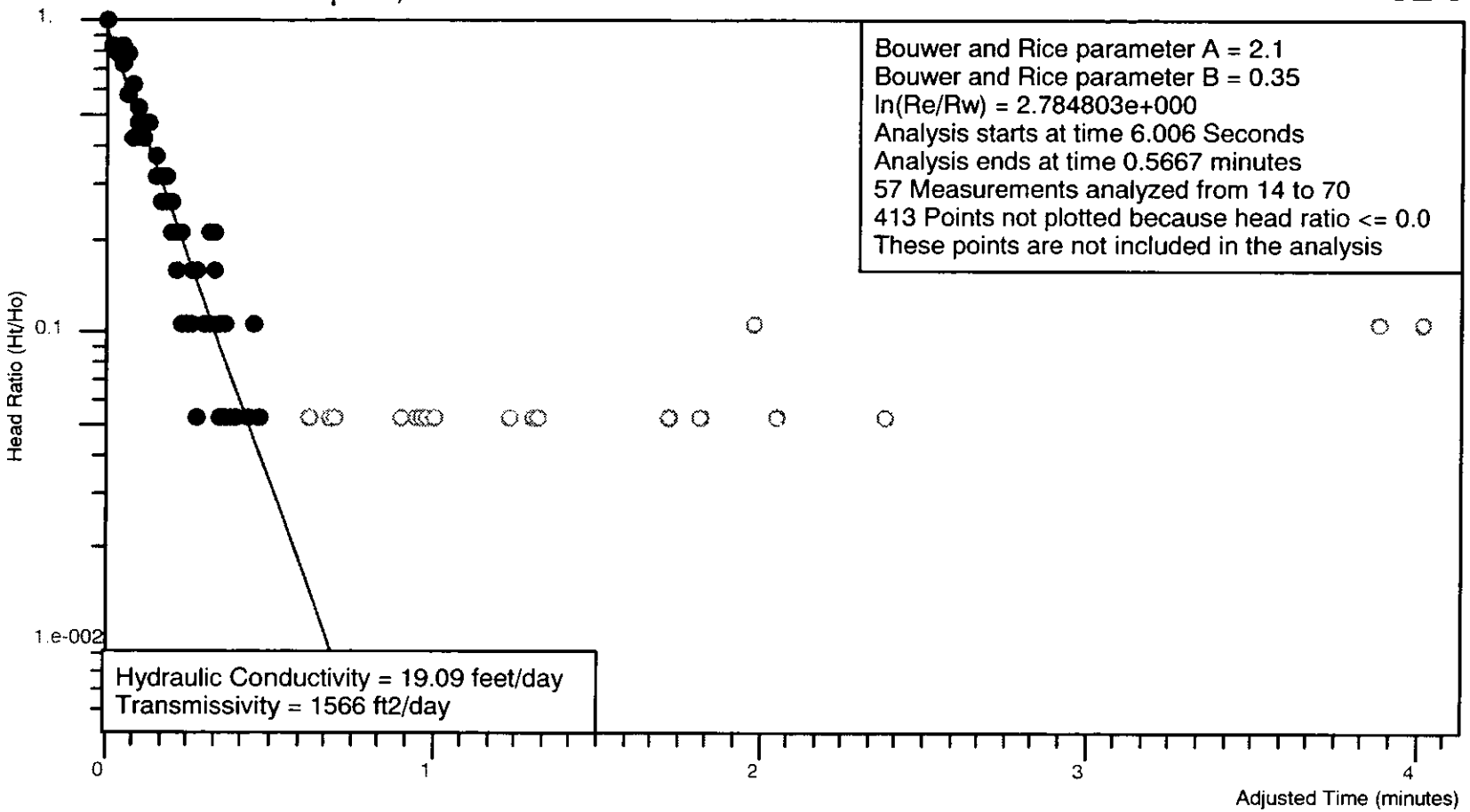
Ho is 3.49 feet at 248. Seconds

Slugtest - Slugin - SZ-3 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

SZ-3



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

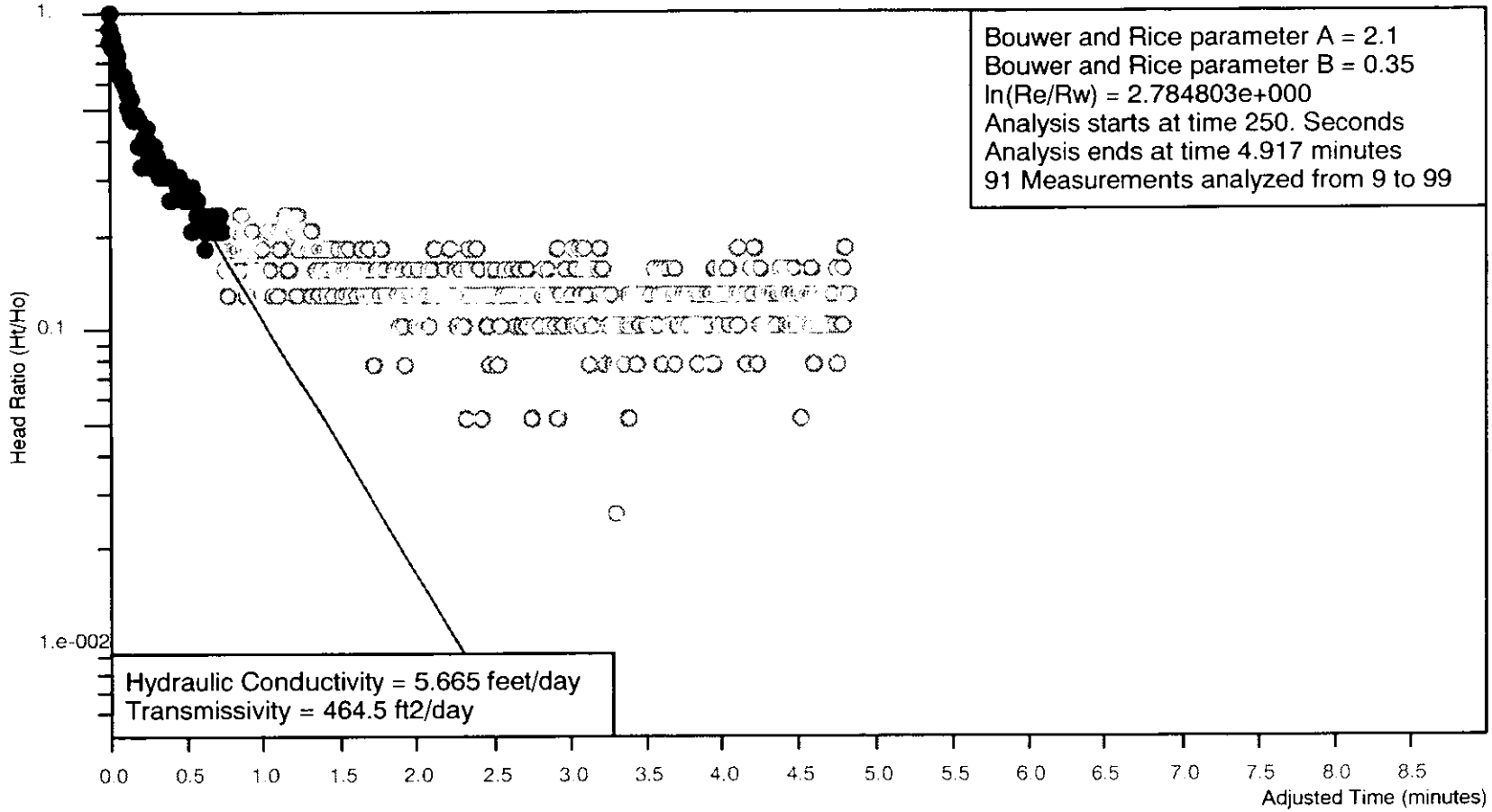
Ho is 0.19 feet at 6.006 Seconds

Slugtest - Slugout - SZ-3 12/1/01

Oak Hammock Holopaw, Florida

Bouwer and Rice Graph

SZ-3



Project Number: 48OH01 for OMNI Waste

Analysis by Starpoint Software

Ho is 0.39 feet at 250. Seconds

Attachment 4.

Accutest Laboratories
Analytical Testing Results
Drilling Water, Ground Water, Surface Water

DATA ASSESSMENT SUMMARY CHECKLIST AND REPORT – LEVEL III

Client ID: Omni – Oak Hammock
Project Number: TFO48OH01
Project Description: Drilling Water

Prepared By: Diane M. Rosseter
Date: 12/6/01

Sample Delivery Group (SDG) Description:

The municipal water used for well installation at the Omni – Oak Hammock landfill site in Holopaw, FL, was sampled by Kubal-Furr and Associates for volatile and semivolatile organic compounds. The samples were analyzed by AccuTest Laboratories Southeast of Orlando, FL in accordance with FLADEP approved methodology.

CONTENTS	LEVEL III	COMMENTS
Sample Results	√	All data **Class A** except as noted in the discussion section.
Chain(s) of Custody (COCs)	√	O.K.
Master Tracking List	√	O.K.
Case Narrative	√	O.K.
Sample Prep	√	O.K.
Standards Prep		
Instrument Quality Control Data	√	O.K.
Batch Quality Control Report	√	O.K.
Surrogate Recovery Report	√	O.K.
Trip/Field/Equipment Blank Report	√	O.K.
Field Notes/Logbook		
CLP Forms		
All Raw Data		
Electronic Deliverables	√	O.K.

Discussion:

Volatiles

1) The continuing calibration verification (CCV) associated with sample BOART-1 exceeded the acceptance criteria for percent drift (±25%D) from the initial calibration established by the *National Functional Guidelines for Organic Data Review* (USEPA 1999) for bromoform. Results for bromoform in BOART-1 were reported as non-detected and were, therefore, flagged with "UJ".

Semivolatiles

1) The initial calibration associated with sample BOART-1 was outside the *NFG*-established acceptance criteria of ±30% relative standard deviation for calibration response factors for 2,4-dinitrophenol. In addition, the continuing calibration verification associated with this sample exceeded the criteria for ±25% drift from the initial calibration for 2,4-dinitrophenol and benzaldehyde. These compounds were reported as non-detected in BOART-1 and were, therefore, flagged with "UJ".

2) The initial calibration associated with sample PRECISION MOBIL COMBO RIG and GANNARELLI RANCH WELL was outside the *NFG*-established acceptance criteria for benzaldehyde. This compound was reported as non-detected in PRECISION MOBIL COMBO RIG and GANNARELLI RANCH WELL and was, therefore, flagged with "UJ".

3) The continuing calibration verification associated with the original analysis of sample MC2 was outside the *NFG*-established criteria for percent drift from the initial calibration for benzaldehyde. Results for this compound were reported as non-detected in MC2 and were, therefore, flagged with "UJ".

4) The matrix spike and/or matrix spike duplicate (MS/MSD) performed on GANNARELLI RANCH WELL recovered above the laboratory-established upper control limit for 2,4-dinitrophenol, pentachlorophenol, and di-n-octyl phthalate. In addition, 2,4-dinitrophenol recovered above the upper control limit in the associated laboratory control sample. Results for these compounds in GANNARELLI RANCH WELL were reported as non-detected, therefore, no qualifiers were assigned.

5) Bis(2-ethylhexyl)phthalate (BEHP) was found at levels between the method detection limit (MDL) and laboratory-reporting limit (RL) in samples BOART-1 and PRECISION MOBIL COMBO RIG. While not found in the associated method blanks, it should be noted that BEHP is considered a common lab and field contaminant and is often found in environmental samples as a result. Because the drill water used for this project was stored in polyethylene tanks, this may have contributed to the presence of BEHP in these drilling water samples.

6) It should be noted that surrogate recovery in the method blank associated with the original extraction and analysis of MC2 was well below the lower acceptance limits for all compounds, possibly due to laboratory error or equipment failure. All samples associated with this blank were reextracted and reanalyzed out of holding time to confirm results obtained from the original analysis. Because surrogate recoveries were acceptable in both the original analysis and reanalysis of MC2, and results were found to be non-detected in both runs, the results from original analysis were accepted by the reviewer.

UJ = not detected above the associated quantitation limit, however results should be as estimated

Class A = quantitative **Class B = qualitative** **Class C = unusable**

Southeast ACCUTEST.

12/06/01

Technical Report for

Kubal-Furr & Associates

Omni-Oak Hammock

48OH01 Holopaw,FL

Accutest Job Number: F11379

Report to:

Kubal-Furr & Associates

Drosseter@ix.netcom.com

ATTN: Diane Rosseter

Total number of pages in report: 6

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Sample Summary

Kubal-Furr & Associates

Job No: F11379

Omni-Oak Hammock
Project No: 48OH01 Holopaw,FL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
F11379-1	10/31/01	10:30	GK	11/01/01	AQ	Ground Water	BOART-1

Report of Analysis

Client Sample ID:	BOART-1		
Lab Sample ID:	F11379-1	Date Sampled:	10/31/01
Matrix:	AQ - Ground Water	Date Received:	11/01/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007017.D	1	11/09/01	JG	n/a	n/a	VB302
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	8.5	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BOART-1		
Lab Sample ID:	F11379-1	Date Sampled:	10/31/01
Matrix:	AQ - Ground Water	Date Received:	11/01/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BOART-1		
Lab Sample ID:	F11379-1	Date Sampled:	10/31/01
Matrix:	AQ - Ground Water	Date Received:	11/01/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009404.D	1	11/06/01	ME	11/05/01	OP4097	SL540
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BOART-1		
Lab Sample ID:	F11379-1	Date Sampled:	10/31/01
Matrix:	AQ - Ground Water	Date Received:	11/01/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.6	5.0	ug/l	J
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	52%		20-125%
4165-62-2	Phenol-d5	35%		10-125%
118-79-6	2,4,6-Tribromophenol	88%		35-140%
4165-60-0	Nitrobenzene-d5	82%		46-125%
321-60-8	2-Fluorobiphenyl	78%		46-125%
1718-51-0	Terphenyl-d14	89%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Blank Spike Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB302-BS	B0006996.D	1	11/09/01	JG	n/a	n/a	VB302

The QC reported here applies to the following samples: Method: SW846 8260B

F11379-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	107	86	67-125
71-43-2	Benzene	25	23.8	95	75-125
75-27-4	Bromodichloromethane	25	23.0	92	75-125
75-25-2	Bromoform	25	19.2	77	72-125
108-90-7	Chlorobenzene	25	23.4	94	75-125
75-00-3	Chloroethane	25	27.2	109	58-136
67-66-3	Chloroform	25	22.3	89	75-125
75-15-0	Carbon disulfide	125	108	86	48-142
56-23-5	Carbon tetrachloride	25	22.2	89	75-136
110-82-7	Cyclohexane	25	23.9	96	50-150 [a]
75-34-3	1,1-Dichloroethane	25	23.8	95	75-125
75-35-4	1,1-Dichloroethylene	25	23.9	96	67-138
96-12-8	1,2-Dibromo-3-chloropropane	25	20.2	81	64-125
106-93-4	1,2-Dibromoethane	25	22.1	88	75-125
107-06-2	1,2-Dichloroethane	25	21.6	86	75-125
78-87-5	1,2-Dichloropropane	25	24.5	98	75-125
124-48-1	Dibromochloromethane	25	22.1	88	75-125
75-71-8	Dichlorodifluoromethane	25	34.8	139	48-171
156-59-2	cis-1,2-Dichloroethylene	25	24.0	96	75-129
10061-01-5	cis-1,3-Dichloropropene	25	21.0	84	75-125
541-73-1	m-Dichlorobenzene	25	22.9	92	75-125
95-50-1	o-Dichlorobenzene	25	23.0	92	75-125
106-46-7	p-Dichlorobenzene	25	22.3	89	75-125
156-60-5	trans-1,2-Dichloroethylene	25	23.8	95	73-125
10061-02-6	trans-1,3-Dichloropropene	25	19.0	76	75-125
100-41-4	Ethylbenzene	25	22.7	91	68-135
76-13-1	Freon 113	25	23.4	94	75-125
591-78-6	2-Hexanone	125	112	90	68-125
98-82-8	Isopropylbenzene	25	24.7	99	75-125
108-10-1	4-Methyl-2-pentanone	125	107	86	75-125
79-20-9	Methyl Acetate	125	112	90	50-150 [a]
74-83-9	Methyl bromide	25	24.5	98	59-146
74-87-3	Methyl chloride	25	28.3	113	50-142
108-87-2	Methylcyclohexane	25	24.9	100	50-150 [a]
75-09-2	Methylene chloride	25	21.6	86	69-125
78-93-3	Methyl ethyl ketone	125	110	88	70-125

Blank Spike Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB302-BS	B0006996.D	1	11/09/01	JG	n/a	n/a	VB302

The QC reported here applies to the following samples: Method: SW846 8260B

F11379-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	20.7	83	75-125
100-42-5	Styrene	25	21.6	86	75-125
71-55-6	1,1,1-Trichloroethane	25	24.1	96	75-132
79-34-5	1,1,2,2-Tetrachloroethane	25	22.6	90	75-125
79-00-5	1,1,2-Trichloroethane	25	23.6	94	75-125
120-82-1	1,2,4-Trichlorobenzene	25	23.2	93	75-125
127-18-4	Tetrachloroethylene	25	24.3	97	75-126
108-88-3	Toluene	25	23.2	93	75-125
79-01-6	Trichloroethylene	25	22.8	91	75-125
75-69-4	Trichlorofluoromethane	25	27.6	110	55-162
75-01-4	Vinyl chloride	25	27.1	108	60-147
1330-20-7	Xylene (total)	75	71.1	95	75-125

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	99%	80-120%
2037-26-5	Toluene-D8	101%	80-120%
460-00-4	4-Bromofluorobenzene	99%	80-120%

(a) Advisory control limits.

Method Blank Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB302-MB	B0006997.D	1	11/09/01	JG	n/a	n/a	VB302

The QC reported here applies to the following samples: Method: SW846 8260B

F11379-1

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

Method Blank Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB302-MB	B0006997.D	1	11/09/01	JG	n/a	n/a	VB302

The QC reported here applies to the following samples: Method: SW846 8260B

F11379-1

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	98%	80-120%
2037-26-5	Toluene-D8	100%	80-120%
460-00-4	4-Bromofluorobenzene	101%	80-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11395-15MS	B0007003.D	1	11/09/01	JG	n/a	n/a	VB302
F11395-15MSD	B0007004.D	1	11/09/01	JG	n/a	n/a	VB302
F11395-15	B0006998.D	1	11/09/01	JG	n/a	n/a	VB302

The QC reported here applies to the following samples: Method: SW846 8260B

F11379-1

CAS No.	Compound	F11395-15 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	115	92	120	96	4	61-125/15
71-43-2	Benzene	ND		25	23.4	94	23.3	93	0	75-125/15
75-27-4	Bromodichloromethane	ND		25	21.9	88	22.2	89	1	75-125/15
75-25-2	Bromoform	ND		25	21.1	84	20.9	84	1	66-125/15
108-90-7	Chlorobenzene	ND		25	23.1	92	22.5	90	3	75-125/15
75-00-3	Chloroethane	ND		25	27.1	108	26.5	106	2	53-125/15
67-66-3	Chloroform	ND		25	21.9	88	21.6	86	1	75-125/15
75-15-0	Carbon disulfide	ND		125	109	87	105	84	4	51-138/15
56-23-5	Carbon tetrachloride	ND		25	22.0	88	22.3	89	1	74-131/15
110-82-7	Cyclohexane	ND		25	23.0	92	22.9	92	0	50-150/3
75-34-3	1,1-Dichloroethane	ND		25	22.7	91	23.1	92	2	75-125/1
75-35-4	1,1-Dichloroethylene	ND		25	22.7	91	22.2	89	2	66-140/15
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	19.5	78	19.9	80	2	57-125/15
106-93-4	1,2-Dibromoethane	ND		25	21.9	88	21.2	85	3	75-125/15
107-06-2	1,2-Dichloroethane	ND		25	20.1	80	21.1	84	5	75-125/15
78-87-5	1,2-Dichloropropane	ND		25	23.8	95	24.4	98	2	75-125/15
124-48-1	Dibromochloromethane	ND		25	22.2	89	21.5	86	3	75-125/15
75-71-8	Dichlorodifluoromethane	ND		25	33.0	132	34.0	136	3	45-182/15
156-59-2	cis-1,2-Dichloroethylene	ND		25	23.5	94	23.1	92	2	75-136/15
10061-01-5	cis-1,3-Dichloropropene	ND		25	19.0	76	19.0	76	0	71-125/15
541-73-1	m-Dichlorobenzene	ND		25	22.3	89	22.5	90	1	75-125/15
95-50-1	o-Dichlorobenzene	ND		25	22.2	89	22.2	89	0	75-125/15
106-46-7	p-Dichlorobenzene	ND		25	22.2	89	22.5	90	1	75-125/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	22.6	90	22.8	91	1	73-125/15
10061-02-6	trans-1,3-Dichloropropene	ND		25	16.9	68	16.8	67	0	62-125/15
100-41-4	Ethylbenzene	ND		25	22.4	90	22.0	88	2	75-125/15
76-13-1	Freon 113	ND		25	23.6	94	23.1	92	2	69-131/15
591-78-6	2-Hexanone	ND		125	109	87	108	86	1	71-125/15
98-82-8	Isopropylbenzene	ND		25	23.3	93	23.8	95	2	74-125/15
108-10-1	4-Methyl-2-pentanone	ND		125	106	85	106	85	0	75-125/15
79-20-9	Methyl Acetate	ND		125	107	86	109	87	2	50-150/30 [a]
74-83-9	Methyl bromide	ND		25	24.9	100	24.2	97	3	67-146/15
74-87-3	Methyl chloride	ND		25	29.0	116	28.5	114	2	47-160/15
108-87-2	Methylcyclohexane	ND		25	23.3	93	23.5	94	1	50-150/30 [a]
75-09-2	Methylene chloride	ND		25	21.2	85	21.5	86	1	69-125/15
78-93-3	Methyl ethyl ketone	ND		125	112	90	115	92	3	70-125/1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11395-15MS	B0007003.D	1	11/09/01	JG	n/a	n/a	VB302
F11395-15MSD	B0007004.D	1	11/09/01	JG	n/a	n/a	VB302
F11395-15	B0006998.D	1	11/09/01	JG	n/a	n/a	VB302

The QC reported here applies to the following samples: Method: SW846 8260B

F11379-1

CAS No.	Compound	F11395-15 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	ND		25	20.2	81	21.4	86	6	75-125/15
100-42-5	Styrene	ND		25	20.7	83	20.7	83	0	69-126/15
71-55-6	1,1,1-Trichloroethane	ND		25	23.3	93	23.2	93	0	75-131/15
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	22.0	88	21.7	87	1	75-125/15
79-00-5	1,1,2-Trichloroethane	ND		25	22.7	91	22.5	90	1	75-125/15
120-82-1	1,2,4-Trichlorobenzene	ND		25	20.8	83	21.3	85	2	74-125/15
127-18-4	Tetrachloroethylene	ND		25	22.7	91	23.5	94	3	75-125/15
108-88-3	Toluene	0.52	J	25	23.3	91	22.8	89	2	75-125/15
79-01-6	Trichloroethylene	ND		25	22.8	91	22.8	91	0	75-125/15
75-69-4	Trichlorofluoromethane	ND		25	24.2	97	24.5	98	1	60-139/30
75-01-4	Vinyl chloride	ND		25	28.0	112	28.2	113	1	52-169/15
1330-20-7	Xylene (total)	ND		75	69.3	92	68.1	91	2	75-125/15

CAS No.	Surrogate Recoveries	MS	MSD	F11395-15	Limits
1868-53-7	Dibromofluoromethane	101%	103%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	94%	95%	94%	80-120%
2037-26-5	Toluene-D8	99%	98%	100%	80-120%
460-00-4	4-Bromofluorobenzene	95%	97%	100%	80-120%

(a) Advisory control limits.

Volatile Surrogate Recovery Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F11379-1	B0007017.D	98.0	95.0	100.0	102.0
F11395-15MS	B0007003.D	101.0	94.0	99.0	95.0
F11395-15MSD	B0007004.D	103.0	95.0	98.0	97.0
VB302-BS	B0006996.D	101.0	99.0	101.0	99.0
VB302-MB	B0006997.D	100.0	98.0	100.0	101.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Blank Spike Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-BS	L009393.D	1	11/06/01	ME	11/05/01	OP4097	SL540

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-57-8	2-Chlorophenol	50	38.9	78	60-125
59-50-7	4-Chloro-3-methyl phenol	50	40.2	80	70-125
120-83-2	2,4-Dichlorophenol	50	41.6	83	68-125
105-67-9	2,4-Dimethylphenol	50	27.2	54	42-125
51-28-5	2,4-Dinitrophenol	50	44.4	89	10-125
534-52-1	4,6-Dinitro-o-cresol	50	44.6	89	46-125
95-48-7	2-Methylphenol	50	35.5	71	51-125
	3&4-Methylphenol	100	66.1	66	46-125
88-75-5	2-Nitrophenol	50	46.6	93	64-125
100-02-7	4-Nitrophenol	50	22.6	45	17-125
87-86-5	Pentachlorophenol	50	44.0	88	60-125
108-95-2	Phenol	50	23.8	48	16-125
95-95-4	2,4,5-Trichlorophenol	50	43.3	87	74-125
88-06-2	2,4,6-Trichlorophenol	50	42.1	84	70-125
83-32-9	Acenaphthene	50	39.8	80	70-125
208-96-8	Acenaphthylene	50	44.2	88	75-125
120-12-7	Anthracene	50	43.4	87	75-125
56-55-3	Benzo(a)anthracene	50	42.7	85	75-125
50-32-8	Benzo(a)pyrene	50	45.5	91	75-125
205-99-2	Benzo(b)fluoranthene	50	44.0	88	75-125
191-24-2	Benzo(g,h,i)perylene	50	43.5	87	57-135
207-08-9	Benzo(k)fluoranthene	50	40.4	81	75-125
101-55-3	4-Bromophenyl phenyl ether	50	41.4	83	74-125
85-68-7	Butyl benzyl phthalate	50	46.2	92	38-134
91-58-7	2-Chloronaphthalene	50	40.3	81	59-125
106-47-8	4-Chloroaniline	50	40.5	81	31-125
86-74-8	Carbazole	50	43.5	87	75-125
218-01-9	Chrysene	50	41.5	83	75-125
111-91-1	bis(2-Chloroethoxy)methane	50	40.9	82	64-125
111-44-4	bis(2-Chloroethyl)ether	50	39.2	78	62-125
108-60-1	bis(2-Chloroisopropyl)ether	50	36.7	73	60-125
7005-72-3	4-Chlorophenyl phenyl ether	50	40.7	81	75-125
121-14-2	2,4-Dinitrotoluene	50	48.4	97	73-125
606-20-2	2,6-Dinitrotoluene	50	48.4	97	75-125
91-94-1	3,3'-Dichlorobenzidine	50	46.0	92	55-125
53-70-3	Dibenzo(a,h)anthracene	50	44.9	90	64-130

Blank Spike Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-BS	L009393.D	1	11/06/01	ME	11/05/01	OP4097	SL540

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
132-64-9	Dibenzofuran	50	39.6	79	73-125
84-74-2	Di-n-butyl phthalate	50	44.8	90	47-140
117-84-0	Di-n-octyl phthalate	50	46.3	93	52-125
84-66-2	Diethyl phthalate	50	42.4	85	59-125
131-11-3	Dimethyl phthalate	50	42.2	84	24-142
117-81-7	bis(2-Ethylhexyl)phthalate	50	46.9	94	71-125
206-44-0	Fluoranthene	50	43.0	86	75-125
86-73-7	Fluorene	50	41.9	84	75-125
118-74-1	Hexachlorobenzene	50	40.9	82	74-125
87-68-3	Hexachlorobutadiene	50	31.7	63	22-125
77-47-4	Hexachlorocyclopentadiene	50	28.7	57	10-125
67-72-1	Hexachloroethane	50	32.0	64	23-125
193-39-5	Indeno(1,2,3-cd)pyrene	50	44.8	90	53-130
78-59-1	Isophorone	50	40.2	80	63-125
91-57-6	2-Methylnaphthalene	50	37.0	74	51-125
88-74-4	2-Nitroaniline	50	43.0	86	75-125
99-09-2	3-Nitroaniline	50	43.0	86	62-125
100-01-6	4-Nitroaniline	50	45.4	91	67-125
91-20-3	Naphthalene	50	38.7	77	53-125
98-95-3	Nitrobenzene	50	41.6	83	67-125
621-64-7	N-Nitroso-di-n-propylamine	50	38.7	77	61-125
86-30-6	N-Nitrosodiphenylamine	50	45.9	92	75-125
85-01-8	Phenanthrene	50	41.3	83	75-125
129-00-0	Pyrene	50	39.6	79	67-125

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	63%	20-125%
4165-62-2	Phenol-d5	43%	10-125%
118-79-6	2,4,6-Tribromophenol	93%	35-140%
4165-60-0	Nitrobenzene-d5	85%	46-125%
321-60-8	2-Fluorobiphenyl	79%	46-125%
1718-51-0	Terphenyl-d14	88%	49-126%

Method Blank Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-MB	L009394.D	1	11/06/01	ME	11/05/01	OP4097	SL540

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

Method Blank Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-MB	L009394.D	1	11/06/01	ME	11/05/01	OP4097	SL540

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	64%	20-125%
4165-62-2	Phenol-d5	43%	10-125%
118-79-6	2,4,6-Tribromophenol	94%	35-140%

Method Blank Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-MB	L009394.D	1	11/06/01	ME	11/05/01	OP4097	SL540

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	95%	46-125%
321-60-8	2-Fluorobiphenyl	87%	46-125%
1718-51-0	Terphenyl-d14	95%	49-126%

Method Blank Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-MB	L009427.D	1	11/07/01	ME	11/05/01	OP4097	SL541

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

Method Blank Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-MB	L009427.D	1	11/07/01	ME	11/05/01	OP4097	SL541

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	65%	20-125%
4165-62-2	Phenol-d5	48%	10-125%
118-79-6	2,4,6-Tribromophenol	84%	35-140%

Method Blank Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-MB	L009427.D	1	11/07/01	ME	11/05/01	OP4097	SL541

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	89%	46-125%
321-60-8	2-Fluorobiphenyl	85%	46-125%
1718-51-0	Terphenyl-d14	92%	49-126%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-MS	L009429.D	1	11/07/01	ME	11/05/01	OP4097	SL541
OP4097-MSD	L009430.D	1	11/07/01	ME	11/05/01	OP4097	SL541
F11395-1	L009405.D	1	11/06/01	ME	11/05/01	OP4097	SL540

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Compound	F11395-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		100	74.3	74	80.0	80	7	59-125/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	78.2	78	82.8	83	6	72-125/20
120-83-2	2,4-Dichlorophenol	ND		100	75.8	76	83.0	83	9	65-125/20
105-67-9	2,4-Dimethylphenol	ND		100	21.3	21*	29.8	30*	33*	37-125/20
51-28-5	2,4-Dinitrophenol	ND		100	76.5	76	75.4	75	1	27-125/41
534-52-1	4,6-Dinitro-o-cresol	ND		100	75.1	75	77.1	77	3	54-125/20
95-48-7	2-Methylphenol	ND		100	68.4	68	71.4	71	4	57-125/20
	3&4-Methylphenol	ND		200	151	76	159	80	5	55-125/20
88-75-5	2-Nitrophenol	ND		100	76.1	76	85.3	85	11	67-125/20
100-02-7	4-Nitrophenol	ND		100	64.3	64	61.6	62	4	41-125/23
87-86-5	Pentachlorophenol	ND		100	90.1	90	96.3	96	7	67-126/20
108-95-2	Phenol	ND		100	60.9	61	64.7	65	6	39-125/20
95-95-4	2,4,5-Trichlorophenol	ND		100	80.9	81	86.8	87	7	75-125/20
88-06-2	2,4,6-Trichlorophenol	ND		100	73.3	73	82.7	83	12	70-125/20
83-32-9	Acenaphthene	ND		100	77.5	78	86.2	86	11	74-125/20
208-96-8	Acenaphthylene	ND		100	86.1	86	94.4	94	9	75-125/20
120-12-7	Anthracene	ND		100	84.8	85	92.5	92	9	75-125/20
56-55-3	Benzo(a)anthracene	ND		100	81.0	81	89.2	89	10	75-125/20
50-32-8	Benzo(a)pyrene	ND		100	86.6	87	95.2	95	9	75-125/20
205-99-2	Benzo(b)fluoranthene	ND		100	83.0	83	94.6	95	13	75-125/20
191-24-2	Benzo(g,h,i)perylene	ND		100	86.8	87	98.2	98	12	61-125/21
207-08-9	Benzo(k)fluoranthene	ND		100	82.4	82	90.9	91	10	75-125/20
101-55-3	4-Bromophenyl phenyl ether	ND		100	81.9	82	95.5	96	15	73-125/20
85-68-7	Butyl benzyl phthalate	ND		100	83.6	84	91.5	92	9	66-125/20
91-58-7	2-Chloronaphthalene	ND		100	77.3	77	86.9	87	12	64-125/20
106-47-8	4-Chloroaniline	ND		100	69.1	69	71.0	71	3	44-125/20
86-74-8	Carbazole	ND		100	85.6	86	92.9	93	8	75-125/20
218-01-9	Chrysene	ND		100	81.1	81	88.5	88	9	75-125/20
111-91-1	bis(2-Chloroethoxy)methane	ND		100	79.5	80	87.3	87	9	62-125/20
111-44-4	bis(2-Chloroethyl)ether	ND		100	74.5	74	81.3	81	9	61-125/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		100	76.5	76	81.6	82	6	56-125/22
7005-72-3	4-Chlorophenyl phenyl ether	ND		100	85.3	85	87.5	88	2	75-125/20
121-14-2	2,4-Dinitrotoluene	ND		100	90.2	90	90.3	90	0	75-125/20
606-20-2	2,6-Dinitrotoluene	ND		100	87.4	87	89.3	89	2	75-125/20
91-94-1	3,3'-Dichlorobenzidine	ND		100	64.2	64	72.0	72	11	20-125/29
53-70-3	Dibenzo(a,h)anthracene	ND		100	82.6	83	93.4	93	12	64-127/20

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4097-MS	L009429.D	1	11/07/01	ME	11/05/01	OP4097	SL541
OP4097-MSD	L009430.D	1	11/07/01	ME	11/05/01	OP4097	SL541
F11395-1	L009405.D	1	11/06/01	ME	11/05/01	OP4097	SL540

The QC reported here applies to the following samples: Method: SW846 8270C

F11379-1

CAS No.	Compound	F11395-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
132-64-9	Dibenzofuran	ND		100	78.5	78	84.7	85	8	73-125/20
84-74-2	Di-n-butyl phthalate	ND		100	90.2	90	95.5	96	6	71-125/20
117-84-0	Di-n-octyl phthalate	ND		100	83.5	84	93.1	93	11	66-125/30
84-66-2	Diethyl phthalate	ND		100	90.2	90	85.6	86	5	64-125/20
131-11-3	Dimethyl phthalate	ND		100	85.4	85	83.0	83	3	32-139/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		100	88.8	89	93.4	93	5	74-125/20
206-44-0	Fluoranthene	ND		100	88.5	88	94.4	94	6	75-125/20
86-73-7	Fluorene	ND		100	86.1	86	89.8	90	4	75-125/20
118-74-1	Hexachlorobenzene	ND		100	83.1	83	93.9	94	12	75-125/20
87-68-3	Hexachlorobutadiene	ND		100	62.0	62	70.3	70	12	26-125/2
77-47-4	Hexachlorocyclopentadiene	ND		100	43.9	44	56.2	56	24	18-125/2
67-72-1	Hexachloroethane	ND		100	65.4	65	73.1	73	11	22-125/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		100	83.7	84	91.7	92	9	54-125/20
78-59-1	Isophorone	ND		100	79.6	80	86.0	86	8	62-125/20
91-57-6	2-Methylnaphthalene	ND		100	73.0	73	78.9	79	8	58-125/20
88-74-4	2-Nitroaniline	ND		100	82.5	82	85.8	86	4	67-125/20
99-09-2	3-Nitroaniline	ND		100	69.6	70	65.5	66	6	53-125/20
100-01-6	4-Nitroaniline	ND		100	85.2	85	81.3	81	5	63-125/20
91-20-3	Naphthalene	ND		100	77.8	78	84.3	84	8	55-125/20
98-95-3	Nitrobenzene	ND		100	75.8	76	85.6	86	12	63-125/20
621-64-7	N-Nitroso-di-n-propylamine	ND		100	87.2	87	90.6	91	4	58-125/20
86-30-6	N-Nitrosodiphenylamine	ND		100	88.1	88	96.8	97	9	75-125/20
85-01-8	Phenanthrene	ND		100	81.8	82	88.4	88	8	75-125/20
129-00-0	Pyrene	ND		100	75.0	75	82.7	83	10	67-125/20

CAS No.	Surrogate Recoveries	MS	MSD	F11395-1	Limits
367-12-4	2-Fluorophenol	68%	74%		20-125%
4165-62-2	Phenol-d5	56%	60%		10-125%
118-79-6	2,4,6-Tribromophenol	82%	95%		35-140%
4165-60-0	Nitrobenzene-d5	75%	85%	72%	46-125%
321-60-8	2-Fluorobiphenyl	76%	85%	68%	46-125%
1718-51-0	Terphenyl-d14	78%	87%	86%	49-126%

Semivolatile Surrogate Recovery Summary

Job Number: F11379
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
F11379-1	L009404.D	52.0	35.0	88.0	82.0	78.0	89.0
OP4097-BS	L009393.D	63.0	43.0	93.0	85.0	79.0	88.0
OP4097-MB	L009394.D	64.0	43.0	94.0	95.0	87.0	95.0
OP4097-MB	L009427.D	65.0	48.0	84.0	89.0	85.0	92.0
OP4097-MS	L009429.D	68.0	56.0	82.0	75.0	76.0	78.0
OP4097-MSD	L009430.D	74.0	60.0	95.0	85.0	85.0	87.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	20-125%
S2 = Phenol-d5	10-125%
S3 = 2,4,6-Tribromophenol	35-140%
S4 = Nitrobenzene-d5	46-125%
S5 = 2-Fluorobiphenyl	46-125%
S6 = Terphenyl-d14	49-126%

CHAIN OF CUSTODY

ACCUTEST
4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #: F11379
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: KUBAL-FURR + ASSOCIATES
ADDRESS: PO BOX 80247
CITY, STATE, ZIP: SIMPSONVILLE SC 29680
SEND REPORT TO: DIANE ROSSETTER
PHONE #: (864) 962-9490 - VOICE

FACILITY INFORMATION

PROJECT NAME: OMNI - OAK HAMMOCK ~~HOLOPAW, FL~~
LOCATION: ~~HOLOPAW, FL~~ OAK HAMMOCK
PROJECT NO.: 480H01
FAX #: (864) 962-5309

ANALYTICAL INFORMATION

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	VOCs	SVOCs	LAB USE ONLY
1)	BOART-1	10/31/01	1030	GK		5	X					X	X	

DATA TURNAROUND INFORMATION

- [X] STANDARD
- [ ] 48 HOUR RUSH
- [ ] 24 HOUR EMERGENCY
- [ ] OTHER

APPROVED BY: _____

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY) _____

COMMENTS/REMARKS

SEE TASK ORDER # 480H01
TCL VOCs TCL SVOCs
EXTENDED TCL LIST AS IN OLM04.2

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. Megan L. Ramona	11/1/01 0600	1. SECURE AREA	2.		2. [illegible] 11/01/01 - 1000
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE 0.2 C
5.		5.			

Southeast
ACCUTEST.

11/19/01

Technical Report for

Kubal-Furr & Associates

Omni-Oak Hammock

48OH01 HOLOPAW,FL

Accutest Job Number: F11418

Report to:

Kubal-Furr & Associates

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Total number of pages in report: 8

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Harry Behzadi, Ph.D.
Laboratory Director

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Sample Summary

Kubal-Furr & Associates

Job No: F11418

Omni-Oak Hammock
Project No: 48OH01 HOLOPAW,FL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
F11418-1	11/05/01	13:10	GK	11/06/01	AQ	Water	PRECISION MOBIL COMBO RIG
F11418-2	11/05/01	00:00	GK	11/06/01	AQ	Trip Blank Water	TRIP BLANK

Report of Analysis

Client Sample ID:	PRECISION MOBIL COMBO RIG		
Lab Sample ID:	F11418-1	Date Sampled:	11/05/01
Matrix:	AQ - Water	Date Received:	11/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0006593.D	1	11/14/01	JG	n/a	n/a	VC311
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	2.6	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	7.9	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PRECISION MOBIL COMBO RIG		
Lab Sample ID:	F11418-1	Date Sampled:	11/05/01
Matrix:	AQ - Water	Date Received:	11/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	107%		80-120%
460-00-4	4-Bromofluorobenzene	109%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PRECISION MOBIL COMBO RIG		
Lab Sample ID:	F11418-1	Date Sampled:	11/05/01
Matrix:	AQ - Water	Date Received:	11/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009484.D	1	11/10/01	ME	11/08/01	OP4151	SL544
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PRECISION MOBIL COMBO RIG		
Lab Sample ID:	F11418-1	Date Sampled:	11/05/01
Matrix:	AQ - Water	Date Received:	11/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.9	5.0	ug/l	J
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%		20-125%
4165-62-2	Phenol-d5	31%		10-125%
118-79-6	2,4,6-Tribromophenol	76%		35-140%
4165-60-0	Nitrobenzene-d5	70%		46-125%
321-60-8	2-Fluorobiphenyl	70%		46-125%
1718-51-0	Terphenyl-d14	98%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F11418-2	Date Sampled:	11/05/01
Matrix:	AQ - Trip Blank Water	Date Received:	11/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0006594.D	1	11/14/01	JG	n/a	n/a	VC311
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F11418-2	Date Sampled:	11/05/01
Matrix:	AQ - Trip Blank Water	Date Received:	11/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	109%		80-120%
460-00-4	4-Bromofluorobenzene	110%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Blank Spike Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC311-BS	C0006583.D	1	11/14/01	JG	n/a	n/a	VC311

The QC reported here applies to the following samples: Method: SW846 8260B

F11418-1, F11418-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	127	102	67-125
71-43-2	Benzene	25	25.4	102	75-125
75-27-4	Bromodichloromethane	25	23.2	93	75-125
75-25-2	Bromoform	25	20.2	81	72-125
108-90-7	Chlorobenzene	25	22.8	91	75-125
75-00-3	Chloroethane	25	27.6	110	58-136
67-66-3	Chloroform	25	23.6	94	75-125
75-15-0	Carbon disulfide	125	116	93	48-142
56-23-5	Carbon tetrachloride	25	23.0	92	75-136
110-82-7	Cyclohexane	25	25.5	102	50-150 [a]
75-34-3	1,1-Dichloroethane	25	26.2	105	75-125
75-35-4	1,1-Dichloroethylene	25	26.0	104	67-138
96-12-8	1,2-Dibromo-3-chloropropane	25	20.8	83	64-125
106-93-4	1,2-Dibromoethane	25	22.2	89	75-125
107-06-2	1,2-Dichloroethane	25	23.4	94	75-125
78-87-5	1,2-Dichloropropane	25	27.2	109	75-125
124-48-1	Dibromochloromethane	25	21.7	87	75-125
75-71-8	Dichlorodifluoromethane	25	32.8	131	48-171
156-59-2	cis-1,2-Dichloroethylene	25	24.2	97	75-129
10061-01-5	cis-1,3-Dichloropropene	25	21.8	87	75-125
541-73-1	m-Dichlorobenzene	25	21.0	84	75-125
95-50-1	o-Dichlorobenzene	25	20.7	83	75-125
106-46-7	p-Dichlorobenzene	25	21.5	86	75-125
156-60-5	trans-1,2-Dichloroethylene	25	25.4	102	73-125
10061-02-6	trans-1,3-Dichloropropene	25	22.0	88	75-125
100-41-4	Ethylbenzene	25	24.3	97	68-135
76-13-1	Freon 113	25	23.0	92	75-125
591-78-6	2-Hexanone	125	135	108	68-125
98-82-8	Isopropylbenzene	25	23.9	96	75-125
108-10-1	4-Methyl-2-pentanone	125	130	104	75-125
79-20-9	Methyl Acetate	125	134	107	50-150 [a]
74-83-9	Methyl bromide	25	27.9	112	59-146
74-87-3	Methyl chloride	25	31.4	126	50-142
108-87-2	Methylcyclohexane	25	24.7	99	50-150 [a]
75-09-2	Methylene chloride	25	26.0	104	69-125
78-93-3	Methyl ethyl ketone	125	122	98	70-125

Blank Spike Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC311-BS	C0006583.D	1	11/14/01	JG	n/a	n/a	VC311

The QC reported here applies to the following samples: Method: SW846 8260B

F11418-1, F11418-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	23.5	94	75-125
100-42-5	Styrene	25	23.8	95	75-125
71-55-6	1,1,1-Trichloroethane	25	23.5	94	75-132
79-34-5	1,1,2,2-Tetrachloroethane	25	23.6	94	75-125
79-00-5	1,1,2-Trichloroethane	25	24.4	98	75-125
120-82-1	1,2,4-Trichlorobenzene	25	19.3	77	75-125
127-18-4	Tetrachloroethylene	25	22.0	88	75-126
108-88-3	Toluene	25	24.2	97	75-125
79-01-6	Trichloroethylene	25	23.2	93	75-125
75-69-4	Trichlorofluoromethane	25	29.1	116	55-162
75-01-4	Vinyl chloride	25	29.9	120	60-147
1330-20-7	Xylene (total)	75	74.8	100	75-125

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	80-120%
2037-26-5	Toluene-D8	106%	80-120%
460-00-4	4-Bromofluorobenzene	103%	80-120%

(a) Advisory control limits.

Method Blank Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC311-MB	C0006584.D	1	11/14/01	JG	n/a	n/a	VC311

The QC reported here applies to the following samples: Method: SW846 8260B

F11418-1, F11418-2

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

Method Blank Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC311-MB	C0006584.D	1	11/14/01	JG	n/a	n/a	VC311

The QC reported here applies to the following samples: Method: SW846 8260B

F11418-1, F11418-2

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	80-120%
2037-26-5	Toluene-D8	108%	80-120%
460-00-4	4-Bromofluorobenzene	108%	80-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11440-6MS	C0006591.D	1	11/14/01	JG	n/a	n/a	VC311
F11440-6MSD	C0006592.D	1	11/14/01	JG	n/a	n/a	VC311
F11440-6	C0006589.D	1	11/14/01	JG	n/a	n/a	VC311

The QC reported here applies to the following samples: Method: SW846 8260B

F11418-1, F11418-2

CAS No.	Compound	F11440-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	131	105	122	98	7	61-125/15
71-43-2	Benzene	5.9		25	32.6	107	31.6	103	3	75-125/15
75-27-4	Bromodichloromethane	ND		25	23.7	95	23.5	94	1	75-125/15
75-25-2	Bromoform	ND		25	19.8	79	20.2	81	2	66-125/15
108-90-7	Chlorobenzene	ND		25	23.5	94	23.5	94	0	75-125/15
75-00-3	Chloroethane	ND		25	27.7	111	27.1	108	2	53-125/15
67-66-3	Chloroform	ND		25	24.1	96	23.6	94	2	75-125/15
75-15-0	Carbon disulfide	ND		125	122	98	116	93	5	51-138/15
56-23-5	Carbon tetrachloride	ND		25	23.1	92	23.2	93	0	74-131/15
110-82-7	Cyclohexane	ND		25	27.0	108	26.3	105	3	50-150/30 [a]
75-34-3	1,1-Dichloroethane	3.9		25	31.3	110	30.0	104	4	75-125/15
75-35-4	1,1-Dichloroethylene	ND		25	27.7	111	26.4	106	5	66-140/15
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	22.7	91	22.5	90	1	57-125/15
106-93-4	1,2-Dibromoethane	ND		25	22.2	89	22.2	89	0	75-125/15
107-06-2	1,2-Dichloroethane	ND		25	24.5	98	23.8	95	3	75-125/15
78-87-5	1,2-Dichloropropane	ND		25	27.6	110	26.9	108	2	75-125/15
124-48-1	Dibromochloromethane	ND		25	21.8	87	22.3	89	2	75-125/15
75-71-8	Dichlorodifluoromethane	ND		25	32.9	132	31.2	125	5	45-182/15
156-59-2	cis-1,2-Dichloroethylene	2.3		25	26.6	97	26.0	95	2	75-136/15
10061-01-5	cis-1,3-Dichloropropene	ND		25	22.3	89	22.2	89	0	71-125/15
541-73-1	m-Dichlorobenzene	ND		25	22.2	89	22.0	88	1	75-125/15
95-50-1	o-Dichlorobenzene	ND		25	21.6	86	21.4	86	1	75-125/15
106-46-7	p-Dichlorobenzene	ND		25	22.4	90	22.2	89	1	75-125/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	26.8	107	25.7	103	4	73-125/15
10061-02-6	trans-1,3-Dichloropropene	ND		25	22.2	89	22.2	89	0	62-125/15
100-41-4	Ethylbenzene	ND		25	25.2	101	24.8	99	2	75-125/15
76-13-1	Freon 113	ND		25	24.4	98	23.4	94	4	69-131/15
591-78-6	2-Hexanone	ND		125	148	118	144	115	3	71-125/15
98-82-8	Isopropylbenzene	1.6	J	25	26.6	100	26.7	100	0	74-125/15
108-10-1	4-Methyl-2-pentanone	ND		125	142	114	138	110	3	75-125/15
79-20-9	Methyl Acetate	ND		125	138	110	132	106	4	50-150/30 [a]
74-83-9	Methyl bromide	ND		25	27.5	110	26.4	106	4	67-146/15
74-87-3	Methyl chloride	ND		25	32.0	128	30.2	121	6	47-160/15
108-87-2	Methylcyclohexane	ND		25	25.5	102	25.0	100	2	50-150/30 [a]
75-09-2	Methylene chloride	ND		25	27.0	108	25.1	100	7	69-125/15
78-93-3	Methyl ethyl ketone	ND		125	127	102	122	98	4	70-125/15

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11440-6MS	C0006591.D	1	11/14/01	JG	n/a	n/a	VC311
F11440-6MSD	C0006592.D	1	11/14/01	JG	n/a	n/a	VC311
F11440-6	C0006589.D	1	11/14/01	JG	n/a	n/a	VC311

The QC reported here applies to the following samples: Method: SW846 8260B

F11418-1, F11418-2

CAS No.	Compound	F11440-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	ND		25	24.0	96	24.0	96	0	75-125/15
100-42-5	Styrene	ND		25	24.8	99	24.1	96	3	69-126/15
71-55-6	1,1,1-Trichloroethane	ND		25	23.9	96	23.9	96	0	75-131/15
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	24.3	97	24.4	98	0	75-125/15
79-00-5	1,1,2-Trichloroethane	ND		25	24.8	99	24.9	100	0	75-125/15
120-82-1	1,2,4-Trichlorobenzene	ND		25	21.4	86	20.5	82	4	74-125/15
127-18-4	Tetrachloroethylene	ND		25	22.7	91	22.4	90	1	75-125/15
108-88-3	Toluene	ND		25	25.1	100	24.6	98	2	75-125/15
79-01-6	Trichloroethylene	ND		25	23.8	95	23.4	94	2	75-125/15
75-69-4	Trichlorofluoromethane	ND		25	29.0	116	27.3	109	6	60-139/3
75-01-4	Vinyl chloride	ND		25	31.3	125	29.8	119	5	52-169/
1330-20-7	Xylene (total)	ND		75	78.5	105	76.5	102	2	75-125/15

CAS No.	Surrogate Recoveries	MS	MSD	F11440-6	Limits
1868-53-7	Dibromofluoromethane	97%	98%	96%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	104%	106%	80-120%
2037-26-5	Toluene-D8	107%	107%	109%	80-120%
460-00-4	4-Bromofluorobenzene	104%	107%	108%	80-120%

(a) Advisory control limits.

Volatile Surrogate Recovery Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F11418-1	C0006593.D	98.0	104.0	107.0	109.0
F11418-2	C0006594.D	96.0	104.0	109.0	110.0
F11440-6MS	C0006591.D	97.0	104.0	107.0	104.0
F11440-6MSD	C0006592.D	98.0	104.0	107.0	107.0
VC311-BS	C0006583.D	98.0	104.0	106.0	103.0
VC311-MB	C0006584.D	97.0	105.0	108.0	108.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Blank Spike Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4151-BS	L009464.D	1	11/09/01	ME	11/08/01	OP4151	SL544

The QC reported here applies to the following samples: Method: SW846 8270C

F11418-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-57-8	2-Chlorophenol	50	36.1	72	60-125
59-50-7	4-Chloro-3-methyl phenol	50	42.1	84	70-125
120-83-2	2,4-Dichlorophenol	50	37.6	75	68-125
105-67-9	2,4-Dimethylphenol	50	28.5	57	42-125
51-28-5	2,4-Dinitrophenol	50	48.8	98	10-125
534-52-1	4,6-Dinitro-o-cresol	50	38.4	77	46-125
95-48-7	2-Methylphenol	50	35.3	71	51-125
	3&4-Methylphenol	100	71.8	72	46-125
88-75-5	2-Nitrophenol	50	37.5	75	64-125
100-02-7	4-Nitrophenol	50	27.0	54	17-125
87-86-5	Pentachlorophenol	50	49.0	98	60-125
108-95-2	Phenol	50	22.5	45	16-125
95-95-4	2,4,5-Trichlorophenol	50	43.2	86	74-125
88-06-2	2,4,6-Trichlorophenol	50	40.8	82	70-125
83-32-9	Acenaphthene	50	41.9	84	70-125
208-96-8	Acenaphthylene	50	47.7	95	75-125
120-12-7	Anthracene	50	48.2	96	75-125
56-55-3	Benzo(a)anthracene	50	46.2	92	75-125
50-32-8	Benzo(a)pyrene	50	49.4	99	75-125
205-99-2	Benzo(b)fluoranthene	50	46.2	92	75-125
191-24-2	Benzo(g,h,i)perylene	50	44.5	89	57-135
207-08-9	Benzo(k)fluoranthene	50	46.8	94	75-125
101-55-3	4-Bromophenyl phenyl ether	50	43.9	88	74-125
85-68-7	Butyl benzyl phthalate	50	49.0	98	38-134
91-58-7	2-Chloronaphthalene	50	40.7	81	59-125
106-47-8	4-Chloroaniline	50	40.4	81	31-125
86-74-8	Carbazole	50	47.4	95	75-125
218-01-9	Chrysene	50	44.6	89	75-125
111-91-1	bis(2-Chloroethoxy)methane	50	40.1	80	64-125
111-44-4	bis(2-Chloroethyl)ether	50	38.0	76	62-125
108-60-1	bis(2-Chloroisopropyl)ether	50	37.8	76	60-125
7005-72-3	4-Chlorophenyl phenyl ether	50	45.5	91	75-125
121-14-2	2,4-Dinitrotoluene	50	48.9	98	73-125
606-20-2	2,6-Dinitrotoluene	50	49.8	100	75-125
91-94-1	3,3'-Dichlorobenzidine	50	40.5	81	55-125
53-70-3	Dibenzo(a,h)anthracene	50	42.8	86	64-130

Blank Spike Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4151-BS	L009464.D	1	11/09/01	ME	11/08/01	OP4151	SL544

The QC reported here applies to the following samples: Method: SW846 8270C

F11418-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
132-64-9	Dibenzofuran	50	42.1	84	73-125
84-74-2	Di-n-butyl phthalate	50	49.0	98	47-140
117-84-0	Di-n-octyl phthalate	50	54.6	109	52-125
84-66-2	Diethyl phthalate	50	50.0	100	59-125
131-11-3	Dimethyl phthalate	50	47.4	95	24-142
117-81-7	bis(2-Ethylhexyl)phthalate	50	53.7	107	71-125
206-44-0	Fluoranthene	50	48.3	97	75-125
86-73-7	Fluorene	50	46.1	92	75-125
118-74-1	Hexachlorobenzene	50	46.6	93	74-125
87-68-3	Hexachlorobutadiene	50	31.1	62	22-125
77-47-4	Hexachlorocyclopentadiene	50	24.1	48	10-125
67-72-1	Hexachloroethane	50	33.6	67	23-125
193-39-5	Indeno(1,2,3-cd)pyrene	50	43.4	87	53-130
78-59-1	Isophorone	50	42.0	84	63-125
91-57-6	2-Methylnaphthalene	50	36.4	73	51-125
88-74-4	2-Nitroaniline	50	47.2	94	75-125
99-09-2	3-Nitroaniline	50	41.8	84	62-125
100-01-6	4-Nitroaniline	50	45.9	92	67-125
91-20-3	Naphthalene	50	37.5	75	53-125
98-95-3	Nitrobenzene	50	39.7	79	67-125
621-64-7	N-Nitroso-di-n-propylamine	50	40.4	81	61-125
86-30-6	N-Nitrosodiphenylamine	50	50.5	101	75-125
85-01-8	Phenanthrene	50	45.7	91	75-125
129-00-0	Pyrene	50	46.6	93	67-125

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	59%	20-125%
4165-62-2	Phenol-d5	44%	10-125%
118-79-6	2,4,6-Tribromophenol	93%	35-140%
4165-60-0	Nitrobenzene-d5	81%	46-125%
321-60-8	2-Fluorobiphenyl	83%	46-125%
1718-51-0	Terphenyl-d14	98%	49-126%

Method Blank Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4151-MB	L009465.D	1	11/09/01	ME	11/08/01	OP4151	SL544

The QC reported here applies to the following samples: Method: SW846 8270C

F11418-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

Method Blank Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4151-MB	L009465.D	1	11/09/01	ME	11/08/01	OP4151	SL544

The QC reported here applies to the following samples: Method: SW846 8270C

F11418-1

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	53%	20-125%
4165-62-2	Phenol-d5	41%	10-125%
118-79-6	2,4,6-Tribromophenol	66%	35-140%

Method Blank Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4151-MB	L009465.D	1	11/09/01	ME	11/08/01	OP4151	SL544

The QC reported here applies to the following samples: Method: SW846 8270C

F11418-1

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	65%	46-125%
321-60-8	2-Fluorobiphenyl	68%	46-125%
1718-51-0	Terphenyl-d14	76%	49-126%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4151-MS	L009472.D	1	11/09/01	ME	11/08/01	OP4151	SL544
OP4151-MSD	L009473.D	1	11/09/01	ME	11/08/01	OP4151	SL544
F11413-12	L009471.D	1	11/09/01	ME	11/08/01	OP4151	SL544

The QC reported here applies to the following samples: Method: SW846 8270C

F11418-1

CAS No.	Compound	F11413-12 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		100	67.3	67	67.9	68	1	59-125/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	86.4	86	82.0	82	5	72-125/20
120-83-2	2,4-Dichlorophenol	ND		100	74.6	75	75.4	75	1	65-125/20
105-67-9	2,4-Dimethylphenol	ND		100	56.1	56	61.4	61	9	37-125/20
51-28-5	2,4-Dinitrophenol	ND		100	103	103	101	101	2	27-125/41
534-52-1	4,6-Dinitro-o-cresol	ND		100	72.2	72	75.4	75	4	54-125/20
95-48-7	2-Methylphenol	ND		100	69.6	70	69.0	69	1	57-125/20
	3&4-Methylphenol	ND		200	150	75	145	72	3	55-125/20
88-75-5	2-Nitrophenol	ND		100	71.1	71	70.8	71	0	67-125/20
100-02-7	4-Nitrophenol	ND		100	66.3	66	60.6	61	9	41-125/23
87-86-5	Pentachlorophenol	ND		100	110	110	107	107	3	67-126/20
108-95-2	Phenol	ND		100	52.8	53	51.0	51	3	39-125/20
95-95-4	2,4,5-Trichlorophenol	ND		100	84.2	84	83.2	83	1	75-125/20
88-06-2	2,4,6-Trichlorophenol	ND		100	78.7	79	79.0	79	0	70-125/20
83-32-9	Acenaphthene	ND		100	79.9	80	78.5	78	2	74-125/20
208-96-8	Acenaphthylene	ND		100	90.7	91	88.3	88	3	75-125/20
120-12-7	Anthracene	ND		100	88.9	89	87.7	88	1	75-125/20
56-55-3	Benzo(a)anthracene	ND		100	87.0	87	86.0	86	1	75-125/20
50-32-8	Benzo(a)pyrene	ND		100	95.3	95	94.1	94	1	75-125/20
205-99-2	Benzo(b)fluoranthene	ND		100	87.5	88	87.3	87	0	75-125/20
191-24-2	Benzo(g,h,i)perylene	ND		100	93.0	93	91.3	91	2	61-125/21
207-08-9	Benzo(k)fluoranthene	ND		100	87.0	87	89.1	89	2	75-125/20
101-55-3	4-Bromophenyl phenyl ether	ND		100	83.3	83	85.9	86	3	73-125/20
85-68-7	Butyl benzyl phthalate	ND		100	96.0	96	91.4	91	5	66-125/20
91-58-7	2-Chloronaphthalene	ND		100	76.6	77	76.2	76	0	64-125/20
106-47-8	4-Chloroaniline	ND		100	78.3	78	74.8	75	4	44-125/20
86-74-8	Carbazole	ND		100	88.8	89	86.8	87	2	75-125/20
218-01-9	Chrysene	ND		100	84.3	84	84.3	84	0	75-125/20
111-91-1	bis(2-Chloroethoxy)methane	ND		100	74.5	74	74.0	74	1	62-125/20
111-44-4	bis(2-Chloroethyl)ether	ND		100	70.6	71	69.2	69	2	61-125/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		100	68.9	69	67.8	68	2	56-125/22
7005-72-3	4-Chlorophenyl phenyl ether	ND		100	85.5	86	84.1	84	2	75-125/20
121-14-2	2,4-Dinitrotoluene	ND		100	95.9	96	92.6	93	4	75-125/20
606-20-2	2,6-Dinitrotoluene	ND		100	95.5	96	91.9	92	4	75-125/20
91-94-1	3,3'-Dichlorobenzidine	ND		100	58.2	58	54.0	54	7	20-125/29
53-70-3	Dibenzo(a,h)anthracene	ND		100	90.4	90	89.0	89	2	64-127/20

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4151-MS	L009472.D	1	11/09/01	ME	11/08/01	OP4151	SL544
OP4151-MSD	L009473.D	1	11/09/01	ME	11/08/01	OP4151	SL544
F11413-12	L009471.D	1	11/09/01	ME	11/08/01	OP4151	SL544

The QC reported here applies to the following samples: Method: SW846 8270C

F11418-1

CAS No.	Compound	F11413-12 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
132-64-9	Dibenzofuran	ND		100	82.4	82	80.7	81	2	73-125/20
84-74-2	Di-n-butyl phthalate	ND		100	94.8	95	90.2	90	5	71-125/20
117-84-0	Di-n-octyl phthalate	ND		100	103	103	99.1	99	4	66-125/30
84-66-2	Diethyl phthalate	ND		100	95.8	96	90.7	91	5	64-125/20
131-11-3	Dimethyl phthalate	ND		100	89.5	90	85.6	86	4	32-139/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		100	105	105	99.9	100	5	74-125/20
206-44-0	Fluoranthene	ND		100	91.0	91	86.9	87	5	75-125/20
86-73-7	Fluorene	ND		100	90.0	90	87.0	87	3	75-125/20
118-74-1	Hexachlorobenzene	ND		100	84.5	84	83.5	84	1	75-125/20
87-68-3	Hexachlorobutadiene	ND		100	57.5	58	57.6	58	0	26-125/2
77-47-4	Hexachlorocyclopentadiene	ND		100	47.8	48	52.7	53	10	18-125/2
67-72-1	Hexachloroethane	ND		100	59.4	59	61.3	61	3	22-125/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		100	92.2	92	91.3	91	1	54-125/20
78-59-1	Isophorone	ND		100	81.3	81	79.5	80	2	62-125/20
91-57-6	2-Methylnaphthalene	ND		100	73.5	74	72.4	72	2	58-125/20
88-74-4	2-Nitroaniline	ND		100	86.0	86	86.7	87	1	67-125/20
99-09-2	3-Nitroaniline	ND		100	78.0	78	72.5	72	7	53-125/20
100-01-6	4-Nitroaniline	ND		100	91.3	91	82.4	82	10	63-125/20
91-20-3	Naphthalene	ND		100	72.6	73	73.1	73	1	55-125/20
98-95-3	Nitrobenzene	ND		100	74.3	74	72.5	72	2	63-125/20
621-64-7	N-Nitroso-di-n-propylamine	ND		100	78.4	78	75.3	75	4	58-125/20
86-30-6	N-Nitrosodiphenylamine	ND		100	94.1	94	92.9	93	1	75-125/20
85-01-8	Phenanthrene	ND		100	85.4	85	84.1	84	2	75-125/20
129-00-0	Pyrene	ND		100	84.1	84	83.0	83	1	67-125/20

CAS No.	Surrogate Recoveries	MS	MSD	F11413-12	Limits
367-12-4	2-Fluorophenol	62%	61%	47%	20-125%
4165-62-2	Phenol-d5	51%	49%	33%	10-125%
118-79-6	2,4,6-Tribromophenol	86%	86%	83%	35-140%
4165-60-0	Nitrobenzene-d5	75%	75%	72%	46-125%
321-60-8	2-Fluorobiphenyl	76%	78%	72%	46-125%
1718-51-0	Terphenyl-d14	90%	88%	91%	49-126%

Semivolatile Surrogate Recovery Summary

Job Number: F11418
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
F11418-1	L009484.D	45.0	31.0	76.0	70.0	70.0	98.0
OP4151-BS	L009464.D	59.0	44.0	93.0	81.0	83.0	98.0
OP4151-MB	L009465.D	53.0	41.0	66.0	65.0	68.0	76.0
OP4151-MS	L009472.D	62.0	51.0	86.0	75.0	76.0	90.0
OP4151-MSD	L009473.D	61.0	49.0	86.0	75.0	78.0	88.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	20-125%
S2 = Phenol-d5	10-125%
S3 = 2,4,6-Tribromophenol	35-140%
S4 = Nitrobenzene-d5	46-125%
S5 = 2-Fluorobiphenyl	46-125%
S6 = Terphenyl-d14	49-126%

CHAIN OF CUSTODY

ACCUTEST
4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #: F11418
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: KUBAL-FURR + ASSOCIATES
ADDRESS: PO BOX 80247
CITY, STATE, ZIP: SIMPSONVILLE SC 29680
SEND REPORT TO: DIANE ROSSETTER
PHONE #: (864) 962-9490 -VOICE

FACILITY INFORMATION

PROJECT NAME: OMNI - OAK HAMMOCK
LOCATION: HOLOPAW, FL
PROJECT NO.: 480H01
FAX #: (864) 962-5309

ANALYTICAL INFORMATION

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	VOCs	SVOCs	LAB USE ONLY
1)	PRECISION MOBIL COMBO RIG	11/5/01	~~1220~~ 1310	GK		5	X					✓	✓	
2)	TRIP BLANK	"				3	X					✓		

DATA TURNAROUND INFORMATION

- [X] STANDARD
- [ ] 48 HOUR RUSH
- [ ] 24 HOUR EMERGENCY
- [ ] OTHER _____

APPROVED BY: _____

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY) _____

COMMENTS/REMARKS

SEE TASK ORDER # 480H01
TCL VOCs, TCL SVOCs
EXTENDED TCL LIST AS IN OLM04.2

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. Gregory L. Lewis	11/6/01	1. SECURE AREA	2.		2. 11/6/01-1500
RELINQUISHED BY: 3.	DATE TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE 4.0 °C

Southeast
ACCUTEST.

11/28/01

Technical Report for

Kubal-Furr & Associates

Omni-Oak Hammock

48OH01 HOLOPAW,FL

Accutest Job Number: F11446

Report to:

Kubal-Furr & Associates

Drosseter@ix.netcom.com

ATTN: Diane Rosseter

Total number of pages in report: 8

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

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Sample Summary

Kubal-Furr & Associates

Job No: F11446

Omni-Oak Hammock
Project No: 48OH01 HOLOPAW,FL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
F11446-1	11/07/01	08:00	GK	11/08/01	AQ	Ground Water	GANNARELLI RANCH WELL
F11446-2	11/07/01	00:00	GK	11/08/01	AQ	Trip Blank Water	TRIP BLANK

Report of Analysis

Client Sample ID:	GANNARELLI RANCH WELL		
Lab Sample ID:	F11446-1	Date Sampled:	11/07/01
Matrix:	AQ - Ground Water	Date Received:	11/08/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0006682.D	1	11/20/01	JG	n/a	n/a	VC316
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GANNARELLI RANCH WELL		
Lab Sample ID:	F11446-1	Date Sampled:	11/07/01
Matrix:	AQ - Ground Water	Date Received:	11/08/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	103%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GANNARELLI RANCH WELL		
Lab Sample ID:	F11446-1	Date Sampled:	11/07/01
Matrix:	AQ - Ground Water	Date Received:	11/08/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009552.D	1	11/15/01	ME	11/14/01	OP4190	SL548
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GANNARELLI RANCH WELL		
Lab Sample ID:	F11446-1	Date Sampled:	11/07/01
Matrix:	AQ - Ground Water	Date Received:	11/08/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	48%		20-125%
4165-62-2	Phenol-d5	33%		10-125%
118-79-6	2,4,6-Tribromophenol	96%		35-140%
4165-60-0	Nitrobenzene-d5	86%		46-125%
321-60-8	2-Fluorobiphenyl	85%		46-125%
1718-51-0	Terphenyl-d14	93%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F11446-2	Date Sampled:	11/07/01
Matrix:	AQ - Trip Blank Water	Date Received:	11/08/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0006683.D	1	11/20/01	JG	n/a	n/a	VC316
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F11446-2	Date Sampled:	11/07/01
Matrix:	AQ - Trip Blank Water	Date Received:	11/08/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Blank Spike Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC316-BS2	C0006679.D	1	11/20/01	JG	n/a	n/a	VC316

The QC reported here applies to the following samples: Method: SW846 8260B

F11446-1, F11446-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	130	104	67-125
71-43-2	Benzene	25	23.0	92	75-125
75-27-4	Bromodichloromethane	25	22.8	91	75-125
75-25-2	Bromoform	25	22.8	91	72-125
108-90-7	Chlorobenzene	25	22.8	91	75-125
75-00-3	Chloroethane	25	28.3	113	58-136
67-66-3	Chloroform	25	23.1	92	75-125
75-15-0	Carbon disulfide	125	107	86	48-142
56-23-5	Carbon tetrachloride	25	25.1	100	75-136
110-82-7	Cyclohexane	25	23.8	95	50-150 [a]
75-34-3	1,1-Dichloroethane	25	23.3	93	75-125
75-35-4	1,1-Dichloroethylene	25	23.7	95	67-138
96-12-8	1,2-Dibromo-3-chloropropane	25	22.4	90	64-125
106-93-4	1,2-Dibromoethane	25	22.0	88	75-125
107-06-2	1,2-Dichloroethane	25	21.3	85	75-125
78-87-5	1,2-Dichloropropane	25	24.0	96	75-125
124-48-1	Dibromochloromethane	25	22.9	92	75-125
75-71-8	Dichlorodifluoromethane	25	32.8	131	48-171
156-59-2	cis-1,2-Dichloroethylene	25	23.2	93	75-129
10061-01-5	cis-1,3-Dichloropropene	25	21.6	86	75-125
541-73-1	m-Dichlorobenzene	25	22.4	90	75-125
95-50-1	o-Dichlorobenzene	25	22.1	88	75-125
106-46-7	p-Dichlorobenzene	25	22.4	90	75-125
156-60-5	trans-1,2-Dichloroethylene	25	22.7	91	73-125
10061-02-6	trans-1,3-Dichloropropene	25	21.4	86	75-125
100-41-4	Ethylbenzene	25	22.3	89	68-135
76-13-1	Freon 113	25	23.9	96	75-125
591-78-6	2-Hexanone	125	113	90	68-125
98-82-8	Isopropylbenzene	25	23.1	92	75-125
108-10-1	4-Methyl-2-pentanone	125	109	87	75-125
79-20-9	Methyl Acetate	125	109	87	50-150 [a]
74-83-9	Methyl bromide	25	22.5	90	59-146
74-87-3	Methyl chloride	25	25.0	100	50-142
108-87-2	Methylcyclohexane	25	24.5	98	50-150 [a]
75-09-2	Methylene chloride	25	21.8	87	69-125
78-93-3	Methyl ethyl ketone	125	119	95	70-125

Blank Spike Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC316-BS2	C0006679.D	1	11/20/01	JG	n/a	n/a	VC316

The QC reported here applies to the following samples: Method: SW846 8260B

F11446-1, F11446-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	22.7	91	75-125
100-42-5	Styrene	25	23.0	92	75-125
71-55-6	1,1,1-Trichloroethane	25	24.4	98	75-132
79-34-5	1,1,2,2-Tetrachloroethane	25	21.1	84	75-125
79-00-5	1,1,2-Trichloroethane	25	22.0	88	75-125
120-82-1	1,2,4-Trichlorobenzene	25	22.7	91	75-125
127-18-4	Tetrachloroethylene	25	23.9	96	75-126
108-88-3	Toluene	25	22.8	91	75-125
79-01-6	Trichloroethylene	25	23.4	94	75-125
75-69-4	Trichlorofluoromethane	25	34.1	136	55-162
75-01-4	Vinyl chloride	25	27.6	110	60-147
1330-20-7	Xylene (total)	75	69.6	93	75-125

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	99%	80-120%
2037-26-5	Toluene-D8	100%	80-120%
460-00-4	4-Bromofluorobenzene	97%	80-120%

(a) Advisory control limits.

Method Blank Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC316-MB2	C0006680.D	1	11/20/01	JG	n/a	n/a	VC316

The QC reported here applies to the following samples: Method: SW846 8260B

F11446-1, F11446-2

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

Method Blank Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC316-MB2	C0006680.D	1	11/20/01	JG	n/a	n/a	VC316

The QC reported here applies to the following samples: Method: SW846 8260B

F11446-1, F11446-2

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	99%	80-120%
2037-26-5	Toluene-D8	100%	80-120%
460-00-4	4-Bromofluorobenzene	102%	80-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T2031-8MS	C0006690.D	1	11/20/01	JG	n/a	n/a	VC316
T2031-8MSD	C0006691.D	1	11/20/01	JG	n/a	n/a	VC316
T2031-8	C0006685.D	1	11/20/01	JG	n/a	n/a	VC316

The QC reported here applies to the following samples: Method: SW846 8260B

F11446-1, F11446-2

CAS No.	Compound	T2031-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	116	93	118	94	2	61-125/15
71-43-2	Benzene	ND		25	23.5	94	23.4	94	0	75-125/15
75-27-4	Bromodichloromethane	ND		25	22.1	88	22.1	88	0	75-125/15
75-25-2	Bromoform	ND		25	21.3	85	21.3	85	0	66-125/15
108-90-7	Chlorobenzene	ND		25	23.0	92	22.6	90	2	75-125/15
75-00-3	Chloroethane	ND		25	30.9	124	30.0	120	3	53-125/15
67-66-3	Chloroform	ND		25	23.0	92	23.2	93	1	75-125/15
75-15-0	Carbon disulfide	ND		125	108	86	107	86	1	51-138/15
56-23-5	Carbon tetrachloride	ND		25	23.4	94	23.5	94	0	74-131/15
110-82-7	Cyclohexane	ND		25	24.0	96	23.9	96	0	50-150/30 [a]
75-34-3	1,1-Dichloroethane	ND		25	23.9	96	24.0	96	0	75-125/15
75-35-4	1,1-Dichloroethylene	ND		25	24.0	96	23.8	95	1	66-140/15
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	21.0	84	20.5	82	2	57-125/15
106-93-4	1,2-Dibromoethane	ND		25	21.6	86	21.6	86	0	75-125/15
107-06-2	1,2-Dichloroethane	ND		25	20.9	84	21.1	84	1	75-125/15
78-87-5	1,2-Dichloropropane	ND		25	24.8	99	24.1	96	3	75-125/15
124-48-1	Dibromochloromethane	ND		25	21.9	88	21.8	87	0	75-125/15
75-71-8	Dichlorodifluoromethane	ND		25	30.3	121	32.4	130	7	45-182/15
156-59-2	cis-1,2-Dichloroethylene	1.2	J	25	24.7	94	24.6	94	0	75-136/15
10061-01-5	cis-1,3-Dichloropropene	ND		25	21.3	85	21.3	85	0	71-125/15
541-73-1	m-Dichlorobenzene	ND		25	22.0	88	22.0	88	0	75-125/15
95-50-1	o-Dichlorobenzene	ND		25	21.8	87	21.7	87	0	75-125/15
106-46-7	p-Dichlorobenzene	ND		25	22.4	90	22.3	89	0	75-125/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	23.2	93	23.2	93	0	73-125/15
10061-02-6	trans-1,3-Dichloropropene	ND		25	20.3	81	20.6	82	1	62-125/15
100-41-4	Ethylbenzene	ND		25	22.2	89	22.2	89	0	75-125/15
76-13-1	Freon 113	ND		25	23.3	93	23.9	96	2	69-131/15
591-78-6	2-Hexanone	ND		125	119	95	118	94	1	71-125/15
98-82-8	Isopropylbenzene	ND		25	22.7	91	22.6	90	0	74-125/15
108-10-1	4-Methyl-2-pentanone	ND		125	118	94	117	94	1	75-125/15
79-20-9	Methyl Acetate	ND		125	116	93	116	93	0	50-150/30 [a]
74-83-9	Methyl bromide	ND		25	25.1	100	24.5	98	2	67-146/15
74-87-3	Methyl chloride	ND		25	26.8	107	27.2	109	1	47-160/15
108-87-2	Methylcyclohexane	ND		25	23.7	95	23.4	94	1	50-150/30 [a]
75-09-2	Methylene chloride	ND		25	23.0	92	22.7	91	1	69-125/15
78-93-3	Methyl ethyl ketone	ND		125	114	91	115	92	1	70-125/15

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T2031-8MS	C0006690.D	1	11/20/01	JG	n/a	n/a	VC316
T2031-8MSD	C0006691.D	1	11/20/01	JG	n/a	n/a	VC316
T2031-8	C0006685.D	1	11/20/01	JG	n/a	n/a	VC316

The QC reported here applies to the following samples: Method: SW846 8260B

F11446-1, F11446-2

CAS No.	Compound	T2031-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	ND		25	22.3	89	22.4	90	0	75-125/15
100-42-5	Styrene	ND		25	23.3	93	23.2	93	0	69-126/15
71-55-6	1,1,1-Trichloroethane	ND		25	23.4	94	23.4	94	0	75-131/15
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	21.6	86	21.4	86	1	75-125/15
79-00-5	1,1,2-Trichloroethane	ND		25	22.3	89	22.4	90	0	75-125/15
120-82-1	1,2,4-Trichlorobenzene	ND		25	20.8	83	20.9	84	0	74-125/15
127-18-4	Tetrachloroethylene	ND		25	24.1	96	23.8	95	1	75-125/15
108-88-3	Toluene	ND		25	23.1	92	22.8	91	1	75-125/15
79-01-6	Trichloroethylene	ND		25	23.0	92	23.0	92	0	75-125/15
75-69-4	Trichlorofluoromethane	ND		25	32.8	131	31.9	128	3	60-139/30
75-01-4	Vinyl chloride	ND		25	29.5	118	30.1	120	2	52-169/1
1330-20-7	Xylene (total)	ND		75	69.2	92	69.3	92	0	75-125/15

CAS No.	Surrogate Recoveries	MS	MSD	T2031-8	Limits
1868-53-7	Dibromofluoromethane	100%	100%	98%	80-120%
17060-07-0	1,2-Dichloroethane-D4	96%	96%	99%	80-120%
2037-26-5	Toluene-D8	99%	99%	100%	80-120%
460-00-4	4-Bromofluorobenzene	96%	95%	101%	80-120%

(a) Advisory control limits.

Volatile Surrogate Recovery Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F11446-1	C0006682.D	100.0	100.0	100.0	103.0
F11446-2	C0006683.D	101.0	101.0	100.0	101.0
T2031-8MS	C0006690.D	100.0	96.0	99.0	96.0
T2031-8MSD	C0006691.D	100.0	96.0	99.0	95.0
VC316-BS2	C0006679.D	101.0	99.0	100.0	97.0
VC316-MB2	C0006680.D	100.0	99.0	100.0	102.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Blank Spike Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4190-BS	L009549.D	1	11/15/01	ME	11/14/01	OP4190	SL548

The QC reported here applies to the following samples: Method: SW846 8270C

F11446-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-57-8	2-Chlorophenol	50	43.4	87	60-125
59-50-7	4-Chloro-3-methyl phenol	50	43.9	88	70-125
120-83-2	2,4-Dichlorophenol	50	44.2	88	68-125
105-67-9	2,4-Dimethylphenol	50	36.3	73	42-125
51-28-5	2,4-Dinitrophenol	50	62.9	126*	10-125
534-52-1	4,6-Dinitro-o-cresol	50	48.2	96	46-125
95-48-7	2-Methylphenol	50	40.2	80	51-125
	3&4-Methylphenol	100	78.1	78	46-125
88-75-5	2-Nitrophenol	50	46.2	92	64-125
100-02-7	4-Nitrophenol	50	25.3	51	17-125
87-86-5	Pentachlorophenol	50	61.1	122	60-125
108-95-2	Phenol	50	23.7	47	16-125
95-95-4	2,4,5-Trichlorophenol	50	50.1	100	74-125
88-06-2	2,4,6-Trichlorophenol	50	49.3	99	70-125
83-32-9	Acenaphthene	50	46.5	93	70-125
208-96-8	Acenaphthylene	50	52.6	105	75-125
120-12-7	Anthracene	50	48.7	97	75-125
56-55-3	Benzo(a)anthracene	50	48.7	97	75-125
50-32-8	Benzo(a)pyrene	50	57.2	114	75-125
205-99-2	Benzo(b)fluoranthene	50	53.1	106	75-125
191-24-2	Benzo(g,h,i)perylene	50	48.6	97	57-135
207-08-9	Benzo(k)fluoranthene	50	52.5	105	75-125
101-55-3	4-Bromophenyl phenyl ether	50	49.0	98	74-125
85-68-7	Butyl benzyl phthalate	50	51.8	104	38-134
91-58-7	2-Chloronaphthalene	50	48.0	96	59-125
106-47-8	4-Chloroaniline	50	46.0	92	31-125
86-74-8	Carbazole	50	46.4	93	75-125
218-01-9	Chrysene	50	47.4	95	75-125
111-91-1	bis(2-Chloroethoxy)methane	50	45.4	91	64-125
111-44-4	bis(2-Chloroethyl)ether	50	44.1	88	62-125
108-60-1	bis(2-Chloroisopropyl)ether	50	43.3	87	60-125
7005-72-3	4-Chlorophenyl phenyl ether	50	48.6	97	75-125
121-14-2	2,4-Dinitrotoluene	50	48.8	98	73-125
606-20-2	2,6-Dinitrotoluene	50	50.2	100	75-125
91-94-1	3,3'-Dichlorobenzidine	50	46.9	94	55-125
53-70-3	Dibenzo(a,h)anthracene	50	50.1	100	64-130

Blank Spike Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4190-BS	L009549.D	1	11/15/01	ME	11/14/01	OP4190	SL548

The QC reported here applies to the following samples: Method: SW846 8270C

F11446-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
132-64-9	Dibenzofuran	50	46.5	93	73-125
84-74-2	Di-n-butyl phthalate	50	48.3	97	47-140
117-84-0	Di-n-octyl phthalate	50	59.7	119	52-125
84-66-2	Diethyl phthalate	50	47.9	96	59-125
131-11-3	Dimethyl phthalate	50	47.4	95	24-142
117-81-7	bis(2-Ethylhexyl)phthalate	50	53.8	108	71-125
206-44-0	Fluoranthene	50	47.2	94	75-125
86-73-7	Fluorene	50	48.6	97	75-125
118-74-1	Hexachlorobenzene	50	47.5	95	74-125
87-68-3	Hexachlorobutadiene	50	39.1	78	22-125
77-47-4	Hexachlorocyclopentadiene	50	38.7	77	10-125
67-72-1	Hexachloroethane	50	42.6	85	23-125
193-39-5	Indeno(1,2,3-cd)pyrene	50	53.2	106	53-130
78-59-1	Isophorone	50	46.2	92	63-125
91-57-6	2-Methylnaphthalene	50	42.1	84	51-125
88-74-4	2-Nitroaniline	50	48.6	97	75-125
99-09-2	3-Nitroaniline	50	44.7	89	62-125
100-01-6	4-Nitroaniline	50	45.4	91	67-125
91-20-3	Naphthalene	50	45.0	90	53-125
98-95-3	Nitrobenzene	50	47.6	95	67-125
621-64-7	N-Nitroso-di-n-propylamine	50	44.7	89	61-125
86-30-6	N-Nitrosodiphenylamine	50	51.2	102	75-125
85-01-8	Phenanthrene	50	45.3	91	75-125
129-00-0	Pyrene	50	47.4	95	67-125

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	70%	20-125%
4165-62-2	Phenol-d5	46%	10-125%
118-79-6	2,4,6-Tribromophenol	94%	35-140%
4165-60-0	Nitrobenzene-d5	95%	46-125%
321-60-8	2-Fluorobiphenyl	97%	46-125%
1718-51-0	Terphenyl-d14	97%	49-126%

Method Blank Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4190-MB	L009550.D	1	11/15/01	ME	11/14/01	OP4190	SL548

The QC reported here applies to the following samples: Method: SW846 8270C

F11446-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

Method Blank Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4190-MB	L009550.D	1	11/15/01	ME	11/14/01	OP4190	SL548

The QC reported here applies to the following samples: Method: SW846 8270C

F11446-1

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	63%	20-125%
4165-62-2	Phenol-d5	43%	10-125%
118-79-6	2,4,6-Tribromophenol	93%	35-140%

Method Blank Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4190-MB	L009550.D	1	11/15/01	ME	11/14/01	OP4190	SL548

The QC reported here applies to the following samples: Method: SW846 8270C

F11446-1

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	92%	46-125%
321-60-8	2-Fluorobiphenyl	88%	46-125%
1718-51-0	Terphenyl-d14	92%	49-126%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4190-MS	L009553.D	1	11/15/01	ME	11/14/01	OP4190	SL548
OP4190-MSD	L009554.D	1	11/15/01	ME	11/14/01	OP4190	SL548
F11446-1	L009552.D	1	11/15/01	ME	11/14/01	OP4190	SL548

The QC reported here applies to the following samples: Method: SW846 8270C

F11446-1

CAS No.	Compound	F11446-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		100	80.4	80	80.2	80	0	59-125/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	90.1	90	91.9	92	2	72-125/20
120-83-2	2,4-Dichlorophenol	ND		100	85.4	85	85.0	85	0	65-125/20
105-67-9	2,4-Dimethylphenol	ND		100	77.6	78	76.0	76	2	37-125/20
51-28-5	2,4-Dinitrophenol	ND		100	131	131*	132	132*	1	27-125/41
534-52-1	4,6-Dinitro-o-cresol	ND		100	105	105	99.0	99	6	54-125/20
95-48-7	2-Methylphenol	ND		100	78.2	78	81.3	81	4	57-125/20
	3&4-Methylphenol	ND		200	160	80	166	83	4	55-125/20
88-75-5	2-Nitrophenol	ND		100	87.4	87	86.6	87	1	67-125/20
100-02-7	4-Nitrophenol	ND		100	68.8	69	67.6	68	2	41-125/23
87-86-5	Pentachlorophenol	ND		100	131	131*	132	132*	1	67-126/20
108-95-2	Phenol	ND		100	53.3	53	57.2	57	7	39-125/20
95-95-4	2,4,5-Trichlorophenol	ND		100	93.7	94	96.7	97	3	75-125/20
88-06-2	2,4,6-Trichlorophenol	ND		100	93.0	93	93.7	94	1	70-125/20
83-32-9	Acenaphthene	ND		100	89.8	90	90.8	91	1	74-125/20
208-96-8	Acenaphthylene	ND		100	99.4	99	102	102	2	75-125/20
120-12-7	Anthracene	ND		100	103	103	97.8	98	5	75-125/20
56-55-3	Benzo(a)anthracene	ND		100	96.6	97	100	100	3	75-125/20
50-32-8	Benzo(a)pyrene	ND		100	114	114	112	112	2	75-125/20
205-99-2	Benzo(b)fluoranthene	ND		100	107	107	103	103	4	75-125/20
191-24-2	Benzo(g,h,i)perylene	ND		100	97.3	97	98.8	99	2	61-125/21
207-08-9	Benzo(k)fluoranthene	ND		100	107	107	104	104	3	75-125/20
101-55-3	4-Bromophenyl phenyl ether	ND		100	106	106	98.6	99	7	73-125/20
85-68-7	Butyl benzyl phthalate	ND		100	107	107	107	107	0	66-125/20
91-58-7	2-Chloronaphthalene	ND		100	89.0	89	86.6	87	3	64-125/20
106-47-8	4-Chloroaniline	ND		100	88.2	88	88.0	88	0	44-125/20
86-74-8	Carbazole	ND		100	99.1	99	95.7	96	3	75-125/20
218-01-9	Chrysene	ND		100	94.1	94	96.5	96	2	75-125/20
111-91-1	bis(2-Chloroethoxy)methane	ND		100	84.4	84	85.3	85	1	62-125/20
111-44-4	bis(2-Chloroethyl)ether	ND		100	80.8	81	80.2	80	1	61-125/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		100	77.2	77	77.4	77	0	56-125/22
7005-72-3	4-Chlorophenyl phenyl ether	ND		100	93.5	94	94.3	94	1	75-125/20
121-14-2	2,4-Dinitrotoluene	ND		100	97.2	97	98.3	98	1	75-125/20
606-20-2	2,6-Dinitrotoluene	ND		100	98.1	98	101	101	3	75-125/20
91-94-1	3,3'-Dichlorobenzidine	ND		100	76.2	76	79.8	80	5	20-125/29
53-70-3	Dibenzo(a,h)anthracene	ND		100	96.4	96	102	102	6	64-127/20

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4190-MS	L009553.D	1	11/15/01	ME	11/14/01	OP4190	SL548
OP4190-MSD	L009554.D	1	11/15/01	ME	11/14/01	OP4190	SL548
F11446-1	L009552.D	1	11/15/01	ME	11/14/01	OP4190	SL548

The QC reported here applies to the following samples: Method: SW846 8270C

F11446-1

CAS No.	Compound	F11446-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
132-64-9	Dibenzofuran	ND		100	91.9	92	91.7	92	0	73-125/20
84-74-2	Di-n-butyl phthalate	ND		100	108	108	105	105	3	71-125/20
117-84-0	Di-n-octyl phthalate	ND		100	129	129*	121	121	6	66-125/30
84-66-2	Diethyl phthalate	ND		100	96.7	97	96.2	96	0	64-125/20
131-11-3	Dimethyl phthalate	ND		100	91.1	91	92.7	93	2	32-139/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		100	113	113	111	111	2	74-125/20
206-44-0	Fluoranthene	ND		100	102	102	98.1	98	4	75-125/20
86-73-7	Fluorene	ND		100	94.6	95	98.2	98	4	75-125/20
118-74-1	Hexachlorobenzene	ND		100	103	103	99.8	100	3	75-125/20
87-68-3	Hexachlorobutadiene	ND		100	71.8	72	69.9	70	3	26-125/2
77-47-4	Hexachlorocyclopentadiene	ND		100	69.8	70	65.1	65	7	18-125/2
67-72-1	Hexachloroethane	ND		100	73.2	73	73.6	74	0	22-125/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		100	102	102	102	102	0	54-125/20
78-59-1	Isophorone	ND		100	89.7	90	90.0	90	0	62-125/20
91-57-6	2-Methylnaphthalene	ND		100	81.9	82	81.6	82	0	58-125/20
88-74-4	2-Nitroaniline	ND		100	90.8	91	92.6	93	2	67-125/20
99-09-2	3-Nitroaniline	ND		100	76.5	76	79.8	80	4	53-125/20
100-01-6	4-Nitroaniline	ND		100	83.6	84	87.5	88	4	63-125/20
91-20-3	Naphthalene	ND		100	82.7	83	83.5	84	1	55-125/20
98-95-3	Nitrobenzene	ND		100	86.9	87	86.2	86	1	63-125/20
621-64-7	N-Nitroso-di-n-propylamine	ND		100	84.6	85	86.1	86	2	58-125/20
86-30-6	N-Nitrosodiphenylamine	ND		100	107	107	104	104	3	75-125/20
85-01-8	Phenanthrene	ND		100	100	100	94.8	95	5	75-125/20
129-00-0	Pyrene	ND		100	95.5	96	94.4	94	1	67-125/20

CAS No.	Surrogate Recoveries	MS	MSD	F11446-1	Limits
367-12-4	2-Fluorophenol	68%	70%	48%	20-125%
4165-62-2	Phenol-d5	52%	55%	33%	10-125%
118-79-6	2,4,6-Tribromophenol	103%	95%	96%	35-140%
4165-60-0	Nitrobenzene-d5	83%	84%	86%	46-125%
321-60-8	2-Fluorobiphenyl	88%	86%	85%	46-125%
1718-51-0	Terphenyl-d14	101%	97%	93%	49-126%

Semivolatile Surrogate Recovery Summary

Job Number: F11446
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
F11446-1	L009552.D	48.0	33.0	96.0	86.0	85.0	93.0
OP4190-BS	L009549.D	70.0	46.0	94.0	95.0	97.0	97.0
OP4190-MB	L009550.D	63.0	43.0	93.0	92.0	88.0	92.0
OP4190-MS	L009553.D	68.0	52.0	103.0	83.0	88.0	101.0
OP4190-MSD	L009554.D	70.0	55.0	95.0	84.0	86.0	97.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	20-125%
S2 = Phenol-d5	10-125%
S3 = 2,4,6-Tribromophenol	35-140%
S4 = Nitrobenzene-d5	46-125%
S5 = 2-Fluorobiphenyl	46-125%
S6 = Terphenyl-d14	49-126%

CHAIN OF CUSTODY

ACCUTEST
4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #: F11446

ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: KUBAL - FORR + ASSOCIATES

ADDRESS: PO Box 80247

CITY, STATE, ZIP: SIMPSONVILLE, SC 29680

SEND REPORT TO: DIANE ROSSETER

PHONE #: (864) 962-9490

FACILITY INFORMATION

PROJECT NAME: OHNI - OAK HAMMOCK

LOCATION: OAK HAMMOCK - HOLOPAW, FL

PROJECT NO.: 480H01

FAX #: (864) 962-5309

ANALYTICAL INFORMATION

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	PRESERVATION NaOH	PRESERVATION HNO3	PRESERVATION H2SO4	PRESERVATION NONE	VOCs	SVOCs	LAB USE ONLY
1)	GANNARELLI RANCH WELL	11/7/01	0800	GK		5	X				X	X	X	
2)	TRIP BLANK					3	X				X	X		

DATA TURNAROUND INFORMATION

- [X] STANDARD
- [ ] 48 HOUR RUSH
- [ ] 24 HOUR EMERGENCY
- [ ] OTHER

APPROVED BY: _____

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY) _____

COMMENTS/REMARKS

SEE TASKORDER # 480H01

TCL VOCs TCL SVOCs

EXTENDED TCL LIST AS IN OLM04.2

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
1.	11/8/01	1. SECURE AREA	2.		2. 11861-1400
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE/TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE/TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE 2° C

Southeast ACCUTEST.

12/06/01

Technical Report for

Kubal-Furr & Associates

Omni-Oak Hammock

48OH01 HOLOPAW,FL

Accutest Job Number: F11519

Report to:

Kubal-Furr & Associates

Drosseter@ix.netcom.com

ATTN: Diane Rosseter

Total number of pages in report: 6

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Sample Summary

Kubal-Furr & Associates

Job No: F11519

Omni-Oak Hammock
Project No: 48OH01 HOLOPAW,FL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
F11519-1	11/15/01	09:00	GTK	11/16/01	AQ	Ground Water	MC2

Report of Analysis

Client Sample ID:	MC2		
Lab Sample ID:	F11519-1	Date Sampled:	11/15/01
Matrix:	AQ - Ground Water	Date Received:	11/16/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0006865.D	1	11/27/01	JG	n/a	n/a	VC323
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	5.2	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	9.1	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	2.4	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MC2		
Lab Sample ID:	F11519-1	Date Sampled:	11/15/01
Matrix:	AQ - Ground Water	Date Received:	11/16/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	88%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MC2		
Lab Sample ID:	F11519-1	Date Sampled:	11/15/01
Matrix:	AQ - Ground Water	Date Received:	11/16/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L009653.D	1	11/26/01	ME	11/20/01	OP4229	SL554
Run #2	L009701.D	1	11/28/01	NF	11/27/01	OP4263	SL556

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MC2		
Lab Sample ID:	F11519-1	Date Sampled:	11/15/01
Matrix:	AQ - Ground Water	Date Received:	11/16/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%	42%	20-125%
4165-62-2	Phenol-d5	24%	20%	10-125%
118-79-6	2,4,6-Tribromophenol	88%	84%	35-140%
4165-60-0	Nitrobenzene-d5	88%	92%	46-125%
321-60-8	2-Fluorobiphenyl	83%	85%	46-125%
1718-51-0	Terphenyl-d14	85%	100%	49-126%

(a) Confirmed by re-extraction and reanalysis beyond holdtime.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Blank Spike Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC323-BS	C0006846.D	1	11/27/01	JG	n/a	n/a	VC323

The QC reported here applies to the following samples: Method: SW846 8260B

F11519-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	121	97	67-125
71-43-2	Benzene	25	24.9	100	75-125
75-27-4	Bromodichloromethane	25	23.4	94	75-125
75-25-2	Bromoform	25	22.1	88	72-125
108-90-7	Chlorobenzene	25	24.0	96	75-125
75-00-3	Chloroethane	25	26.4	106	58-136
67-66-3	Chloroform	25	24.2	97	75-125
75-15-0	Carbon disulfide	125	114	91	48-142
56-23-5	Carbon tetrachloride	25	24.6	98	75-136
110-82-7	Cyclohexane	25	25.2	101	50-150 [a]
75-34-3	1,1-Dichloroethane	25	25.3	101	75-125
75-35-4	1,1-Dichloroethylene	25	24.6	98	67-138
96-12-8	1,2-Dibromo-3-chloropropane	25	21.0	84	64-125
106-93-4	1,2-Dibromoethane	25	22.8	91	75-125
107-06-2	1,2-Dichloroethane	25	21.9	88	75-125
78-87-5	1,2-Dichloropropane	25	26.0	104	75-125
124-48-1	Dibromochloromethane	25	23.0	92	75-125
75-71-8	Dichlorodifluoromethane	25	20.7	83	48-171
156-59-2	cis-1,2-Dichloroethylene	25	25.4	102	75-129
10061-01-5	cis-1,3-Dichloropropene	25	23.1	92	75-125
541-73-1	m-Dichlorobenzene	25	23.4	94	75-125
95-50-1	o-Dichlorobenzene	25	22.6	90	75-125
106-46-7	p-Dichlorobenzene	25	23.1	92	75-125
156-60-5	trans-1,2-Dichloroethylene	25	24.1	96	73-125
10061-02-6	trans-1,3-Dichloropropene	25	21.2	85	75-125
100-41-4	Ethylbenzene	25	22.9	92	68-135
76-13-1	Freon 113	25	24.2	97	75-125
591-78-6	2-Hexanone	125	120	96	68-125
98-82-8	Isopropylbenzene	25	23.2	93	75-125
108-10-1	4-Methyl-2-pentanone	125	124	99	75-125
79-20-9	Methyl Acetate	125	127	102	50-150 [a]
74-83-9	Methyl bromide	25	22.1	88	59-146
74-87-3	Methyl chloride	25	21.3	85	50-142
108-87-2	Methylcyclohexane	25	25.2	101	50-150 [a]
75-09-2	Methylene chloride	25	24.7	99	69-125
78-93-3	Methyl ethyl ketone	125	122	98	70-125

Blank Spike Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC323-BS	C0006846.D	1	11/27/01	JG	n/a	n/a	VC323

The QC reported here applies to the following samples: Method: SW846 8260B

F11519-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	24.1	96	75-125
100-42-5	Styrene	25	24.4	98	75-125
71-55-6	1,1,1-Trichloroethane	25	24.6	98	75-132
79-34-5	1,1,2,2-Tetrachloroethane	25	22.3	89	75-125
79-00-5	1,1,2-Trichloroethane	25	23.1	92	75-125
120-82-1	1,2,4-Trichlorobenzene	25	22.7	91	75-125
127-18-4	Tetrachloroethylene	25	24.6	98	75-126
108-88-3	Toluene	25	23.9	96	75-125
79-01-6	Trichloroethylene	25	25.4	102	75-125
75-69-4	Trichlorofluoromethane	25	29.0	116	55-162
75-01-4	Vinyl chloride	25	23.6	94	60-147
1330-20-7	Xylene (total)	75	71.5	95	75-125

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	92%	80-120%
2037-26-5	Toluene-D8	98%	80-120%
460-00-4	4-Bromofluorobenzene	94%	80-120%

(a) Advisory control limits.

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC323-MB	C0006847.D	1	11/27/01	JG	n/a	n/a	VC323

The QC reported here applies to the following samples: Method: SW846 8260B

F11519-1

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC323-MB	C0006847.D	1	11/27/01	JG	n/a	n/a	VC323

The QC reported here applies to the following samples: Method: SW846 8260B

F11519-1

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	93%	80-120%
2037-26-5	Toluene-D8	97%	80-120%
460-00-4	4-Bromofluorobenzene	96%	80-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11497-1MS	C0006859.D	1	11/27/01	JG	n/a	n/a	VC323
F11497-1MSD	C0006860.D	1	11/27/01	JG	n/a	n/a	VC323
F11497-1	C0006851.D	1	11/27/01	JG	n/a	n/a	VC323

The QC reported here applies to the following samples: Method: SW846 8260B

F11519-1

CAS No.	Compound	F11497-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	116	93	119	95	2	61-125/15
71-43-2	Benzene	0.90	J	25	25.5	98	24.8	96	3	75-125/15
75-27-4	Bromodichloromethane	ND		25	22.6	90	21.9	88	3	75-125/15
75-25-2	Bromoform	ND		25	20.3	81	20.6	82	1	66-125/15
108-90-7	Chlorobenzene	11.4		25	35.5	96	34.5	92	3	75-125/15
75-00-3	Chloroethane	ND		25	24.1	96	22.9	92	5	53-125/15
67-66-3	Chloroform	ND		25	23.5	94	22.9	92	2	75-125/15
75-15-0	Carbon disulfide	ND		125	113	90	106	85	6	51-138/15
56-23-5	Carbon tetrachloride	ND		25	23.6	94	22.8	91	3	74-131/15
110-82-7	Cyclohexane	ND		25	29.1	116	28.0	112	4	50-150/30 [a]
75-34-3	1,1-Dichloroethane	ND		25	24.4	98	23.7	95	3	75-125/15
75-35-4	1,1-Dichloroethylene	ND		25	24.0	96	22.6	90	6	66-140/15
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	20.8	83	20.8	83	0	57-125/15
106-93-4	1,2-Dibromoethane	ND		25	21.7	87	21.5	86	1	75-125/15
107-06-2	1,2-Dichloroethane	ND		25	20.5	82	20.3	81	1	75-125/15
78-87-5	1,2-Dichloropropane	ND		25	25.0	100	25.2	101	1	75-125/15
124-48-1	Dibromochloromethane	ND		25	21.7	87	21.3	85	2	75-125/15
75-71-8	Dichlorodifluoromethane	ND		25	16.2	65	17.1	68	5	45-182/15
156-59-2	cis-1,2-Dichloroethylene	17.2		25	43.1	104	41.4	97	4	75-136/15
10061-01-5	cis-1,3-Dichloropropene	ND		25	21.6	86	21.5	86	0	71-125/15
541-73-1	m-Dichlorobenzene	ND		25	22.7	91	22.0	88	3	75-125/15
95-50-1	o-Dichlorobenzene	ND		25	22.7	91	21.8	87	4	75-125/15
106-46-7	p-Dichlorobenzene	2.6		25	25.5	92	24.8	89	3	75-125/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	23.1	92	22.6	90	2	73-125/15
10061-02-6	trans-1,3-Dichloropropene	ND		25	19.0	76	18.9	76	0	62-125/15
100-41-4	Ethylbenzene	ND		25	22.5	90	21.6	86	4	75-125/15
76-13-1	Freon 113	ND		25	24.2	97	23.0	92	5	69-131/15
591-78-6	2-Hexanone	ND		125	122	98	126	101	3	71-125/15
98-82-8	Isopropylbenzene	ND		25	22.4	90	21.8	87	3	74-125/15
108-10-1	4-Methyl-2-pentanone	ND		125	126	101	128	102	2	75-125/15
79-20-9	Methyl Acetate	ND		125	119	95	119	95	0	50-150/30 [a]
74-83-9	Methyl bromide	ND		25	20.2	81	19.4	78	4	67-146/15
74-87-3	Methyl chloride	ND		25	18.2	73	18.3	73	0	47-160/15
108-87-2	Methylcyclohexane	ND		25	25.4	102	24.4	98	4	50-150/30 [a]
75-09-2	Methylene chloride	ND		25	24.1	96	23.2	93	4	69-125/15
78-93-3	Methyl ethyl ketone	ND		125	118	94	118	94	0	70-125/15

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11497-1MS	C0006859.D	1	11/27/01	JG	n/a	n/a	VC323
F11497-1MSD	C0006860.D	1	11/27/01	JG	n/a	n/a	VC323
F11497-1	C0006851.D	1	11/27/01	JG	n/a	n/a	VC323

The QC reported here applies to the following samples: Method: SW846 8260B

F11519-1

CAS No.	Compound	F11497-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	ND		25	22.2	89	22.4	90	1	75-125/15
100-42-5	Styrene	ND		25	23.6	94	22.8	91	3	69-126/15
71-55-6	1,1,1-Trichloroethane	ND		25	23.9	96	22.9	92	4	75-131/15
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	21.6	86	21.3	85	1	75-125/15
79-00-5	1,1,2-Trichloroethane	ND		25	22.8	91	22.6	90	1	75-125/15
120-82-1	1,2,4-Trichlorobenzene	ND		25	22.3	89	21.7	87	3	74-125/15
127-18-4	Tetrachloroethylene	ND		25	26.7	107	25.2	101	6	75-125/15
108-88-3	Toluene	ND		25	23.1	92	22.2	89	4	75-125/15
79-01-6	Trichloroethylene	ND		25	24.4	98	23.7	95	3	75-125/15
75-69-4	Trichlorofluoromethane	ND		25	24.1	96	22.2	89	8	60-139/3
75-01-4	Vinyl chloride	7.4		25	27.4	80	27.5	80	0	52-169/1
1330-20-7	Xylene (total)	ND		75	68.7	92	66.5	89	3	75-125/15

CAS No.	Surrogate Recoveries	MS	MSD	F11497-1	Limits
1868-53-7	Dibromofluoromethane	100%	100%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	88%	89%	100%	80-120%
2037-26-5	Toluene-D8	95%	96%	96%	80-120%
460-00-4	4-Bromofluorobenzene	90%	91%	99%	80-120%

(a) Advisory control limits.

Volatile Surrogate Recovery Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F11519-1	C0006865.D	99.0	88.0	98.0	95.0
F11497-1MS	C0006859.D	100.0	88.0	95.0	90.0
F11497-1MSD	C0006860.D	100.0	89.0	96.0	91.0
VC323-BS	C0006846.D	100.0	92.0	98.0	94.0
VC323-MB	C0006847.D	100.0	93.0	97.0	96.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Blank Spike Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-BS	L009651.D	1	11/26/01	ME	11/20/01	OP4229	SL554

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-57-8	2-Chlorophenol	50	47.3	95	60-125
59-50-7	4-Chloro-3-methyl phenol	50	52.3	105	70-125
120-83-2	2,4-Dichlorophenol	50	48.4	97	68-125
105-67-9	2,4-Dimethylphenol	50	32.3	65	42-125
51-28-5	2,4-Dinitrophenol	50	53.4	107	10-125
534-52-1	4,6-Dinitro-o-cresol	50	50.2	100	46-125
95-48-7	2-Methylphenol	50	44.4	89	51-125
	3&4-Methylphenol	100	80.9	81	46-125
88-75-5	2-Nitrophenol	50	49.2	98	64-125
100-02-7	4-Nitrophenol	50	31.6	63	17-125
87-86-5	Pentachlorophenol	50	51.9	104	60-125
108-95-2	Phenol	50	28.6	57	16-125
95-95-4	2,4,5-Trichlorophenol	50	47.6	95	74-125
88-06-2	2,4,6-Trichlorophenol	50	45.4	91	70-125
83-32-9	Acenaphthene	50	46.6	93	70-125
208-96-8	Acenaphthylene	50	49.4	99	75-125
120-12-7	Anthracene	50	49.8	100	75-125
56-55-3	Benzo(a)anthracene	50	49.6	99	75-125
50-32-8	Benzo(a)pyrene	50	51.7	103	75-125
205-99-2	Benzo(b)fluoranthene	50	52.3	105	75-125
191-24-2	Benzo(g,h,i)perylene	50	38.6	77	57-135
207-08-9	Benzo(k)fluoranthene	50	51.3	103	75-125
101-55-3	4-Bromophenyl phenyl ether	50	46.0	92	74-125
85-68-7	Butyl benzyl phthalate	50	51.8	104	38-134
91-58-7	2-Chloronaphthalene	50	45.4	91	59-125
106-47-8	4-Chloroaniline	50	49.2	98	31-125
86-74-8	Carbazole	50	52.2	104	75-125
218-01-9	Chrysene	50	48.5	97	75-125
111-91-1	bis(2-Chloroethoxy)methane	50	48.5	97	64-125
111-44-4	bis(2-Chloroethyl)ether	50	48.4	97	62-125
108-60-1	bis(2-Chloroisopropyl)ether	50	47.8	96	60-125
7005-72-3	4-Chlorophenyl phenyl ether	50	49.6	99	75-125
121-14-2	2,4-Dinitrotoluene	50	57.9	116	73-125
606-20-2	2,6-Dinitrotoluene	50	54.9	110	75-125
91-94-1	3,3'-Dichlorobenzidine	50	48.9	98	55-125
53-70-3	Dibenzo(a,h)anthracene	50	41.0	82	64-130

Blank Spike Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-BS	L009651.D	1	11/26/01	ME	11/20/01	OP4229	SL554

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
132-64-9	Dibenzofuran	50	46.1	92	73-125
84-74-2	Di-n-butyl phthalate	50	54.9	110	47-140
117-84-0	Di-n-octyl phthalate	50	55.2	110	52-125
84-66-2	Diethyl phthalate	50	56.7	113	59-125
131-11-3	Dimethyl phthalate	50	53.0	106	24-142
117-81-7	bis(2-Ethylhexyl)phthalate	50	55.4	111	71-125
206-44-0	Fluoranthene	50	54.2	108	75-125
86-73-7	Fluorene	50	50.4	101	75-125
118-74-1	Hexachlorobenzene	50	47.2	94	74-125
87-68-3	Hexachlorobutadiene	50	40.2	80	22-125
77-47-4	Hexachlorocyclopentadiene	50	29.0	58	10-125
67-72-1	Hexachloroethane	50	46.0	92	23-125
193-39-5	Indeno(1,2,3-cd)pyrene	50	41.3	83	53-130
78-59-1	Isophorone	50	51.0	102	63-125
91-57-6	2-Methylnaphthalene	50	45.0	90	51-125
88-74-4	2-Nitroaniline	50	52.6	105	75-125
99-09-2	3-Nitroaniline	50	50.3	101	62-125
100-01-6	4-Nitroaniline	50	58.7	117	67-125
91-20-3	Naphthalene	50	48.1	96	53-125
98-95-3	Nitrobenzene	50	49.4	99	67-125
621-64-7	N-Nitroso-di-n-propylamine	50	51.2	102	61-125
86-30-6	N-Nitrosodiphenylamine	50	50.1	100	75-125
85-01-8	Phenanthrene	50	46.8	94	75-125
129-00-0	Pyrene	50	46.5	93	67-125

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	72%	20-125%
4165-62-2	Phenol-d5	53%	10-125%
118-79-6	2,4,6-Tribromophenol	91%	35-140%
4165-60-0	Nitrobenzene-d5	96%	46-125%
321-60-8	2-Fluorobiphenyl	86%	46-125%
1718-51-0	Terphenyl-d14	92%	49-126%

Blank Spike Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4263-BS	L009699.D	1	11/28/01	NF	11/27/01	OP4263	SL556

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	63%	20-125%
4165-62-2	Phenol-d5	46%	10-125%
118-79-6	2,4,6-Tribromophenol	88%	35-140%
4165-60-0	Nitrobenzene-d5	89%	46-125%
321-60-8	2-Fluorobiphenyl	85%	46-125%
1718-51-0	Terphenyl-d14	95%	49-126%

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-MB [a]	L009652.D	1	11/26/01	ME	11/20/01	OP4229	SL554

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-MB [a]	L009652.D	1	11/26/01	ME	11/20/01	OP4229	SL554

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	6%*	20-125%
4165-62-2	Phenol-d5	4%*	10-125%
118-79-6	2,4,6-Tribromophenol	7%*	35-140%

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-MB [a]	L009652.D	1	11/26/01	ME	11/20/01	OP4229	SL554

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	8%*	46-125%
321-60-8	2-Fluorobiphenyl	7%*	46-125%
1718-51-0	Terphenyl-d14	7%*	49-126%

(a) Low surrogate recoveries due to suspected leak, all associated samples re-extracted to confirm.

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-MB [a]	L009670.D	1	11/27/01	NF	11/20/01	OP4229	SL555

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-MB [a]	L009670.D	1	11/27/01	NF	11/20/01	OP4229	SL555

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	6%*	20-125%
4165-62-2	Phenol-d5	4%*	10-125%
118-79-6	2,4,6-Tribromophenol	7%*	35-140%

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-MB [a]	L009670.D	1	11/27/01	NF	11/20/01	OP4229	SL555

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	8%*	46-125%
321-60-8	2-Fluorobiphenyl	8%*	46-125%
1718-51-0	Terphenyl-d14	8%*	49-126%

(a) Low surrogate recoveries due to suspected leak, all associated samples re-extracted to confirm.

Method Blank Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4263-MB	L009700.D	1	11/28/01	NF	11/27/01	OP4263	SL556

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	59%	20-125%
4165-62-2	Phenol-d5	42%	10-125%
118-79-6	2,4,6-Tribromophenol	90%	35-140%
4165-60-0	Nitrobenzene-d5	90%	46-125%
321-60-8	2-Fluorobiphenyl	83%	46-125%
1718-51-0	Terphenyl-d14	98%	49-126%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-MS	L009656.D	1	11/26/01	ME	11/20/01	OP4229	SL554
OP4229-MSD	L009657.D	1	11/26/01	ME	11/20/01	OP4229	SL554
F11531-4 [a]	L009655.D	1	11/26/01	ME	11/20/01	OP4229	SL554

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	F11531-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		100	89.9	90	97.9	98	8	59-125/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	96.1	96	106	106	10	72-125/20
120-83-2	2,4-Dichlorophenol	ND		100	93.0	93	98.5	98	6	65-125/20
105-67-9	2,4-Dimethylphenol	ND		100	62.3	62	69.1	69	10	37-125/20
51-28-5	2,4-Dinitrophenol	ND		100	70.4	70	111	111	45*	27-125/41
534-52-1	4,6-Dinitro-o-cresol	ND		100	91.6	92	105	105	14	54-125/20
95-48-7	2-Methylphenol	ND		100	86.6	87	97.4	97	12	57-125/20
	3&4-Methylphenol	ND		200	170	85	179	90	5	55-125/20
88-75-5	2-Nitrophenol	ND		100	91.4	91	99.2	99	8	67-125/20
100-02-7	4-Nitrophenol	ND		100	77.0	77	87.4	87	13	41-125/2
87-86-5	Pentachlorophenol	ND		100	105	105	114	114	8	67-126/2
108-95-2	Phenol	ND		100	68.6	69	73.4	73	7	39-125/20
95-95-4	2,4,5-Trichlorophenol	ND		100	95.4	95	101	101	6	75-125/20
88-06-2	2,4,6-Trichlorophenol	ND		100	91.5	92	94.4	94	3	70-125/20
83-32-9	Acenaphthene	ND		100	93.8	94	95.2	95	1	74-125/20
208-96-8	Acenaphthylene	ND		100	104	104	104	104	0	75-125/20
120-12-7	Anthracene	ND		100	99.9	100	104	104	4	75-125/20
56-55-3	Benzo(a)anthracene	ND		100	94.3	94	99.8	100	6	75-125/20
50-32-8	Benzo(a)pyrene	ND		100	104	104	106	106	2	75-125/20
205-99-2	Benzo(b)fluoranthene	ND		100	100	100	107	107	7	75-125/20
191-24-2	Benzo(g,h,i)perylene	ND		100	93.3	93	79.5	80	16	61-125/21
207-08-9	Benzo(k)fluoranthene	ND		100	97.0	97	102	102	5	75-125/20
101-55-3	4-Bromophenyl phenyl ether	ND		100	92.9	93	94.8	95	2	73-125/20
85-68-7	Butyl benzyl phthalate	ND		100	98.6	99	105	105	6	66-125/20
91-58-7	2-Chloronaphthalene	ND		100	91.3	91	95.4	95	4	64-125/20
106-47-8	4-Chloroaniline	ND		100	94.9	95	100	100	5	44-125/20
86-74-8	Carbazole	ND		100	102	102	106	106	4	75-125/20
218-01-9	Chrysene	ND		100	93.3	93	98.6	99	6	75-125/20
111-91-1	bis(2-Chloroethoxy)methane	ND		100	94.3	94	98.0	98	4	62-125/20
111-44-4	bis(2-Chloroethyl)ether	ND		100	92.6	93	98.0	98	6	61-125/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		100	91.6	92	98.4	98	7	56-125/22
7005-72-3	4-Chlorophenyl phenyl ether	ND		100	101	101	100	100	1	75-125/20
121-14-2	2,4-Dinitrotoluene	ND		100	112	112	119	119	6	75-125/20
606-20-2	2,6-Dinitrotoluene	ND		100	110	110	115	115	4	75-125/20
91-94-1	3,3'-Dichlorobenzidine	ND		100	97.0	97	99.4	99	2	20-125/29
53-70-3	Dibenzo(a,h)anthracene	ND		100	95.0	95	81.0	81	16	64-127/2

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4229-MS	L009656.D	1	11/26/01	ME	11/20/01	OP4229	SL554
OP4229-MSD	L009657.D	1	11/26/01	ME	11/20/01	OP4229	SL554
F11531-4 [a]	L009655.D	1	11/26/01	ME	11/20/01	OP4229	SL554

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	F11531-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
132-64-9	Dibenzofuran	ND		100	94.0	94	96.2	96	2	73-125/20
84-74-2	Di-n-butyl phthalate	ND		100	107	107	112	112	4	71-125/20
117-84-0	Di-n-octyl phthalate	ND		100	106	106	116	116	9	66-125/30
84-66-2	Diethyl phthalate	ND		100	107	107	112	112	4	64-125/20
131-11-3	Dimethyl phthalate	ND		100	104	104	106	106	2	32-139/20
117-81-7	bis(2-Ethylhexyl)phthalate	4.0	J	100	118	114	117	113	1	74-125/20
206-44-0	Fluoranthene	ND		100	108	108	111	111	3	75-125/20
86-73-7	Fluorene	ND		100	101	101	103	103	2	75-125/20
118-74-1	Hexachlorobenzene	ND		100	94.8	95	98.6	99	4	75-125/20
87-68-3	Hexachlorobutadiene	ND		100	76.8	77	83.6	84	8	*26-125/21*
77-47-4	Hexachlorocyclopentadiene	ND		100	62.5	62	69.2	69	10	18-125/27
67-72-1	Hexachloroethane	ND		100	82.5	82	95.2	95	14	22-125/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		100	95.2	95	84.4	84	12	54-125/20
78-59-1	Isophorone	ND		100	98.6	99	106	106	7	62-125/20
91-57-6	2-Methylnaphthalene	ND		100	90.3	90	95.3	95	5	58-125/20
88-74-4	2-Nitroaniline	ND		100	100	100	107	107	7	67-125/20
99-09-2	3-Nitroaniline	ND		100	97.9	98	96.7	97	1	53-125/20
100-01-6	4-Nitroaniline	ND		100	114	114	117	117	2	63-125/20
91-20-3	Naphthalene	ND		100	94.3	94	97.0	97	3	55-125/20
98-95-3	Nitrobenzene	ND		100	93.8	94	99.5	100	6	63-125/20
621-64-7	N-Nitroso-di-n-propylamine	ND		100	100	100	107	107	7	58-125/20
86-30-6	N-Nitrosodiphenylamine	ND		100	101	101	106	106	5	75-125/20
85-01-8	Phenanthrene	ND		100	96.3	96	99.5	100	3	75-125/20
129-00-0	Pyrene	ND		100	83.3	83	92.6	93	10	67-125/20

CAS No.	Surrogate Recoveries	MS	MSD	F11531-4	Limits
367-12-4	2-Fluorophenol	78%	86%	62%	20-125%
4165-62-2	Phenol-d5	64%	69%	44%	10-125%
118-79-6	2,4,6-Tribromophenol	92%	94%	87%	35-140%
4165-60-0	Nitrobenzene-d5	91%	96%	96%	46-125%
321-60-8	2-Fluorobiphenyl	86%	91%	85%	46-125%
1718-51-0	Terphenyl-d14	87%	94%	88%	49-126%

(a) Confirmed by re-extraction and reanalysis beyond holdtime.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4263-MS	L009704.D	1	11/28/01	NF	11/27/01	OP4263	SL556
OP4263-MSD	L009705.D	1	11/28/01	NF	11/27/01	OP4263	SL556
F11531-4	L009703.D	1	11/28/01	NF	11/27/01	OP4263	SL556

The QC reported here applies to the following samples: Method: SW846 8270C

F11519-1

CAS No.	Compound	F11531-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD

CAS No.	Surrogate Recoveries	MS	MSD	F11531-4	Limits
367-12-4	2-Fluorophenol	77%	80%	58%	20-125%
4165-62-2	Phenol-d5	64%	64%	40%	10-125%
118-79-6	2,4,6-Tribromophenol	98%	97%	95%	35-140%
4165-60-0	Nitrobenzene-d5	95%	92%	94%	46-125%
321-60-8	2-Fluorobiphenyl	90%	89%	91%	46-125%
1718-51-0	Terphenyl-d14	102%	105%	100%	49-126%

Semivolatile Surrogate Recovery Summary

Job Number: F11519
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
F11519-1	L009701.D	42.0	20.0	84.0	92.0	85.0	100.0
F11519-1	L009653.D	45.0	24.0	88.0	88.0	83.0	85.0
OP4229-BS	L009651.D	72.0	53.0	91.0	96.0	86.0	92.0
OP4229-MB	L009652.D	6.0*	4.0*	7.0*	8.0*	7.0*	7.0*
OP4229-MB	L009670.D	6.0*	4.0*	7.0*	8.0*	8.0*	8.0*
OP4229-MS	L009656.D	78.0	64.0	92.0	91.0	86.0	87.0
OP4229-MSD	L009657.D	86.0	69.0	94.0	96.0	91.0	94.0
OP4263-BS	L009699.D	63.0	46.0	88.0	89.0	85.0	95.0
OP4263-MB	L009700.D	59.0	42.0	90.0	90.0	83.0	98.0
OP4263-MS	L009704.D	77.0	64.0	98.0	95.0	90.0	102.0
OP4263-MSD	L009705.D	80.0	64.0	97.0	92.0	89.0	105.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	20-125%
S2 = Phenol-d5	10-125%
S3 = 2,4,6-Tribromophenol	35-140%
S4 = Nitrobenzene-d5	46-125%
S5 = 2-Fluorobiphenyl	46-125%
S6 = Terphenyl-d14	49-126%

CHAIN OF CUSTODY

ACCUTEST

4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #: F11519
ACCUTEST QUOTE #:

CLIENT INFORMATION

KUBAL-FURR + ASSOCIATES
NAME
PO BOX 80347
ADDRESS
SIMPSONVILLE, SC 29680
CITY, STATE ZIP
SEND REPORT TO: DIANE ROSSETER
PHONE # (864) 962-9490

FACILITY INFORMATION

OMNI - OAK HAMMOCK
PROJECT NAME
LOCATION HOLOPAW, FL
PROJECT NO. 480H01
FAX # (864) 962-5309

ANALYTICAL INFORMATION

VOC's
SVOC's

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

LAB USE ONLY

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	VOC's	SVOC's	LAB USE ONLY
11	MC2	11/15/01	0900	GTK		5	X				X	X	X	

DATA TURNAROUND INFORMATION

- [X] STANDARD
- [ ] 48 HOUR RUSH
- [ ] 24 HOUR EMERGENCY
- [ ] OTHER _____

APPROVED BY: _____

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY) _____

COMMENTS/REMARKS

SEE TASK ORDER #480H01
TCL VOCs, TCL SVOCs
EXTENDED TCL LIST AS IN OLM04.2

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. Gregory J. Kim	11/16/01 0900	1. SECURE AREA	2.		2. 11/16/01 1430
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐	TEMPERATURE 4 C
5.		5.				

Grab Sampling Log—Water

Project No. 480H01 Site Location: OMNI - OAK HAMMOCK

Sample Date: 10/31/01 Arrival Time: 1030 Sample Time: 1030

Sample ID: BOART-1 Duplicate: Y / (N) Field Personnel: GK

Weather Cond. ✓ Locking Cap: ~~Y~~ / N Well Pad Cond. ✓

Sample Temp. — Spec. Conductivity: — pH: —

Sampling Method: GRAB

Method(s)	Container Desription	Preservative
8260 VOCs	3x40ml	HCl
8270 SVOCs	2x1L AMBER JUG	—

Remarks: SAMPLE TAKEN FROM BOART LONGYEAR WATER TANK. WATER WAS FROM ST. CLOUD LANDFILL HYDRANT.

FIELD
NO PARAMETERS TAKEN.

Sample Date: 11/5/01 Arrival Time: 1310 Sample Time: 1310

Sample ID: PRECISION MOBIL COMBO RIG Duplicate: Y / (N) Field Personnel: GK

Weather Cond. ✓ Locking Cap: ~~Y~~ / N Well Pad Cond. ✓

Sample Temp. — Spec. Conductivity: — pH: —

Sampling Method: GRAB

Method(s)	Container Desription	Preservative
8260 VOCs	3x40ml	HCl
8270 SVOCs	2x1L AMBER JUG	—

Remarks: SAMPLE TAKEN FROM PRECISION SAMPLING WATER TANK ON MOBIL COMBO RIG.

NO FIELD PARAMETERS TAKEN

Grab Sampling Log—Water

Project No. 480A01 Site Location: OMNI - OAK HAMMOCK

Sample Date: 11/7/01 Arrival Time: 0800 Sample Time: 0800

Sample ID: GANNARELLI RANCH WELL Duplicate: Y (N) Field Personnel: GK

Weather Cond. / Locking Cap: ~~Y~~ N Well Pad Cond. /

Sample Temp. — Spec. Conductivity: — pH: —

Sampling Method: GRAB

Method(s)	Container Desription	Preservative
8260 VOCs	3x40ml	HCl
8270 SVOCs	2x1L AMBER JUG	—

Remarks: SPIGOT ON WELL DOES NOT WORK, SAMPLE TAKEN FROM CLOSEST SPIGOT TO WELL @ FRONT OF TRAILER. SAME SPIGOT DRILLERS USED TO FILL UP WATER TANKS. TOOK SAMPLE AFTER DRILLERS FILLED UP — APPROX 300G PURGED FROM WELL BEFORE SAMPLE TAKEN. NO FIELD PARAMETERS TAKEN.

Sample Date: 11/15/01 Arrival Time: 0900 Sample Time: 0900

Sample ID: MC2 Duplicate: ~~Y~~ (N) Field Personnel: GK

Weather Cond. / Locking Cap: ~~Y~~ N Well Pad Cond. /

Sample Temp. — Spec. Conductivity: — pH: —

Sampling Method: GRAB

Method(s)	Container Desription	Preservative
8260 VOCs	3x40ml	HCl
8270 SVOCs	2x1L AMBER JUG	—

Remarks: SAMPLE TAKEN FROM PRECISION SAMPLING WATER TANK ON MC2 RIG.

NO FIELD PARAMETERS TAKEN.

DATA ASSESSMENT SUMMARY CHECKLIST AND REPORT – LEVEL III

Client ID: Omni – Oak Hammock
Project Number: TFO48OH01
Project Description: Monitoring Wells

Prepared By: Diane M. Rosseter
Date: 1/24/02

Sample Delivery Group (SDG) Description:

The temporary monitoring wells installed at the Omni – Oak Hammock landfill site in Holopaw, FL, were sampled by Kubal-Furr and Associates for volatiles, semivolatiles, pesticides, herbicides, nitrate nitrogen, and total metals. Select samples were also analyzed for dissolved metals. The samples were analyzed by AccuTest Laboratories Southeast of Orlando, FL, in accordance with FLADEP approved methodology.

CONTENTS	LEVEL III	COMMENTS
Sample Results	√	All data **Class A** except as noted in the discussion section.
Chain(s) of Custody (COCs)	√	O.K.
Master Tracking List	√	O.K.
Case Narrative	√	O.K.
Sample Prep	√	O.K.
Standards Prep		
Instrument Quality Control Data	√	CCV issues with volatiles and semivolatiles. See discussion section for details.
Batch Quality Control Report	√	Various metals batch QC issues. Details given in discussion section.
Surrogate Recovery Report	√	Pesticide surrogate recoveries out of control limits for various samples. See discussion section for details
Trip/Field/Equipment Blank Report	√	O.K.
Field Notes/Logbook	√	O.K.
CLP Forms		
All Raw Data		
Electronic Deliverables	√	O.K.

Discussion:

Volatiles

1) The continuing calibration verification (CCV) associated with samples analyzed 12/13/01 in batch VB321 exceeded the acceptance criteria for percent drift (±25%D) from the initial calibration established by the *National Functional Guidelines for Organic Data Review* (USEPA 1999) for dibromochloromethane, carbon tetrachloride, and bromoform. Results for these compounds were reported as non-detected in the associated samples listed below, and were, therefore, flagged with "UJ".
   - DP-9, DP-11, DP-12, DP-18, DP-19, BLIND DUPLICATE of DP-19, and DP-23

2) Bromoform recovered above the laboratory-established upper control limit in the blank spike associated with the samples listed in item 1 above. Because results for bromoform in these samples were reported as non-detected, no additional qualifiers were assigned.

3) Acetone was found in DP-18 at a level between method detection limit (MDL) and laboratory reporting limit (RL). Although not found in any of the associated blanks, it should be noted that acetone is considered a common laboratory contaminant and is often found in environmental samples as a result. Therefore, at the professional judgment of the reviewer, results for acetone in DP-18 are being flagged as suspect, qualified with "X", and should be weighed carefully prior to use for reliable decision-making purposes.

Semivolatiles

1) The CCV associated samples analyzed 12/10/01 was outside the *NFG*-established criteria for percent drift from the initial calibration for benzaldehyde. Results for this compound were reported as non-detected in the associated samples listed below and were, therefore, flagged with "UJ".
   - DP-9, DP-11, DP-12, DP-18, DP-19, BLIND DUPLICATE of DP-19, and DP-23

2) The CCV associated samples analyzed 12/7/01 was outside the *NFG*-established criteria for percent drift from the initial calibration for benzaldehyde. Results for this compound were reported as non-detected in the associated samples listed below and were, therefore, flagged with "UJ".
   - DP-1, DP-2, DP-10, DP-22

3) The prep blank associated with samples prepared 12/6/01 contained positive results for di-n-octyl phthalate and bis(2-ethylhexyl)phthalate. These compounds were reported as non-detected in the associated samples, therefore, no qualifiers were assigned.

Pesticides

1) Recovery for surrogate compound decachlorobiphenyl was less than 10% in the original analysis of DP-18. The sample was reextracted and reanalyzed with the same results, indicating possible matrix interference. Because surrogate recovery was so low, results for all pesticide compounds in DP-18 were rejected as unusable, flagged with "R".

2) Recovery for the surrogate compound tetrachloro-m-xylene was below the laboratory-established lower control limit in the original analysis of DP-10. The sample was reextracted and reanalyzed out of holding time with acceptable surrogate recovery. Because the reextraction was performed outside the holding time, results for all pesticide compounds in DP-10 were flagged with "UJ".

3) Endrin ketone recovered above the laboratory-established upper control limit in the blank spike associated with samples prepared on 12/7/01. Because results for endrin ketone in these samples were reported as non-detected, no qualifiers were assigned.

Herbicides

1) According to the information provided by the laboratory, the samples indicated below required dilution during sample prep due to matrix interference. As a result, these samples have elevated reporting limits.
   - DP-1, DP-9, DP-10, DP-11, DP-12, DP-18, DP-22, and DP-23

Total ICP Metals

1) It should be noted that metals detected between the instrument detection limit (IDL) and the RL were flagged by the laboratory with a "B", which is typically used in CLP reporting.

2) It should be noted that the true values given on the QC summary reports for the various quality control analyses are given in mg/L with the recovered results are reported in ug/L. Also, the units listed on the instrument blank data are mg/L, but results are given in ug/L. This is issue has been addressed with the laboratory and is due to a glitch in the QC report-generation software.

3) The method blank associated with samples prepped 12/6/01 contained positive results for aluminum, beryllium, lead, and potassium between the instrument detection limit (IDL) and laboratory-reporting limit (RL). In addition, aluminum, antimony, barium, beryllium, cadmium, calcium, chromium, cobalt, iron, lead, magnesium, manganese, nickel, potassium, selenium, thallium, and zinc were found in the various instrument calibration blanks associated with these samples. Positive results for these metals less than 5 times the highest amount found in the blanks were flagged with "U". Sample results were flagged as indicated below:
   - flag results for antimony and thallium with "U" in DP-1
   - flag results for beryllium and cobalt with "U" in DP-1, DP-2, DP-10, and DP-22
   - flag results for chromium, nickel, and zinc with "U" in DP-2
   - flag results for lead with "U" in DP-1 and DP-2
   - flag results for manganese with "U" in DP-10
   - flag results for potassium with "U" in DP-1, DP-2, and DP-22
   - flag results for selenium with "U" in DP-1, DP-10, and DP-22

4) The method blank associated with samples prepped 12/7/01 contained positive results for chromium, lead, and potassium between the IDL and RL. In addition, beryllium, lead, potassium, thallium, and zinc were found in the various instrument calibration blanks associated with these samples. Positive results for these metals less than 5 times the highest amount found in the blanks were flagged with "U". Sample results were flagged as indicated below:
   - flag results for beryllium with "U" in DP-12, DP-19, and BLIND DUPLICATE of DP-19
   - flag results for chromium, lead, potassium, and zinc with "U" in DP-19 and BLIND DUPLICATE of DP-19

5) The serial dilution associated with samples prepped 12/6/01 was outside acceptance limits for calcium, iron, magnesium, vanadium, and zinc, indicating possible matrix interference.

Positive results for these metals in the associated samples were flagged with "J" and non-detects with "UJ" as indicated below:

- flag results for calcium, iron, magnesium, and vanadium with "J" in DP-1, DP-2, DP-10, and DP-22
- flag results for zinc with "J" in DP-1, DP-10, and DP-22
- flag results for zinc with "UJ" in DP-2

6) The serial dilution associated with samples prepped 12/7/01 was outside acceptance limits for aluminum, barium, beryllium, calcium, chromium, iron, magnesium, manganese, potassium, vanadium, and zinc, indicating possible matrix interference. Positive results for these metals in the associated samples were flagged with "J" and non-detects with "UJ" as indicated below:
   - flag results for aluminum, barium, calcium, iron, magnesium, and manganese with "J" in DP-9, DP-11, DP-12, DP-18, DP-19, BLIND DUPLICATE of DP-19, and DP-23
   - flag results for chromium, potassium, vanadium, and zinc with "J" in DP-9, DP-11, DP-12, DP-18, and DP-23
   - flag results for chromium, potassium, vanadium, and zinc with "UJ in DP-19 and BLIND DUPLICATE of DP-19
   - flag results for beryllium with "J" in DP-9, DP-11, DP-18, and DP-23
   - flag results for beryllium with "UJ" in DP-12, DP-19, and BLIND DUPLICATE of DP-19

7) The matrix spike/matrix spike duplicate associated with samples prepped 12/7/01 recovered below the lower control limit for thallium. Results for thallium in the associated samples listed below were reported as non-detected, and therefore, flagged with "UJ".
   - DP-9, DP-11, DP12, DP-18, DP-19, BLIND DUPLICATE of DP-19, and DP-23

Dissolved ICP Metals

1) The method blank associated with samples prepped 12/6/01 contained positive results for aluminum, beryllium, lead, and potassium between the IDL and RL. In addition, aluminum, antimony, barium, beryllium, cadmium, calcium, chromium, cobalt, iron, lead, magnesium, manganese, nickel, potassium, selenium, thallium, and zinc were found in the various instrument calibration blanks associated with these samples. Positive results for these metals less than 5 times the highest amount found in the blanks were flagged with "U" and the quantitation limit raised to the sample concentration, or the RL, whichever was higher. Sample results were flagged as indicated below:
   - flag results for aluminum with "U" in DP-1
   - flag results for beryllium, chromium, and lead with "U" in DP-1, DP-10, and DP-22
   - flag results for cobalt, manganese, and nickel with "U" in DP-10
   - flag results for potassium with "U" in DP-1 and DP-22

2) The method blank associated with samples prepped 12/11/01 contained positive results for aluminum, lead, potassium, and zinc between the instrument detection limit (IDL) and laboratory-reporting limit (RL). In addition, aluminum, beryllium, lead, potassium, selenium, and thallium were found in the various instrument calibration blanks associated with these samples. Positive results for these metals less than 5 times the highest amount found in the blanks were flagged with "U" and the quantitation limit raised to the sample concentration, or the RL, whichever was higher. Sample results were flagged as indicated below:

- flag results for beryllium with "U" in DP-9, DP-11, DP-18, and DP-23
- flag results for lead and zinc with "U" in DP-9, DP-11, DP-12, DP-18, and DP-23
- flag results for selenium with "U" in DP-9, DP-12, DP-18, and DP-23

3) The serial dilution associated with samples prepped 12/6/01 was outside acceptance limits for calcium, iron, magnesium, vanadium, and zinc, indicating possible matrix interference. Results for these metals were positively identified in the associated samples listed below, and were therefore, flagged with "J".
   - DP-1, DP-10, and DP-22

4) The serial dilution associated with samples prepped 12/11/01 was outside acceptance limits for calcium and sodium, indicating possible matrix interference. Results for these compounds were positively identified in the associated samples indicated below and were, therefore, flagged with "J".
   - DP-9, DP-11, DP-12, DP-18, and DP-23

5) It should be noted that a results for various dissolved metals in a few samples were higher than the total results for these metals. In addition, dissolved silver was found at trace levels in DP-1 and DP-22, but total silver was not. Based on the turbid nature of the samples, it is possible total metals results may have been affected by matrix interference, accounting for higher concentrations in the filtered samples.

Mercury

1) It should be noted the prep date given on the analytical results for the samples listed below should be 12/19/01, instead of 12/20/01, according to the preparation log provided by the laboratory.
   - total mercury: BLIND DUPLICATE of DP-9 and DP-18
   - dissolved mercury: DP-9, DP11, DP12, DP-23, and DP-18

Nitrate Nitrogen

1) Nitrate analysis was performed outside the method-required 48-hour holding time for the samples indicated below. Positive results for nitrate in these samples were flagged with "J" and non-detects with "UJ" as indicated below:
   - flag results for nitrate with "J" in DP-1
   - flag results for nitrate with "UJ" in DP-9, DP-12, and DP-23

J = positively identified, however concentration should be considered as estimated
U = not detected above the associated quantitation limit
UJ = not detected above the associated quantitation limit, however results should be as estimated
R = data rejected due to QA/QC deficiencies
B = a laboratory-assigned qualifier to indicate metals results between the IDL and RL
X = reviewer assigned qualifer

Class A = quantitative Class B = qualitative Class C = unusable

Southeast
ACCUTEST.

01/23/02

Technical Report for

Kubal-Furr & Associates

Omni-Oak Hammock

48OH01 HOLOPAW,FL

Accutest Job Number: F11674

Report to:

Kubal-Furr & Associates

Drosseter@ix.netcom.com

ATTN: Diane Rosseter

Total number of pages in report: 39

ACCREDITED IN ACCORDANCE WITH nela

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

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Sample Summary

Kubal-Furr & Associates

Job No: F11674

Omni-Oak Hammock
Project No: 48OH01 HOLOPAW,FL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
F11674-1	12/03/01	11:30	GK	12/04/01	AQ	Ground Water	DP-1
F11674-2	12/03/01	13:40	GK	12/04/01	AQ	Ground Water	DP-2
F11674-3	12/03/01	15:22	GK	12/04/01	AQ	Ground Water	DP-10
F11674-4	12/03/01	16:50	GK	12/04/01	AQ	Ground Water	DP-22
F11674-5	12/03/01	00:00	GK	12/04/01	AQ	Trip Blank Water	TRIP BLANK
F11674-1A	12/03/01	11:30	GK	12/04/01	AQ	Groundwater Filtered	DP-1
F11674-3A	12/03/01	15:22	GK	12/04/01	AQ	Groundwater Filtered	DP-10
F11674-4A	12/03/01	16:50	GK	12/04/01	AQ	Groundwater Filtered	DP-22

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0007199.D	1	12/13/01	JG	n/a	n/a	VC337
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009918.D	1	12/07/01	ME	12/06/01	OP4325	SL564
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	36%		20-125%
4165-62-2	Phenol-d5	25%		10-125%
118-79-6	2,4,6-Tribromophenol	86%		35-140%
4165-60-0	Nitrobenzene-d5	59%		46-125%
321-60-8	2-Fluorobiphenyl	59%		46-125%
1718-51-0	Terphenyl-d14	88%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04113.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		47-126%
2051-24-3	Decachlorobiphenyl	43%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GG03026.D	1	12/11/01	ATX	12/08/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	10	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	2.0	ug/l	
93-76-5	2,4,5-T	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	60%		10-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	46600	200	9.4	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Antimony	4.0 B	5.0	2.6	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Arsenic	15.8	10	3.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Barium	391	200	0.94	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Beryllium	4.4 B	5.0	0.22	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Calcium	5920	1000	10	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Chromium	34.1	10	0.35	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cobalt	3.9 B	50	0.55	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Copper	2.5 B	25	0.71	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Iron	5720	300	9.0	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Lead	12.5	5.0	1.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Magnesium	2060 B	5000	26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Manganese	16.5	15	0.26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	10.4 B	40	0.80	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Potassium	1260 B	5000	49	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Selenium	4.7 B	10	2.5	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Sodium	5750	5000	170	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Thallium	5.5 B	10	2.1	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Vanadium	41.7 B	50	0.58	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Zinc	24.1	20	0.36	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	0.42	0.10	mg/l	1	12/05/01 AL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DP-2		
Lab Sample ID:	F11674-2	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0007200.D	1	12/13/01	JG	n/a	n/a	VC337
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-2		
Lab Sample ID:	F11674-2	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-2		
Lab Sample ID:	F11674-2	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009919.D	1	12/07/01	ME	12/06/01	OP4325	SL564
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-2		
Lab Sample ID:	F11674-2	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		20-125%
4165-62-2	Phenol-d5	30%		10-125%
118-79-6	2,4,6-Tribromophenol	86%		35-140%
4165-60-0	Nitrobenzene-d5	63%		46-125%
321-60-8	2-Fluorobiphenyl	63%		46-125%
1718-51-0	Terphenyl-d14	94%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-2		
Lab Sample ID:	F11674-2	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04114.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	80%		47-126%
2051-24-3	Decachlorobiphenyl	63%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-2		
Lab Sample ID:	F11674-2	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG02967.D	5	12/09/01	ATX	12/07/01	T:OP632	T:GGG108
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	5.0	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	1.0	ug/l	
93-76-5	2,4,5-T	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	90%		10-150%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-2		
Lab Sample ID:	F11674-2	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	824	200	9.4	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Barium	8.4 B	200	0.94	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.96 B	5.0	0.22	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Calcium	2010	1000	10	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Chromium	0.50 B	10	0.35	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cobalt	0.66 B	50	0.55	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Copper	0.71 U	25	0.71	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Iron	1830	300	9.0	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Lead	3.0 B	5.0	1.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Magnesium	958 B	5000	26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Manganese	9.1 B	15	0.26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	2.0 B	40	0.80	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Potassium	727 B	5000	49	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Selenium	2.5 U	10	2.5	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Sodium	5400	5000	170	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Vanadium	3.1 B	50	0.58	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Zinc	6.9 B	20	0.36	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-2		
Lab Sample ID:	F11674-2	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/05/01 AL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0007201.D	1	12/13/01	JG	n/a	n/a	VC337
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	0.53	2.0	ug/l	J
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009920.D	1	12/07/01	ME	12/06/01	OP4325	SL564
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		20-125%
4165-62-2	Phenol-d5	30%		10-125%
118-79-6	2,4,6-Tribromophenol	82%		35-140%
4165-60-0	Nitrobenzene-d5	62%		46-125%
321-60-8	2-Fluorobiphenyl	66%		46-125%
1718-51-0	Terphenyl-d14	90%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04117.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2 [a]	DD04172.D	1	12/12/01	SKW	12/11/01	OP4328	GDD154

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	45%	67%	47-126%
2051-24-3	Decachlorobiphenyl	30%	53%	13-144%

(a) Confirmed ND by re-extraction and reanalysis beyond holdtime.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GG03027.D	1	12/11/01	ATX	12/08/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	10	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	2.0	ug/l	
93-76-5	2,4,5-T	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	69%		10-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	48600	200	9.4	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Barium	144 B	200	0.94	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Beryllium	1.7 B	5.0	0.22	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Calcium	2890	1000	10	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Chromium	34.7	10	0.35	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cobalt	2.7 B	50	0.55	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Copper	3.5 B	25	0.71	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Iron	5250	300	9.0	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Lead	38.7	5.0	1.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Magnesium	3730 B	5000	26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Manganese	7.4 B	15	0.26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	13.7 B	40	0.80	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Potassium	4590 B	5000	49	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Selenium	2.7 B	10	2.5	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Sodium	15100	5000	170	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Vanadium	50.3	50	0.58	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Zinc	12.8 B	20	0.36	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/05/01 AL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0007202.D	1	12/13/01	JG	n/a	n/a	VC337
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	2.1	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009923.D	1	12/07/01	ME	12/06/01	OP4325	SL564
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	46%		20-125%
4165-62-2	Phenol-d5	38%		10-125%
118-79-6	2,4,6-Tribromophenol	90%		35-140%
4165-60-0	Nitrobenzene-d5	72%		46-125%
321-60-8	2-Fluorobiphenyl	77%		46-125%
1718-51-0	Terphenyl-d14	97%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04118.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	80%		47-126%
2051-24-3	Decachlorobiphenyl	51%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GG03028.D	1	12/11/01	ATX	12/08/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	10	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	2.0	ug/l	
93-76-5	2,4,5-T	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	55%		10-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	50600	200	9.4	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.9 B	10	3.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Barium	146 B	200	0.94	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Beryllium	2.0 B	5.0	0.22	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Calcium	5200	1000	10	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Chromium	40.9	10	0.35	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cobalt	3.1 B	50	0.55	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Copper	2.0 B	25	0.71	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Iron	6020	300	9.0	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Lead	40.4	5.0	1.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Magnesium	3960 B	5000	26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Manganese	16.2	15	0.26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	10.7 B	40	0.80	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Potassium	2280 B	5000	49	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Selenium	7.7 B	10	2.5	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Sodium	8720	5000	170	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Vanadium	57.2	50	0.58	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Zinc	12.0 B	20	0.36	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4	Date Sampled:	12/03/01
Matrix:	AQ - Ground Water	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/05/01 AL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F11674-5	Date Sampled:	12/03/01
Matrix:	AQ - Trip Blank Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0007205.D	1	12/13/01	JG	n/a	n/a	VC337
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F11674-5	Date Sampled:	12/03/01
Matrix:	AQ - Trip Blank Water	Date Received:	12/04/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-1		
Lab Sample ID:	F11674-1A	Date Sampled:	12/03/01
Matrix:	AQ - Groundwater Filtered	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	345	200	9.4	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Barium	13.2 B	200	0.94	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.99 B	5.0	0.22	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Calcium	1680	1000	10	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Chromium	0.44 B	10	0.35	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cobalt	0.55 U	50	0.55	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Copper	0.71 U	25	0.71	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Iron	809	300	9.0	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Lead	2.8 B	5.0	1.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Magnesium	1290 B	5000	26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Manganese	9.2 B	15	0.26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	0.80 U	40	0.80	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Potassium	857 B	5000	49	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Selenium	2.5 U	10	2.5	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Silver	3.5 B	10	0.59	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Sodium	4470 B	5000	170	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Vanadium	5.6 B	50	0.58	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Zinc	37.3	20	0.36	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-10		
Lab Sample ID:	F11674-3A	Date Sampled:	12/03/01
Matrix:	AQ - Groundwater Filtered	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	10000	200	9.4	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Barium	30.0 B	200	0.94	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Beryllium	1.1 B	5.0	0.22	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Calcium	1630	1000	10	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Chromium	7.3 B	10	0.35	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cobalt	1.0 B	50	0.55	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Copper	0.71 U	25	0.71	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Iron	1790	300	9.0	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Lead	8.3	5.0	1.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Magnesium	1770 B	5000	26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Manganese	3.9 B	15	0.26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	3.3 B	40	0.80	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Potassium	3150 B	5000	49	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Selenium	2.5 U	10	2.5	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Sodium	10500	5000	170	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Vanadium	13.5 B	50	0.58	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Zinc	32.9	20	0.36	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-22		
Lab Sample ID:	F11674-4A	Date Sampled:	12/03/01
Matrix:	AQ - Groundwater Filtered	Date Received:	12/04/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	658	200	9.4	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Barium	16.5 B	200	0.94	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.85 B	5.0	0.22	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Calcium	3350	1000	10	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Chromium	1.6 B	10	0.35	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Cobalt	0.55 U	50	0.55	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Copper	0.71 U	25	0.71	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Iron	1410	300	9.0	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Lead	2.9 B	5.0	1.2	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Magnesium	2130 B	5000	26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Manganese	8.7 B	15	0.26	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	0.80 U	40	0.80	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Potassium	1680 B	5000	49	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Selenium	2.5 U	10	2.5	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Silver	0.65 B	10	0.59	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Sodium	7970	5000	170	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Vanadium	10.4 B	50	0.58	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A
Zinc	23.4	20	0.36	ug/l	1	12/06/01	12/06/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Blank Spike Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC337-BS	C0007195.D	1	12/13/01	JG	n/a	n/a	VC337

The QC reported here applies to the following samples: Method: SW846 8260B

F11674-1, F11674-2, F11674-3, F11674-4, F11674-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	133	106	67-125
71-43-2	Benzene	25	26.6	106	75-125
75-27-4	Bromodichloromethane	25	28.0	112	75-125
75-25-2	Bromoform	25	26.3	105	72-125
108-90-7	Chlorobenzene	25	25.4	102	75-125
75-00-3	Chloroethane	25	27.0	108	58-136
67-66-3	Chloroform	25	27.4	110	75-125
75-15-0	Carbon disulfide	125	130	104	48-142
56-23-5	Carbon tetrachloride	25	30.4	122	75-136
110-82-7	Cyclohexane	25	27.8	111	50-150 [a]
75-34-3	1,1-Dichloroethane	25	27.0	108	75-125
75-35-4	1,1-Dichloroethylene	25	27.5	110	67-138
96-12-8	1,2-Dibromo-3-chloropropane	25	25.5	102	64-125
106-93-4	1,2-Dibromoethane	25	24.1	96	75-125
107-06-2	1,2-Dichloroethane	25	25.3	101	75-125
78-87-5	1,2-Dichloropropane	25	27.6	110	75-125
124-48-1	Dibromochloromethane	25	25.7	103	75-125
75-71-8	Dichlorodifluoromethane	25	28.0	112	48-171
156-59-2	cis-1,2-Dichloroethylene	25	27.7	111	75-129
10061-01-5	cis-1,3-Dichloropropene	25	23.7	95	75-125
541-73-1	m-Dichlorobenzene	25	25.5	102	75-125
95-50-1	o-Dichlorobenzene	25	25.3	101	75-125
106-46-7	p-Dichlorobenzene	25	26.0	104	75-125
156-60-5	trans-1,2-Dichloroethylene	25	26.4	106	73-125
10061-02-6	trans-1,3-Dichloropropene	25	21.8	87	75-125
100-41-4	Ethylbenzene	25	25.3	101	68-135
76-13-1	Freon 113	25	28.8	115	75-125
591-78-6	2-Hexanone	125	130	104	68-125
98-82-8	Isopropylbenzene	25	25.8	103	75-125
108-10-1	4-Methyl-2-pentanone	125	133	106	75-125
79-20-9	Methyl Acetate	125	134	107	50-150 [a]
74-83-9	Methyl bromide	25	27.0	108	59-146
74-87-3	Methyl chloride	25	26.7	107	50-142
108-87-2	Methylcyclohexane	25	28.4	114	50-150 [a]
75-09-2	Methylene chloride	25	25.1	100	69-125
78-93-3	Methyl ethyl ketone	125	129	103	70-125

Blank Spike Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC337-BS	C0007195.D	1	12/13/01	JG	n/a	n/a	VC337

The QC reported here applies to the following samples: Method: SW846 8260B

F11674-1, F11674-2, F11674-3, F11674-4, F11674-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	27.1	108	75-125
100-42-5	Styrene	25	24.6	98	75-125
71-55-6	1,1,1-Trichloroethane	25	28.7	115	75-132
79-34-5	1,1,2,2-Tetrachloroethane	25	23.5	94	75-125
79-00-5	1,1,2-Trichloroethane	25	24.7	99	75-125
120-82-1	1,2,4-Trichlorobenzene	25	24.8	99	75-125
127-18-4	Tetrachloroethylene	25	27.1	108	75-126
108-88-3	Toluene	25	25.0	100	75-125
79-01-6	Trichloroethylene	25	25.7	103	75-125
75-69-4	Trichlorofluoromethane	25	31.1	124	55-162
75-01-4	Vinyl chloride	25	26.4	106	60-147
1330-20-7	Xylene (total)	75	77.8	104	75-125

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	80-120%
2037-26-5	Toluene-D8	96%	80-120%
460-00-4	4-Bromofluorobenzene	93%	80-120%

(a) Advisory control limits.

Method Blank Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC337-MB	C0007196.D	1	12/13/01	JG	n/a	n/a	VC337

The QC reported here applies to the following samples: Method: SW846 8260B

F11674-1, F11674-2, F11674-3, F11674-4, F11674-5

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

Method Blank Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC337-MB	C0007196.D	1	12/13/01	JG	n/a	n/a	VC337

The QC reported here applies to the following samples: Method: SW846 8260B

F11674-1, F11674-2, F11674-3, F11674-4, F11674-5

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	80-120%
2037-26-5	Toluene-D8	99%	80-120%
460-00-4	4-Bromofluorobenzene	96%	80-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11674-3MS	C0007203.D	1	12/13/01	JG	n/a	n/a	VC337
F11674-3MSD	C0007204.D	1	12/13/01	JG	n/a	n/a	VC337
F11674-3	C0007201.D	1	12/13/01	JG	n/a	n/a	VC337

The QC reported here applies to the following samples: Method: SW846 8260B

F11674-1, F11674-2, F11674-3, F11674-4, F11674-5

CAS No.	Compound	F11674-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	135	108	138	110	2	61-125/15
71-43-2	Benzene	ND		25	26.3	105	26.6	106	1	75-125/15
75-27-4	Bromodichloromethane	ND		25	27.1	108	26.2	105	3	75-125/15
75-25-2	Bromoform	ND		25	23.7	95	23.3	93	2	66-125/15
108-90-7	Chlorobenzene	ND		25	26.0	104	25.4	102	2	75-125/15
75-00-3	Chloroethane	ND		25	24.0	96	24.4	98	2	53-125/15
67-66-3	Chloroform	ND		25	26.6	106	26.9	108	1	75-125/15
75-15-0	Carbon disulfide	ND		125	127	102	127	102	0	51-138/15
56-23-5	Carbon tetrachloride	ND		25	28.1	112	28.4	114	1	74-131/15
110-82-7	Cyclohexane	ND		25	27.1	108	27.5	110	1	50-150/30 [a]
75-34-3	1,1-Dichloroethane	ND		25	27.0	108	26.8	107	1	75-125/15
75-35-4	1,1-Dichloroethylene	ND		25	26.9	108	27.5	110	2	66-140/15
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	23.0	92	23.5	94	2	57-125/15
106-93-4	1,2-Dibromoethane	ND		25	24.5	98	25.3	101	3	75-125/15
107-06-2	1,2-Dichloroethane	ND		25	24.8	99	24.6	98	1	75-125/15
78-87-5	1,2-Dichloropropane	ND		25	27.5	110	27.2	109	1	75-125/15
124-48-1	Dibromochloromethane	ND		25	24.8	99	24.5	98	1	75-125/15
75-71-8	Dichlorodifluoromethane	ND		25	22.6	90	26.3	105	15	45-182/15
156-59-2	cis-1,2-Dichloroethylene	ND		25	27.4	110	27.5	110	0	75-136/15
10061-01-5	cis-1,3-Dichloropropene	ND		25	21.3	85	20.6	82	3	71-125/15
541-73-1	m-Dichlorobenzene	ND		25	25.5	102	25.2	101	1	75-125/15
95-50-1	o-Dichlorobenzene	ND		25	25.1	100	25.2	101	0	75-125/15
106-46-7	p-Dichlorobenzene	ND		25	25.6	102	25.4	102	1	75-125/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	26.5	106	26.1	104	2	73-125/15
10061-02-6	trans-1,3-Dichloropropene	ND		25	19.2	77	18.7	75	3	62-125/15
100-41-4	Ethylbenzene	ND		25	25.3	101	25.3	101	0	75-125/15
76-13-1	Freon 113	ND		25	28.5	114	28.6	114	0	69-131/15
591-78-6	2-Hexanone	ND		125	131	105	136	109	4	71-125/15
98-82-8	Isopropylbenzene	ND		25	25.4	102	25.0	100	2	74-125/15
108-10-1	4-Methyl-2-pentanone	ND		125	134	107	136	109	1	75-125/15
79-20-9	Methyl Acetate	ND		125	132	106	132	106	0	50-150/30 [a]
74-83-9	Methyl bromide	ND		25	23.4	94	23.4	94	0	67-146/15
74-87-3	Methyl chloride	ND		25	21.9	88	24.8	99	12	47-160/15
108-87-2	Methylcyclohexane	ND		25	27.8	111	28.3	113	2	50-150/30 [a]
75-09-2	Methylene chloride	ND		25	24.5	98	25.0	100	2	69-125/15
78-93-3	Methyl ethyl ketone	ND		125	130	104	132	106	2	70-125/15

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11674-3MS	C0007203.D	1	12/13/01	JG	n/a	n/a	VC337
F11674-3MSD	C0007204.D	1	12/13/01	JG	n/a	n/a	VC337
F11674-3	C0007201.D	1	12/13/01	JG	n/a	n/a	VC337

The QC reported here applies to the following samples: Method: SW846 8260B

F11674-1, F11674-2, F11674-3, F11674-4, F11674-5

CAS No.	Compound	F11674-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	ND		25	26.4	106	26.9	108	2	75-125/15
100-42-5	Styrene	ND		25	24.7	99	23.8	95	4	69-126/15
71-55-6	1,1,1-Trichloroethane	ND		25	28.8	115	28.9	116	0	75-131/15
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	22.9	92	23.2	93	1	75-125/15
79-00-5	1,1,2-Trichloroethane	ND		25	25.0	100	24.4	98	2	75-125/15
120-82-1	1,2,4-Trichlorobenzene	ND		25	23.9	96	23.7	95	1	74-125/15
127-18-4	Tetrachloroethylene	ND		25	26.9	108	28.0	112	4	75-125/15
108-88-3	Toluene	0.53	J	25	25.7	101	25.9	101	1	75-125/15
79-01-6	Trichloroethylene	ND		25	25.5	102	25.6	102	0	75-125/15
75-69-4	Trichlorofluoromethane	ND		25	26.3	105	27.1	108	3	60-139/3
75-01-4	Vinyl chloride	ND		25	23.2	93	24.8	99	7	52-169/1
1330-20-7	Xylene (total)	ND		75	78.9	105	78.5	105	1	75-125/15

CAS No.	Surrogate Recoveries	MS	MSD	F11674-3	Limits
1868-53-7	Dibromofluoromethane	103%	104%	103%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	104%	104%	80-120%
2037-26-5	Toluene-D8	97%	97%	97%	80-120%
460-00-4	4-Bromofluorobenzene	90%	91%	97%	80-120%

(a) Advisory control limits.

Volatile Surrogate Recovery Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F11674-1	C0007199.D	102.0	104.0	99.0	99.0
F11674-2	C0007200.D	103.0	106.0	98.0	98.0
F11674-3	C0007201.D	103.0	104.0	97.0	97.0
F11674-4	C0007202.D	102.0	106.0	97.0	96.0
F11674-5	C0007205.D	103.0	105.0	98.0	97.0
F11674-3MS	C0007203.D	103.0	104.0	97.0	90.0
F11674-3MSD	C0007204.D	104.0	104.0	97.0	91.0
VC337-BS	C0007195.D	104.0	106.0	96.0	93.0
VC337-MB	C0007196.D	103.0	105.0	99.0	96.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Blank Spike Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4325-BS	L009916.D	1	12/07/01	ME	12/06/01	OP4325	SL564

The QC reported here applies to the following samples: Method: SW846 8270C

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-57-8	2-Chlorophenol	50	39.9	80	60-125
59-50-7	4-Chloro-3-methyl phenol	50	45.7	91	70-125
120-83-2	2,4-Dichlorophenol	50	43.2	86	68-125
105-67-9	2,4-Dimethylphenol	50	35.0	70	42-125
51-28-5	2,4-Dinitrophenol	50	49.9	100	10-125
534-52-1	4,6-Dinitro-o-cresol	50	52.2	104	46-125
95-48-7	2-Methylphenol	50	37.1	74	51-125
	3&4-Methylphenol	100	74.8	75	46-125
88-75-5	2-Nitrophenol	50	44.6	89	64-125
100-02-7	4-Nitrophenol	50	29.7	59	17-125
87-86-5	Pentachlorophenol	50	51.3	103	60-125
108-95-2	Phenol	50	25.1	50	16-125
95-95-4	2,4,5-Trichlorophenol	50	46.0	92	74-125
88-06-2	2,4,6-Trichlorophenol	50	42.6	85	70-125
83-32-9	Acenaphthene	50	43.9	88	70-125
208-96-8	Acenaphthylene	50	48.5	97	75-125
120-12-7	Anthracene	50	49.9	100	75-125
56-55-3	Benzo(a)anthracene	50	50.4	101	75-125
50-32-8	Benzo(a)pyrene	50	53.8	108	75-125
205-99-2	Benzo(b)fluoranthene	50	51.2	102	75-125
191-24-2	Benzo(g,h,i)perylene	50	61.4	123	57-135
207-08-9	Benzo(k)fluoranthene	50	49.4	99	75-125
101-55-3	4-Bromophenyl phenyl ether	50	48.6	97	74-125
85-68-7	Butyl benzyl phthalate	50	58.1	116	38-134
91-58-7	2-Chloronaphthalene	50	43.0	86	59-125
106-47-8	4-Chloroaniline	50	45.8	92	31-125
86-74-8	Carbazole	50	49.3	99	75-125
218-01-9	Chrysene	50	48.8	98	75-125
111-91-1	bis(2-Chloroethoxy)methane	50	43.7	87	64-125
111-44-4	bis(2-Chloroethyl)ether	50	40.4	81	62-125
108-60-1	bis(2-Chloroisopropyl)ether	50	39.2	78	60-125
7005-72-3	4-Chlorophenyl phenyl ether	50	48.8	98	75-125
121-14-2	2,4-Dinitrotoluene	50	55.0	110	73-125
606-20-2	2,6-Dinitrotoluene	50	53.9	108	75-125
91-94-1	3,3'-Dichlorobenzidine	50	56.3	113	55-125
53-70-3	Dibenzo(a,h)anthracene	50	58.4	117	64-130

Blank Spike Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4325-BS	L009916.D	1	12/07/01	ME	12/06/01	OP4325	SL564

The QC reported here applies to the following samples: Method: SW846 8270C

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
132-64-9	Dibenzofuran	50	45.4	91	73-125
84-74-2	Di-n-butyl phthalate	50	55.3	111	47-140
117-84-0	Di-n-octyl phthalate	50	59.8	120	52-125
84-66-2	Diethyl phthalate	50	56.1	112	59-125
131-11-3	Dimethyl phthalate	50	53.9	108	24-142
117-81-7	bis(2-Ethylhexyl)phthalate	50	62.0	124	71-125
206-44-0	Fluoranthene	50	49.3	99	75-125
86-73-7	Fluorene	50	47.6	95	75-125
118-74-1	Hexachlorobenzene	50	48.2	96	74-125
87-68-3	Hexachlorobutadiene	50	35.1	70	22-125
67-72-1	Hexachloroethane	50	28.5	57	23-125
193-39-5	Indeno(1,2,3-cd)pyrene	50	61.2	122	53-130
78-59-1	Isophorone	50	45.7	91	63-125
91-57-6	2-Methylnaphthalene	50	41.9	84	51-125
88-74-4	2-Nitroaniline	50	51.3	103	75-125
99-09-2	3-Nitroaniline	50	49.4	99	62-125
100-01-6	4-Nitroaniline	50	53.7	107	67-125
91-20-3	Naphthalene	50	42.0	84	53-125
98-95-3	Nitrobenzene	50	42.4	85	67-125
621-64-7	N-Nitroso-di-n-propylamine	50	47.2	94	61-125
86-30-6	N-Nitrosodiphenylamine	50	53.8	108	75-125
85-01-8	Phenanthrene	50	47.5	95	75-125
129-00-0	Pyrene	50	47.7	95	67-125

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	60%	20-125%
4165-62-2	Phenol-d5	45%	10-125%
118-79-6	2,4,6-Tribromophenol	92%	35-140%
4165-60-0	Nitrobenzene-d5	83%	46-125%
321-60-8	2-Fluorobiphenyl	81%	46-125%
1718-51-0	Terphenyl-d14	99%	49-126%

Method Blank Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4325-MB	L009917.D	1	12/07/01	ME	12/06/01	OP4325	SL564

The QC reported here applies to the following samples: Method: SW846 8270C

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

Method Blank Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4325-MB	L009917.D	1	12/07/01	ME	12/06/01	OP4325	SL564

The QC reported here applies to the following samples: Method: SW846 8270C

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate [a]	3.6	5.0	ug/l	J
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate [a]	6.5	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	57%	20-125%
4165-62-2	Phenol-d5	44%	10-125%
118-79-6	2,4,6-Tribromophenol	87%	35-140%

Method Blank Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4325-MB	L009917.D	1	12/07/01	ME	12/06/01	OP4325	SL564

The QC reported here applies to the following samples: Method: SW846 8270C

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	77%	46-125%
321-60-8	2-Fluorobiphenyl	72%	46-125%
1718-51-0	Terphenyl-d14	95%	49-126%

(a) Suspected laboratory contaminant. Compound not detected in associated samples.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4325-MS	L009921.D	1	12/07/01	ME	12/06/01	OP4325	SL564
OP4325-MSD	L009922.D	1	12/07/01	ME	12/06/01	OP4325	SL564
F11674-3	L009920.D	1	12/07/01	ME	12/06/01	OP4325	SL564

The QC reported here applies to the following samples: Method: SW846 8270C

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	F11674-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		100	59.3	59	63.3	63	7	59-125/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	78.6	79	80.0	80	2	72-125/20
120-83-2	2,4-Dichlorophenol	ND		100	65.6	66	69.2	69	5	65-125/20
105-67-9	2,4-Dimethylphenol	ND		100	55.2	55	58.1	58	5	37-125/20
51-28-5	2,4-Dinitrophenol	ND		100	88.8	89	85.7	86	4	27-125/41
534-52-1	4,6-Dinitro-o-cresol	ND		100	88.0	88	92.4	92	5	54-125/20
95-48-7	2-Methylphenol	ND		100	57.3	57	61.7	62	7	57-125/20
	3&4-Methylphenol	ND		200	115	58	124	62	8	55-125/20
88-75-5	2-Nitrophenol	ND		100	66.7	67	68.5	69	3	67-125/20
100-02-7	4-Nitrophenol	ND		100	62.8	63	66.7	67	6	41-125/23
87-86-5	Pentachlorophenol	ND		100	89.3	89	94.6	95	6	67-126/20
108-95-2	Phenol	ND		100	42.2	42	47.6	48	12	39-125/20
95-95-4	2,4,5-Trichlorophenol	ND		100	79.7	80	82.6	83	4	75-125/20
88-06-2	2,4,6-Trichlorophenol	ND		100	75.2	75	76.3	76	1	70-125/20
83-32-9	Acenaphthene	ND		100	77.5	78	79.5	80	3	74-125/20
208-96-8	Acenaphthylene	ND		100	85.0	85	87.1	87	2	75-125/20
120-12-7	Anthracene	ND		100	95.2	95	97.4	97	2	75-125/20
56-55-3	Benzo(a)anthracene	ND		100	93.5	94	100	100	7	75-125/20
50-32-8	Benzo(a)pyrene	ND		100	96.8	97	101	101	4	75-125/20
205-99-2	Benzo(b)fluoranthene	ND		100	92.0	92	95.4	95	4	75-125/20
191-24-2	Benzo(g,h,i)perylene	ND		100	117	117	117	117	0	61-125/21
207-08-9	Benzo(k)fluoranthene	ND		100	87.4	87	93.9	94	7	75-125/20
101-55-3	4-Bromophenyl phenyl ether	ND		100	86.1	86	90.3	90	5	73-125/20
85-68-7	Butyl benzyl phthalate	ND		100	106	106	112	112	6	66-125/20
91-58-7	2-Chloronaphthalene	ND		100	69.0	69	72.5	73	5	64-125/20
106-47-8	4-Chloroaniline	ND		100	76.8	77	78.5	79	2	44-125/20
86-74-8	Carbazole	ND		100	92.1	92	98.0	98	6	75-125/20
218-01-9	Chrysene	ND		100	92.1	92	94.0	94	2	75-125/20
111-91-1	bis(2-Chloroethoxy)methane	ND		100	65.3	65	70.6	71	8	62-125/20
111-44-4	bis(2-Chloroethyl)ether	ND		100	62.8	63	66.5	67	6	61-125/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		100	63.7	64	64.9	65	2	56-125/22
7005-72-3	4-Chlorophenyl phenyl ether	ND		100	85.6	86	90.2	90	5	75-125/20
121-14-2	2,4-Dinitrotoluene	ND		100	104	104	109	109	5	75-125/20
606-20-2	2,6-Dinitrotoluene	ND		100	102	102	103	103	1	75-125/20
91-94-1	3,3'-Dichlorobenzidine	ND		100	102	102	104	104	2	20-125/29
53-70-3	Dibenzo(a,h)anthracene	ND		100	109	109	111	111	2	64-127/20

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4325-MS	L009921.D	1	12/07/01	ME	12/06/01	OP4325	SL564
OP4325-MSD	L009922.D	1	12/07/01	ME	12/06/01	OP4325	SL564
F11674-3	L009920.D	1	12/07/01	ME	12/06/01	OP4325	SL564

The QC reported here applies to the following samples: Method: SW846 8270C

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	F11674-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
132-64-9	Dibenzofuran	ND		100	79.7	80	82.3	82	3	73-125/20
84-74-2	Di-n-butyl phthalate	ND		100	105	105	109	109	4	71-125/20
117-84-0	Di-n-octyl phthalate	ND		100	111	111	111	111	0	66-125/30
84-66-2	Diethyl phthalate	ND		100	106	106	108	108	2	64-125/20
131-11-3	Dimethyl phthalate	ND		100	98.5	99	101	101	3	32-139/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		100	127	127*	121	121	5	74-125/20
206-44-0	Fluoranthene	ND		100	92.8	93	95.2	95	3	75-125/20
86-73-7	Fluorene	ND		100	87.7	88	89.2	89	2	75-125/20
118-74-1	Hexachlorobenzene	ND		100	86.0	86	92.5	93	7	75-125/20
87-68-3	Hexachlorobutadiene	ND		100	55.8	56	58.0	58	4	26-125/2
67-72-1	Hexachloroethane	ND		100	41.4	41	42.1	42	2	22-125/2
193-39-5	Indeno(1,2,3-cd)pyrene	ND		100	114	114	115	115	1	54-125/20
78-59-1	Isophorone	ND		100	73.0	73	74.1	74	1	62-125/20
91-57-6	2-Methylnaphthalene	ND		100	65.5	66	69.7	70	6	58-125/20
88-74-4	2-Nitroaniline	ND		100	92.1	92	95.3	95	3	67-125/20
99-09-2	3-Nitroaniline	ND		100	91.6	92	91.9	92	0	53-125/20
100-01-6	4-Nitroaniline	ND		100	103	103	104	104	1	63-125/20
91-20-3	Naphthalene	ND		100	67.7	68	70.1	70	3	55-125/20
98-95-3	Nitrobenzene	ND		100	66.8	67	70.3	70	5	63-125/20
621-64-7	N-Nitroso-di-n-propylamine	ND		100	72.9	73	76.7	77	5	58-125/20
86-30-6	N-Nitrosodiphenylamine	ND		100	100	100	103	103	3	75-125/20
85-01-8	Phenanthrene	ND		100	92.1	92	92.9	93	1	75-125/20
129-00-0	Pyrene	ND		100	90.3	90	95.9	96	6	67-125/20

CAS No.	Surrogate Recoveries	MS	MSD	F11674-3	Limits
367-12-4	2-Fluorophenol	48%	53%	37%	20-125%
4165-62-2	Phenol-d5	39%	44%	30%	10-125%
118-79-6	2,4,6-Tribromophenol	84%	88%	82%	35-140%
4165-60-0	Nitrobenzene-d5	64%	68%	62%	46-125%
321-60-8	2-Fluorobiphenyl	66%	71%	66%	46-125%
1718-51-0	Terphenyl-d14	93%	98%	90%	49-126%

Semivolatile Surrogate Recovery Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
F11674-1	L009918.D	36.0	25.0	86.0	59.0	59.0	88.0
F11674-2	L009919.D	40.0	30.0	86.0	63.0	63.0	94.0
F11674-3	L009920.D	37.0	30.0	82.0	62.0	66.0	90.0
F11674-4	L009923.D	46.0	38.0	90.0	72.0	77.0	97.0
OP4325-BS	L009916.D	60.0	45.0	92.0	83.0	81.0	99.0
OP4325-MB	L009917.D	57.0	44.0	87.0	77.0	72.0	95.0
OP4325-MS	L009921.D	48.0	39.0	84.0	64.0	66.0	93.0
OP4325-MSD	L009922.D	53.0	44.0	88.0	68.0	71.0	98.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	20-125%
S2 = Phenol-d5	10-125%
S3 = 2,4,6-Tribromophenol	35-140%
S4 = Nitrobenzene-d5	46-125%
S5 = 2-Fluorobiphenyl	46-125%
S6 = Terphenyl-d14	49-126%

Blank Spike Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-BS	DD04112.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152

The QC reported here applies to the following samples: Method: SW846 8081A

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
309-00-2	Aldrin	0.5	0.44	88	36-123
319-84-6	alpha-BHC	0.5	0.48	96	71-124
319-85-7	beta-BHC	0.5	0.48	96	66-124
319-86-8	delta-BHC	0.5	0.53	106	48-133
58-89-9	gamma-BHC (Lindane)	0.5	0.50	100	70-125
5103-71-9	alpha-Chlordane	0.5	0.47	94	61-120
5103-74-2	gamma-Chlordane	0.5	0.48	96	61-121
60-57-1	Dieldrin	0.5	0.48	96	68-123
72-54-8	4,4'-DDD	0.5	0.52	104	61-134
72-55-9	4,4'-DDE	0.5	0.48	96	59-131
50-29-3	4,4'-DDT	0.5	0.51	102	65-124
72-20-8	Endrin	0.5	0.25	50	46-160
1031-07-8	Endosulfan sulfate	0.5	0.47	94	67-118
7421-93-4	Endrin aldehyde	0.5	0.12	24	5-120
53494-70-5	Endrin ketone	0.5	0.65	130*	57-128
959-98-8	Endosulfan-I	0.5	0.47	94	68-120
33213-65-9	Endosulfan-II	0.5	0.50	100	74-120
76-44-8	Heptachlor	0.5	0.43	86	46-124
1024-57-3	Heptachlor epoxide	0.5	0.47	94	70-127
72-43-5	Methoxychlor	0.5	0.51	102	66-122

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	86%	47-126%
2051-24-3	Decachlorobiphenyl	103%	13-144%

Blank Spike Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-BS2	DD04170.D	1	12/12/01	SKW	12/11/01	OP4328	GDD154

The QC reported here applies to the following samples: Method: SW846 8081A

F11674-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	82%	47-126%
2051-24-3	Decachlorobiphenyl	109%	13-144%

Method Blank Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-MB	DD04111.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152

The QC reported here applies to the following samples: Method: SW846 8081A

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	87%	47-126%
2051-24-3	Decachlorobiphenyl	105%	13-144%

Method Blank Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-MB2	DD04169.D	1	12/12/01	SKW	12/11/01	OP4328	GDD154

The QC reported here applies to the following samples: Method: SW846 8081A

F11674-3

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	81%	47-126%
2051-24-3	Decachlorobiphenyl	105%	13-144%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-MS	DD04115.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
OP4328-MSD	DD04116.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
F11674-2	DD04114.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152

The QC reported here applies to the following samples: Method: SW846 8081A

F11674-1, F11674-2, F11674-3, F11674-4

CAS No.	Compound	F11674-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
309-00-2	Aldrin	ND		1	0.90	90	0.90	90	0	54-120/20
319-84-6	alpha-BHC	ND		1	1.0	100	1.0	100	0	73-123/20
319-85-7	beta-BHC	ND		1	1.0	100	1.1	110	10	77-120/20
319-86-8	delta-BHC	ND		1	1.2	120	1.2	120	0	44-134/20
58-89-9	gamma-BHC (Lindane)	ND		1	1.1	110	1.1	110	0	80-120/20
5103-71-9	alpha-Chlordane	ND		1	1.0	100	1.0	100	0	72-120/20
5103-74-2	gamma-Chlordane	ND		1	0.98	98	1.0	100	2	70-124/20
60-57-1	Dieldrin	ND		1	1.0	100	1.0	100	0	75-120/20
72-54-8	4,4'-DDD	ND		1	1.1	110	1.2	120	9	66-130/20
72-55-9	4,4'-DDE	ND		1	1.0	100	1.1	110	10	60-133/2
50-29-3	4,4'-DDT	ND		1	1.1	110	1.1	110	0	67-120/2
72-20-8	Endrin	ND		1	0.99	99	1.0	100	1	77-155/20
1031-07-8	Endosulfan sulfate	ND		1	1.1	110	1.2	120	9	59-131/20
7421-93-4	Endrin aldehyde	ND		1	0.32	32	0.36	36	12	5-120/58
53494-70-5	Endrin ketone	ND		1	1.2	120	1.2	120	0	70-120/20
959-98-8	Endosulfan-I	ND		1	0.99	99	1.0	100	1	76-120/20
33213-65-9	Endosulfan-II	ND		1	1.1	110	1.1	110	0	77-121/20
76-44-8	Heptachlor	ND		1	0.96	96	0.96	96	0	62-120/20
1024-57-3	Heptachlor epoxide	ND		1	1.0	100	1.0	100	0	77-120/20
72-43-5	Methoxychlor	ND		1	1.1	110	1.2	120	9	65-128/20

CAS No.	Surrogate Recoveries	MS	MSD	F11674-2	Limits
877-09-8	Tetrachloro-m-xylene	88%	81%	80%	47-126%
2051-24-3	Decachlorobiphenyl	80%	86%	63%	13-144%

Semivolatile Surrogate Recovery Summary

Job Number: F11674
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8081A Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]
F11674-1	DD04113.D	87.0	43.0
F11674-2	DD04114.D	80.0	63.0
F11674-3	DD04172.D	67.0	53.0
F11674-3	DD04117.D	45.0*	30.0
F11674-4	DD04118.D	80.0	51.0
OP4328-BS	DD04112.D	86.0	103.0
OP4328-BS2	DD04170.D	82.0	109.0
OP4328-MB	DD04111.D	87.0	105.0
OP4328-MB2	DD04169.D	81.0	105.0
OP4328-MS	DD04115.D	88.0	80.0
OP4328-MSD	DD04116.D	81.0	86.0

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	47-126%
S2 = Decachlorobiphenyl	13-144%

(a) Recovery from GC signal #1

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01

Metal	RL	IDL	MB raw	final
Aluminum	200	9.44	18.8	<200
Antimony	5.0	2.56	1.9	<5.0
Arsenic	10	3.15	1.7	<10
Barium	200	.94	-0.16	<200
Beryllium	5.0	.22	0.63	<5.0
Cadmium	5.0	.27	-0.54	<5.0
Calcium	1000	10.2	-5.7	<1000
Chromium	10	.35	0.040	<10
Cobalt	50	.55	-0.42	<50
Copper	25	.71	-0.69	<25
Iron	300	9.02	-4.9	<300
Lead	5.0	1.16	2.4	<5.0
Magnesium	5000	25.5	-3.4	<5000
Manganese	15	.26	-0.19	<15
Molybdenum	50	1.01		
Nickel	40	.8	-0.58	<40
Potassium	5000	49	547	<5000
Selenium	10	2.5	-0.31	<10
Silver	10	.59	0.0	<10
Sodium	5000	173	-84	<5000
Thallium	10	2.07	-10	<10
Tin	50	1.03		
Vanadium	50	.58	0.0	<50
Zinc	20	.36	0.0	<20

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01 12/06/01

Metal	F11674-1 Original	MS	Spikelot MPFLICP	% Rec	QC Limits	F11674-1 Original	MSD	Spikelot MPFLICP	% Rec	QC Limits
Aluminum	46600	74300	29000	95.5	70-122	46600	77000	29000	104.8	70-122
Antimony	4.0	891	1000	88.7	66-120	4.0	887	1000	88.3	66-120
Arsenic	15.8	3790	4000	94.4	75-120	15.8	3720	4000	92.6	75-120
Barium	391	3990	4000	90.0	72-120	391	3960	4000	89.2	72-120
Beryllium	4.4	99.1	100	94.7	73-120	4.4	97.4	100	93.0	73-120
Cadmium	0.0	89.0	100	89.0	72-120	0.0	87.3	100	87.3	72-120
Calcium	5920	31100	25000	100.7	37-150	5920	30600	25000	98.7	37-150
Chromium	34.1	403	400	92.2	69-122	34.1	400	400	91.5	69-122
Cobalt	3.9	915	1000	91.1	69-120	3.9	902	1000	89.8	69-120
Copper	2.5	481	500	95.7	70-120	2.5	480	500	95.5	70-120
Iron	5720	32900	27000	100.7	72-122	5720	32600	27000	99.6	72-122
Lead	12.5	935	1000	92.3	70-126	12.5	921	1000	90.9	70-126
Magnesium	2060	27000	25000	99.8	73-127	2060	26600	25000	98.2	73-127
Manganese	16.5	957	1000	94.1	74-122	16.5	948	1000	93.2	74-122
Molybdenum										
Nickel	10.4	931	1000	92.1	69-120	10.4	920	1000	91.0	69-120
Potassium	1260	24300	25000	92.2	61-122	1260	24100	25000	91.4	61-122
Selenium	4.7	3870	4000	96.6	74-120	4.7	3770	4000	94.1	74-120
Silver	0.0	91.7	100	91.7	52-126	0.0	90.5	100	90.5	52-126
Sodium	5750	30400	25000	98.6	56-130	5750	30400	25000	98.6	56-130
Thallium	5.5	3560	4000	88.9	80-122	5.5	3530	4000	88.1	80-122
Tin										
Vanadium	41.7	982	1000	94.0	75-122	41.7	973	1000	93.1	75-122
Zinc	24.1	1020	1000	99.6	68-123	24.1	975	1000	95.1	68-123

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01

Metal	F11674-1 Original	DUP	RPD	QC Limits
Aluminum	46600	50700	8.4	0-23
Antimony	4.0	0.0	200.0(a)	0-20
Arsenic	15.8	9.0	54.8 (a)	0-29
Barium	391	423	7.9	0-20
Beryllium	4.4	4.4	0.0	0-25
Cadmium	0.0	0.0	NC	0-20
Calcium	5920	6380	7.5	0-20
Chromium	34.1	36.7	7.3	0-47
Cobalt	3.9	3.7	5.3	0-30
Copper	2.5	2.3	8.3	0-21
Iron	5720	6170	7.6	0-23
Lead	12.5	11.4	9.2	0-44
Magnesium	2060	2190	6.1	0-20
Manganese	16.5	17.3	4.7	0-30
Molybdenum				
Nickel	10.4	10.4	0.0	0-56
Potassium	1260	1340	6.2	0-20
Selenium	4.7	0.0	200.0(a)	0-36
Silver	0.0	0.98	200.0(a)	0-20
Sodium	5750	6190	7.4	0-20
Thallium	5.5	3.1	55.8 (a)	0-26
Tin				
Vanadium	41.7	44.8	7.2	0-28
Zinc	24.1	26.5	9.5	0-54

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01

Metal	BSP Result	Spikelot MPFLICP	% Rec	QC Limits
Aluminum	30700	29000	105.9	80-120
Antimony	1010	1000	101.0	80-120
Arsenic	4180	4000	104.5	80-120
Barium	3980	4000	99.5	80-120
Beryllium	106	100	106.0	80-120
Cadmium	99.7	100	99.7	80-120
Calcium	27900	25000	111.6	80-120
Chromium	412	400	103.0	80-120
Cobalt	1020	1000	102.0	80-120
Copper	518	500	103.6	80-120
Iron	30400	27000	112.6	80-120
Lead	1030	1000	103.0	80-120
Magnesium	27600	25000	110.4	80-120
Manganese	1050	1000	105.0	80-120
Molybdenum				
Nickel	1030	1000	103.0	80-120
Potassium	25300	25000	101.2	80-120
Selenium	4200	4000	105.0	80-120
Silver	101	100	101.0	80-120
Sodium	24700	25000	98.8	80-120
Thallium	4110	4000	102.8	80-120
Tin				
Vanadium	1050	1000	105.0	80-120
Zinc	1090	1000	109.0	80-120

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01

Metal	F11674-1 Original	SDL 1:5	RPD	QC Limits
Aluminum	46600	49600	6.5	0-10
Antimony	3.95	13.3	235.7(a)	0-10
Arsenic	15.8	0.00	100.0(a)	0-10
Barium	391	430	9.9	0-10
Beryllium	4.38	8.35	90.6 (a)	0-10
Cadmium	0.00	0.00	NC	0-10
Calcium	5920	6940	17.1*(b)	0-10
Chromium	34.1	37.6	10.0	0-10
Cobalt	3.91	3.54	9.5	0-10
Copper	2.47	0.00	100.0(a)	0-10
Iron	5720	6340	10.9*(b)	0-10
Lead	12.5	24.6	96.6 (a)	0-10
Magnesium	2060	2290	11.4*(b)	0-10
Manganese	16.5	17.8	8.1	0-10
Molybdenum				
Nickel	10.4	13.0	25.9 (a)	0-10
Potassium	1260	3670	190.7(a)	0-10
Selenium	4.67	0.00	100.0(a)	0-10
Silver	0.00	0.00	NC	0-10
Sodium	5750	5640	1.9	0-10
Thallium	5.52	0.00	100.0(a)	0-10
Tin				
Vanadium	41.7	46.2	10.7*(b)	0-10
Zinc	24.1	29.2	21.0*(b)	0-10

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	RL	IDL	MB raw	final
Mercury	1.0	.06	-0.19	<1.0

Associated samples MP4042: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01 12/17/01

Metal	F11612-19 Original	DUP	RPD	QC Limits	F11612-19 Original	MS	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	0.0	NC	0-20	0.0	3.2	3	106.7	62-131

Associated samples MP4042: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	F11612-19 Original	MSD	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	3.2	3	106.7	62-131

Associated samples MP4042: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	BSP Result	Spikelot HGFLWS	% Rec	QC Limits
Mercury	3.1	3	103.3	80-120

Associated samples MP4042: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01

Metal	RL	IDL	MB raw	final
Aluminum	200	9.44	18.8	<200
Antimony	5.0	2.56	1.9	<5.0
Arsenic	10	3.15	1.7	<10
Barium	200	.94	-0.16	<200
Beryllium	5.0	.22	0.63	<5.0
Cadmium	5.0	.27	-0.54	<5.0
Calcium	1000	10.2	-5.7	<1000
Chromium	10	.35	0.040	<10
Cobalt	50	.55	-0.42	<50
Copper	25	.71	-0.69	<25
Iron	300	9.02	-4.9	<300
Lead	5.0	1.16	2.4	<5.0
Magnesium	5000	25.5	-3.4	<5000
Manganese	15	.26	-0.19	<15
Molybdenum	50	1.01		
Nickel	40	.8	-0.58	<40
Potassium	5000	49	547	<5000
Selenium	10	2.5	-0.31	<10
Silver	10	.59	0.0	<10
Sodium	5000	173	-84	<5000
Thallium	10	2.07	-10	<10
Tin	50	1.03		
Vanadium	50	.58	0.0	<50
Zinc	20	.36	0.0	<20

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01 12/06/01

Metal	F11674-1 Original	MS	Spikelot MPFLICP	% Rec	QC Limits	F11674-1 Original	MSD	Spikelot MPFLICP	% Rec	QC Limits
Aluminum	46600	74300	29000	95.5	70-122	46600	77000	29000	104.8	70-122
Antimony	4.0	891	1000	88.7	66-120	4.0	887	1000	88.3	66-120
Arsenic	15.8	3790	4000	94.4	75-120	15.8	3720	4000	92.6	75-120
Barium	391	3990	4000	90.0	72-120	391	3960	4000	89.2	72-120
Beryllium	4.4	99.1	100	94.7	73-120	4.4	97.4	100	93.0	73-120
Cadmium	0.0	89.0	100	89.0	72-120	0.0	87.3	100	87.3	72-120
Calcium	5920	31100	25000	100.7	37-150	5920	30600	25000	98.7	37-150
Chromium	34.1	403	400	92.2	69-122	34.1	400	400	91.5	69-122
Cobalt	3.9	915	1000	91.1	69-120	3.9	902	1000	89.8	69-120
Copper	2.5	481	500	95.7	70-120	2.5	480	500	95.5	70-120
Iron	5720	32900	27000	100.7	72-122	5720	32600	27000	99.6	72-122
Lead	12.5	935	1000	92.3	70-126	12.5	921	1000	90.9	70-126
Magnesium	2060	27000	25000	99.8	73-127	2060	26600	25000	98.2	73-127
Manganese	16.5	957	1000	94.1	74-122	16.5	948	1000	93.2	74-122
Molybdenum										
Nickel	10.4	931	1000	92.1	69-120	10.4	920	1000	91.0	69-120
Potassium	1260	24300	25000	92.2	61-122	1260	24100	25000	91.4	61-122
Selenium	4.7	3870	4000	96.6	74-120	4.7	3770	4000	94.1	74-120
Silver	0.0	91.7	100	91.7	52-126	0.0	90.5	100	90.5	52-126
Sodium	5750	30400	25000	98.6	56-130	5750	30400	25000	98.6	56-130
Thallium	5.5	3560	4000	88.9	80-122	5.5	3530	4000	88.1	80-122
Tin										
Vanadium	41.7	982	1000	94.0	75-122	41.7	973	1000	93.1	75-122
Zinc	24.1	1020	1000	99.6	68-123	24.1	975	1000	95.1	68-123

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01

Metal	F11674-1 Original	DUP	RPD	QC Limits
Aluminum	46600	50700	8.4	0-23
Antimony	4.0	0.0	200.0(a)	0-20
Arsenic	15.8	9.0	54.8 (a)	0-29
Barium	391	423	7.9	0-20
Beryllium	4.4	4.4	0.0	0-25
Cadmium	0.0	0.0	NC	0-20
Calcium	5920	6380	7.5	0-20
Chromium	34.1	36.7	7.3	0-47
Cobalt	3.9	3.7	5.3	0-30
Copper	2.5	2.3	8.3	0-21
Iron	5720	6170	7.6	0-23
Lead	12.5	11.4	9.2	0-44
Magnesium	2060	2190	6.1	0-20
Manganese	16.5	17.3	4.7	0-30
Molybdenum				
Nickel	10.4	10.4	0.0	0-56
Potassium	1260	1340	6.2	0-20
Selenium	4.7	0.0	200.0(a)	0-36
Silver	0.0	0.98	200.0(a)	0-20
Sodium	5750	6190	7.4	0-20
Thallium	5.5	3.1	55.8 (a)	0-26
Tin				
Vanadium	41.7	44.8	7.2	0-28
Zinc	24.1	26.5	9.5	0-54

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01

Metal	BSP Result	Spikelot MPFLICP	% Rec	QC Limits
Aluminum	30700	29000	105.9	80-120
Antimony	1010	1000	101.0	80-120
Arsenic	4180	4000	104.5	80-120
Barium	3980	4000	99.5	80-120
Beryllium	106	100	106.0	80-120
Cadmium	99.7	100	99.7	80-120
Calcium	27900	25000	111.6	80-120
Chromium	412	400	103.0	80-120
Cobalt	1020	1000	102.0	80-120
Copper	518	500	103.6	80-120
Iron	30400	27000	112.6	80-120
Lead	1030	1000	103.0	80-120
Magnesium	27600	25000	110.4	80-120
Manganese	1050	1000	105.0	80-120
Molybdenum				
Nickel	1030	1000	103.0	80-120
Potassium	25300	25000	101.2	80-120
Selenium	4200	4000	105.0	80-120
Silver	101	100	101.0	80-120
Sodium	24700	25000	98.8	80-120
Thallium	4110	4000	102.8	80-120
Tin				
Vanadium	1050	1000	105.0	80-120
Zinc	1090	1000	109.0	80-120

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4004
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/06/01

Metal	F11674-1 Original	SDL 1:5	RPD	QC Limits
Aluminum	46600	49600	6.5	0-10
Antimony	3.95	13.3	235.7(a)	0-10
Arsenic	15.8	0.00	100.0(a)	0-10
Barium	391	430	9.9	0-10
Beryllium	4.38	8.35	90.6 (a)	0-10
Cadmium	0.00	0.00	NC	0-10
Calcium	5920	6940	17.1*(b)	0-10
Chromium	34.1	37.6	10.0	0-10
Cobalt	3.91	3.54	9.5	0-10
Copper	2.47	0.00	100.0(a)	0-10
Iron	5720	6340	10.9*(b)	0-10
Lead	12.5	24.6	96.6 (a)	0-10
Magnesium	2060	2290	11.4*(b)	0-10
Manganese	16.5	17.8	8.1	0-10
Molybdenum				
Nickel	10.4	13.0	25.9 (a)	0-10
Potassium	1260	3670	190.7(a)	0-10
Selenium	4.67	0.00	100.0(a)	0-10
Silver	0.00	0.00	NC	0-10
Sodium	5750	5640	1.9	0-10
Thallium	5.52	0.00	100.0(a)	0-10
Tin				
Vanadium	41.7	46.2	10.7*(b)	0-10
Zinc	24.1	29.2	21.0*(b)	0-10

Associated samples MP4004: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	RL	IDL	MB raw	final
Mercury	1.0	.06	-0.19	<1.0

Associated samples MP4042: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01 12/17/01

Metal	F11612-19 Original	DUP	RPD	QC Limits	F11612-19 Original	MS	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	0.0	NC	0-20	0.0	3.2	3	106.7	62-131

Associated samples MP4042: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	F11612-19 Original	MSD	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	3.2	3	106.7	62-131

Associated samples MP4042: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	BSP Result	Spikelot HGFLWS	% Rec	QC Limits
Mercury	3.1	3	103.3	80-120

Associated samples MP4042: F11674-1, F11674-2, F11674-3, F11674-4, F11674-1A, F11674-3A, F11674-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Method Blank Summary

Job Number: F11674
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP633-MB2	GG02999.D	1	12/10/01	JH	12/08/01	OP633	GGG109

The QC reported here applies to the following samples: **Method:** SW846 8151

F11674-1, F11674-3, F11674-4

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	1.0	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	0.20	ug/l	
93-76-5	2,4,5-T	ND	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	70%	10-150%

Semivolatile Surrogate Recovery Summary

Job Number: F11674
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Method: SW846 8151 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
F11674-1	GG03026.D	60.0
F11674-2	GG02967.D	90.0
F11674-3	GG03027.D	69.0
F11674-4	GG03028.D	55.0
OP632-BS	GG02960.D	88.0
OP632-MB	GG02961.D	62.0
OP632-MS	GG02968.D	83.0
OP632-MSD	GG02969.D	87.0
OP633-BS2	GG02998.D	80.0
OP633-MB2	GG02999.D	70.0
OP633-MS	GG03044.D	93.0
OP633-MSD	GG03045.D	94.0
OP633-MB	GG03017.D	80.0

Surrogate Compounds	Recovery Limits
S1 = 2,4-DCAA	10-150%

(a) Recovery from GC signal #1

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

Analyte	Batch ID	RL	MB Result	Units	BSP %Recov	QC Limits
Nitrogen, Nitrate	GP2780/GN8525	0.10	<0.10	mg/l	94.0	90-110%
Nitrogen, Nitrite	GP2780/GN8525	0.10	<0.10	mg/l	92.0	90-110%

Associated Samples:
Batch GP2780: F11674-1, F11674-2, F11674-3, F11674-4

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Nitrogen, Nitrate	GP2780/GN8525	F11661-1	mg/l	0.52	1	1.5	98.0	80-120%
Nitrogen, Nitrate	GP2780/GN8525	F11661-1	mg/l	0.52	1	1.5	98.0	80-120%
Nitrogen, Nitrite	GP2780/GN8525	F11661-1	mg/l	<0.010	1	1.2	120.0	80-120%
Nitrogen, Nitrite	GP2780/GN8525	F11661-1	mg/l	<0.010	1	1.2	120.0	80-120%

Associated Samples:
Batch GP2780: F11674-1, F11674-2, F11674-3, F11674-4

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F11674
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Nitrogen, Nitrate	GP2780/GN8525	F11661-1	mg/l	0.52	0.53	1.9	0-20%
Nitrogen, Nitrite	GP2780/GN8525	F11661-1	mg/l	<0.010	<0.010	0.0	0-20%

Associated Samples:
Batch GP2780: F11674-1, F11674-2, F11674-3, F11674-4

2 COOLERS

ACCUTEST

CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #: F1679
ACCUTEST QUOTE #: 112601A-JF

CLIENT INFORMATION

NAME: KUBAL - FURR + ASSOCIATES
ADDRESS: PO BOX 80247
CITY: SIMPSONVILLE STATE: SC ZIP: 29650
SEND REPORT TO: DIANE ROSSETER
PHONE #: (864) 962-9490

FACILITY INFORMATION

PROJECT NAME: OANI - OAK HAMMOCK
LOCATION: HOLOPAW, FL
PROJECT NO.: 480H01
FAX #: (864) 962-5309

ANALYTICAL INFORMATION

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	TCL VOCs	TCL SVOCs	TCL PESTICIDES	TAL METALS (TOTAL)	HERBICIDES	NITRATE	TAL METALS (DISSOLVED)	LAB USE ONLY
	DP-1	12/3/01	1130	GK/SN	GW	12	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	
	DP-2	12/3/01	1340	GK/SN	GW	11	✓		✓		✓	✓	✓	✓	✓	✓	✓		
	DP-10	12/3/01	1522	GK/SN	GW	12	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	
	DP-22	12/3/01	1650	GK/SN	GW	12	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	
	TRIP BLANK	11/29/01	0815			2	✓					✓							

DATA TURNAROUND INFORMATION

- [x] STANDARD
- [ ] 48 HOUR RUSH
- [ ] 24 HOUR EMERGENCY
- [ ] OTHER

APPROVED BY:

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

EXTENDED TCL LIST AS IN OLM04.2
SEE TASK ORDER 480H01 ADDENDUM
PLEASE FAX COPY OF CHAIN TO SIMPSONVILLE

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	12/3/01 2306	1. SECURE AREA	2.		2. 12-4-01 0:00
RELINQUISHED BY: 3.	DATE TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ 3.8 TEMPERATURE 4.0 °C

Southeast
ACCUTEST.

01/23/02

Technical Report for

Kubal-Furr & Associates

Omni-Oak Hammock

48OH01 HOLOPAW,FL

Accutest Job Number: F11691

Report to:

Kubal-Furr & Associates

Drosseter@ix.netcom.com

ATTN: Diane Rosseter

Total number of pages in report: 65

ACCREDITED IN ACCORDANCE WITH nela

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

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Sample Summary

Kubal-Furr & Associates

Job No: F11691

Omni-Oak Hammock
Project No: 48OH01 HOLOPAW,FL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
F11691-1	12/04/01	16:15	GK	12/06/01	AQ	Ground Water	DP-19
F11691-2	12/04/01	14:05	GK	12/06/01	AQ	Ground Water	DP-11
F11691-3	12/04/01	12:40	GK	12/06/01	AQ	Ground Water	DP-12
F11691-4	12/04/01	10:40	GK	12/06/01	AQ	Ground Water	DP-23
F11691-5	12/04/01	09:05	GK	12/06/01	AQ	Ground Water	DP-9
F11691-6	12/04/01	00:00	GK	12/06/01	AQ	Ground Water	BLIND DUPLICATE
F11691-7	12/04/01	00:00	GK	12/06/01	AQ	Trip Blank Water	TRIP BLANK
F11691-8	12/05/01	08:35	GK	12/06/01	AQ	Ground Water	DP-18
F11691-2A	12/04/01	14:05	GK	12/06/01	AQ	Groundwater Filtered	DP-11
F11691-3A	12/04/01	12:40	GK	12/06/01	AQ	Groundwater Filtered	DP-12
F11691-4A	12/04/01	10:40	GK	12/06/01	AQ	Groundwater Filtered	DP-23
F11691-5A	12/04/01	09:05	GK	12/06/01	AQ	Groundwater Filtered	DP-9
F11691-8A	12/05/01	08:35	GK	12/06/01	AQ	Groundwater Filtered	DP-18

Report of Analysis

Client Sample ID:	DP-19		
Lab Sample ID:	F11691-1	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007500.D	1	12/13/01	JG	n/a	n/a	VB321
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-19		
Lab Sample ID:	F11691-1	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	106%		80-120%

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-19		
Lab Sample ID:	F11691-1	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009929.D	1	12/10/01	ME	12/07/01	OP4336	SL565
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	3.6	5.0	ug/l	J
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-19		
Lab Sample ID:	F11691-1	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	50%		20-125%
4165-62-2	Phenol-d5	36%		10-125%
118-79-6	2,4,6-Tribromophenol	86%		35-140%
4165-60-0	Nitrobenzene-d5	74%		46-125%
321-60-8	2-Fluorobiphenyl	69%		46-125%
1718-51-0	Terphenyl-d14	89%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-19		
Lab Sample ID:	F11691-1	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04122.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		47-126%
2051-24-3	Decachlorobiphenyl	82%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-19		
Lab Sample ID:	F11691-1	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG03043.D	1	12/11/01	ATX	12/07/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	1.0	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	0.20	ug/l	
93-76-5	2,4,5-T	ND	0.20	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	65%		10-150%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-19		
Lab Sample ID:	F11691-1	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	350	200	9.4	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Barium	9.1 B	200	0.94	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.34 B	5.0	0.22	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Calcium	20900	1000	10	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Chromium	0.99 B	10	0.35	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cobalt	0.55 U	50	0.55	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Copper	0.71 U	25	0.71	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Iron	1080	300	9.0	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Lead	1.7 B	5.0	1.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Magnesium	1460 B	5000	26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Manganese	20.5	15	0.26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	0.80 U	40	0.80	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Potassium	727 B	5000	49	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Selenium	2.5 U	10	2.5	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Sodium	9260	5000	170	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Vanadium	1.4 B	50	0.58	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Zinc	1.1 B	20	0.36	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-19		
Lab Sample ID:	F11691-1	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/06/01 SJL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007501.D	1	12/13/01	JG	n/a	n/a	VB321
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009932.D	1	12/10/01	ME	12/07/01	OP4336	SL565
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		20-125%
4165-62-2	Phenol-d5	27%		10-125%
118-79-6	2,4,6-Tribromophenol	73%		35-140%
4165-60-0	Nitrobenzene-d5	85%		46-125%
321-60-8	2-Fluorobiphenyl	73%		46-125%
1718-51-0	Terphenyl-d14	79%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04123.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.10	ug/l	
319-84-6	alpha-BHC	ND	0.10	ug/l	
319-85-7	beta-BHC	ND	0.10	ug/l	
319-86-8	delta-BHC	ND	0.10	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.10	ug/l	
5103-71-9	alpha-Chlordane	ND	0.20	ug/l	
5103-74-2	gamma-Chlordane	ND	0.20	ug/l	
60-57-1	Dieldrin	ND	0.10	ug/l	
72-54-8	4,4'-DDD	ND	0.20	ug/l	
72-55-9	4,4'-DDE	ND	0.20	ug/l	
50-29-3	4,4'-DDT	ND	0.20	ug/l	
72-20-8	Endrin	ND	0.20	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.20	ug/l	
7421-93-4	Endrin aldehyde	ND	0.20	ug/l	
53494-70-5	Endrin ketone	ND	0.20	ug/l	
959-98-8	Endosulfan-I	ND	0.10	ug/l	
33213-65-9	Endosulfan-II	ND	0.20	ug/l	
76-44-8	Heptachlor	ND	0.10	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.10	ug/l	
72-43-5	Methoxychlor	ND	0.40	ug/l	
8001-35-2	Toxaphene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	72%		47-126%
2051-24-3	Decachlorobiphenyl	15%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GG03029.D	1	12/11/01	ATX	12/08/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	10	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	2.0	ug/l	
93-76-5	2,4,5-T	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	49%		10-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	191000	200	9.4	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Arsenic	81.3	10	3.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Barium	2150	200	0.94	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Beryllium	18.6	5.0	0.22	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cadmium	4.2 B	5.0	0.27	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Calcium	28900	1000	10	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Chromium	224	10	0.35	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cobalt	18.0 B	50	0.55	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Copper	18.5 B	25	0.71	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Iron	34300	300	9.0	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Lead	71.3	5.0	1.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Magnesium	4380 B	5000	26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Manganese	35.7	15	0.26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	44.2	40	0.80	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Potassium	9290	5000	49	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Selenium	13.0	10	2.5	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Sodium	8320	5000	170	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Vanadium	266	50	0.58	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Zinc	91.2	20	0.36	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/06/01 SJL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007502.D	1	12/13/01	JG	n/a	n/a	VB321
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	105%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009933.D	1	12/10/01	ME	12/07/01	OP4336	SL565
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		20-125%
4165-62-2	Phenol-d5	28%		10-125%
118-79-6	2,4,6-Tribromophenol	75%		35-140%
4165-60-0	Nitrobenzene-d5	77%		46-125%
321-60-8	2-Fluorobiphenyl	72%		46-125%
1718-51-0	Terphenyl-d14	89%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04124.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		47-126%
2051-24-3	Decachlorobiphenyl	26%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GG03030.D	1	12/11/01	ATX	12/08/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	10	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	2.0	ug/l	
93-76-5	2,4,5-T	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	81%		10-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	16300	200	9.4	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Barium	35.7 B	200	0.94	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.64 B	5.0	0.22	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Calcium	5810	1000	10	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Chromium	18.1	10	0.35	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cobalt	2.6 B	50	0.55	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Copper	1.9 B	25	0.71	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Iron	3430	300	9.0	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Lead	12.2	5.0	1.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Magnesium	2510 B	5000	26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Manganese	9.5 B	15	0.26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	5.2 B	40	0.80	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Potassium	7120	5000	49	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Selenium	2.5 U	10	2.5	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Sodium	13700	5000	170	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Vanadium	23.4 B	50	0.58	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Zinc	19.0 B	20	0.36	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/06/01 SJL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007503.D	1	12/13/01	JG	n/a	n/a	VB321
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	2.5	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	106%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009934.D	1	12/10/01	ME	12/07/01	OP4336	SL565
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	31%		20-125%
4165-62-2	Phenol-d5	23%		10-125%
118-79-6	2,4,6-Tribromophenol	67%		35-140%
4165-60-0	Nitrobenzene-d5	67%		46-125%
321-60-8	2-Fluorobiphenyl	63%		46-125%
1718-51-0	Terphenyl-d14	76%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04125.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	77%		47-126%
2051-24-3	Decachlorobiphenyl	31%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GG03031.D	1	12/11/01	ATX	12/08/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	10	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	2.0	ug/l	
93-76-5	2,4,5-T	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	79%		10-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	71800	200	9.4	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Arsenic	27.3	10	3.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Barium	1430	200	0.94	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Beryllium	11.1	5.0	0.22	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cadmium	3.9 B	5.0	0.27	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Calcium	23300	1000	10	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Chromium	104	10	0.35	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cobalt	15.4 B	50	0.55	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Copper	5.5 B	25	0.71	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Iron	16500	300	9.0	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Lead	24.9	5.0	1.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Magnesium	3640 B	5000	26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Manganese	27.4	15	0.26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	28.2 B	40	0.80	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Potassium	5140	5000	49	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Selenium	3.2 B	10	2.5	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Sodium	9760	5000	170	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Vanadium	131	50	0.58	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Zinc	46.7	20	0.36	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/06/01 SJL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007504.D	1	12/13/01	JG	n/a	n/a	VB321
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	107%		80-120%

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N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009935.D	1	12/10/01	ME	12/07/01	OP4336	SL565
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	29%		20-125%
4165-62-2	Phenol-d5	20%		10-125%
118-79-6	2,4,6-Tribromophenol	60%		35-140%
4165-60-0	Nitrobenzene-d5	72%		46-125%
321-60-8	2-Fluorobiphenyl	67%		46-125%
1718-51-0	Terphenyl-d14	69%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04126.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	66%		47-126%
2051-24-3	Decachlorobiphenyl	16%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GG03032.D	1	12/11/01	ATX	12/08/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	10	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	2.0	ug/l	
93-76-5	2,4,5-T	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	42%		10-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	82500	200	9.4	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Arsenic	28.5	10	3.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Barium	1140	200	0.94	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Beryllium	14.9	5.0	0.22	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cadmium	2.1 B	5.0	0.27	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Calcium	33200	1000	10	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Chromium	108	10	0.35	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cobalt	11.8 B	50	0.55	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Copper	3.7 B	25	0.71	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Iron	13100	300	9.0	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Lead	38.5	5.0	1.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Magnesium	4080 B	5000	26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Manganese	18.6	15	0.26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/17/01	12/18/01	LIR	SW846 7470A	EPA 245.1
Nickel	31.3 B	40	0.80	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Potassium	8260	5000	49	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Selenium	5.4 B	10	2.5	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Sodium	10400	5000	170	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Vanadium	142	50	0.58	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Zinc	29.1	20	0.36	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/06/01 SJL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BLIND DUPLICATE		
Lab Sample ID:	F11691-6	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007505.D	1	12/13/01	JG	n/a	n/a	VB321
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BLIND DUPLICATE		
Lab Sample ID:	F11691-6	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	104%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BLIND DUPLICATE		
Lab Sample ID:	F11691-6	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009936.D	1	12/10/01	ME	12/07/01	OP4336	SL565
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	2.9	5.0	ug/l	J
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BLIND DUPLICATE		
Lab Sample ID:	F11691-6	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		20-125%
4165-62-2	Phenol-d5	28%		10-125%
118-79-6	2,4,6-Tribromophenol	94%		35-140%
4165-60-0	Nitrobenzene-d5	61%		46-125%
321-60-8	2-Fluorobiphenyl	60%		46-125%
1718-51-0	Terphenyl-d14	91%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BLIND DUPLICATE		
Lab Sample ID:	F11691-6	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04127.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2							

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		47-126%
2051-24-3	Decachlorobiphenyl	80%		13-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BLIND DUPLICATE		
Lab Sample ID:	F11691-6	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG03046.D	1	12/11/01	ATX	12/07/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	1.0	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	0.20	ug/l	
93-76-5	2,4,5-T	ND	0.20	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	59%		10-150%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BLIND DUPLICATE		
Lab Sample ID:	F11691-6	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	314	200	9.4	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Barium	9.9 B	200	0.94	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.36 B	5.0	0.22	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Calcium	22100	1000	10	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Chromium	0.93 B	10	0.35	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cobalt	0.55 U	50	0.55	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Copper	0.71 U	25	0.71	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Iron	1170	300	9.0	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Lead	2.0 B	5.0	1.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Magnesium	1580 B	5000	26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Manganese	21.7	15	0.26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/20/01	12/20/01	LIR	SW846 7470A	EPA 245.1
Nickel	0.80 U	40	0.80	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Potassium	747 B	5000	49	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Selenium	2.5 U	10	2.5	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Sodium	10100	5000	170	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Vanadium	1.6 B	50	0.58	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Zinc	0.65 B	20	0.36	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	BLIND DUPLICATE		
Lab Sample ID:	F11691-6	Date Sampled:	12/04/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/06/01 SJL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F11691-7	Date Sampled:	12/04/01
Matrix:	AQ - Trip Blank Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007497.D	1	12/13/01	JG	n/a	n/a	VB321
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F11691-7	Date Sampled:	12/04/01
Matrix:	AQ - Trip Blank Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	103%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8	Date Sampled:	12/05/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0007506.D	1	12/13/01	JG	n/a	n/a	VB321
Run #2							

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	25.2	50	ug/l	J
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8	Date Sampled:	12/05/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q

Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q

Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q

Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q

Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q

Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q

Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q

Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

VOA CLP List

CAS No.	Compound	Result	RL	Units	Q

Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8	Date Sampled:	12/05/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L009937.D	1	12/10/01	ME	12/07/01	OP4336	SL565
Run #2							

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8	Date Sampled:	12/05/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

ABN CLP List

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		20-125%
4165-62-2	Phenol-d5	22%		10-125%
118-79-6	2,4,6-Tribromophenol	67%		35-140%
4165-60-0	Nitrobenzene-d5	72%		46-125%
321-60-8	2-Fluorobiphenyl	74%		46-125%
1718-51-0	Terphenyl-d14	63%		49-126%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8	Date Sampled:	12/05/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8081A SW846 3510C	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04128.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
Run #2	DD04171.D	1	12/12/01	SKW	12/11/01	OP4328	GDD154

Pesticide TCL List

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	49%	57%	47-126%
2051-24-3	Decachlorobiphenyl	8%	9% [a]	13-144%

(a) Confirmed by re-extraction and reanalysis.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8	Date Sampled:	12/05/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
Method:	SW846 8151	Percent Solids:	n/a
Project:	Omni-Oak Hammock		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GG03033.D	1	12/11/01	ATX	12/08/01	T:OP633	T:GGG109
Run #2							

Herbicide List

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	10	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	2.0	ug/l	
93-76-5	2,4,5-T	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	27%		10-150%

(a) Elevated reporting limits due to matrix interference, dilution required during sample prep.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8	Date Sampled:	12/05/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	190000	200	9.4	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Arsenic	46.8	10	3.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Barium	1950	200	0.94	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Beryllium	9.2	5.0	0.22	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cadmium	5.2	5.0	0.27	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Calcium	40500	1000	10	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Chromium	221	10	0.35	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Cobalt	12.5 B	50	0.55	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Copper	22.5 B	25	0.71	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Iron	14600	300	9.0	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Lead	103	5.0	1.2	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Magnesium	3330 B	5000	26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Manganese	18.1	15	0.26	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/20/01	12/20/01	LIR	SW846 7470A	EPA 245.1
Nickel	66.6	40	0.80	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Potassium	30800	5000	49	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Selenium	18.4	10	2.5	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Sodium	35500	5000	170	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Vanadium	286	50	0.58	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A
Zinc	56.4	20	0.36	ug/l	1	12/07/01	12/10/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8	Date Sampled:	12/05/01
Matrix:	AQ - Ground Water	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	12/06/01 SJL	EPA 300/SW846 9056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DP-11		
Lab Sample ID:	F11691-2A	Date Sampled:	12/04/01
Matrix:	AQ - Groundwater Filtered	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	4950	200	9.4	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Arsenic	21.0	10	3.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Barium	60.5 B	200	0.94	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.39 B	5.0	0.22	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Calcium	6310	1000	10	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Chromium	13.9	10	0.35	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cobalt	0.91 B	50	0.55	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Copper	11.6 B	25	0.71	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Iron	695	300	9.0	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Lead	3.1 B	5.0	1.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Magnesium	1650 B	5000	26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Manganese	6.5 B	15	0.26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/20/01	12/20/01	LIR	SW846 7470A	EPA 245.1
Nickel	2.1 B	40	0.80	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Potassium	6120	5000	49	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Selenium	2.5 U	10	2.5	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Sodium	9900	5000	170	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Vanadium	67.8	50	0.58	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Zinc	28.2	20	0.36	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-12		
Lab Sample ID:	F11691-3A	Date Sampled:	12/04/01
Matrix:	AQ - Groundwater Filtered	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	2410	200	9.4	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Barium	15.2 B	200	0.94	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.22 U	5.0	0.22	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Calcium	3870	1000	10	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Chromium	5.7 B	10	0.35	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cobalt	0.68 B	50	0.55	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Copper	6.5 B	25	0.71	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Iron	1100	300	9.0	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Lead	4.0 B	5.0	1.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Magnesium	1460 B	5000	26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Manganese	6.2 B	15	0.26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/20/01	12/20/01	LIR	SW846 7470A	EPA 245.1
Nickel	2.0 B	40	0.80	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Potassium	5690	5000	49	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Selenium	2.7 B	10	2.5	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Sodium	16300	5000	170	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Vanadium	10.0 B	50	0.58	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Zinc	38.9	20	0.36	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-23		
Lab Sample ID:	F11691-4A	Date Sampled:	12/04/01
Matrix:	AQ - Groundwater Filtered	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	859	200	9.4	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Arsenic	3.2 U	10	3.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Barium	50.7 B	200	0.94	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.25 B	5.0	0.22	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Calcium	8450	1000	10	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Chromium	3.3 B	10	0.35	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cobalt	1.2 B	50	0.55	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Copper	1.9 B	25	0.71	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Iron	287 B	300	9.0	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Lead	1.9 B	5.0	1.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Magnesium	2120 B	5000	26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Manganese	10.4 B	15	0.26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/20/01	12/20/01	LIR	SW846 7470A	EPA 245.1
Nickel	2.4 B	40	0.80	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Potassium	4200 B	5000	49	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Selenium	2.8 B	10	2.5	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Sodium	14900	5000	170	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Vanadium	36.8 B	50	0.58	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Zinc	21.9	20	0.36	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-9		
Lab Sample ID:	F11691-5A	Date Sampled:	12/04/01
Matrix:	AQ - Groundwater Filtered	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	1970	200	9.4	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Arsenic	4.3 B	10	3.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Barium	42.1 B	200	0.94	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.42 B	5.0	0.22	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Calcium	5120	1000	10	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Chromium	3.4 B	10	0.35	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cobalt	0.55 U	50	0.55	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Copper	2.0 B	25	0.71	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Iron	276 B	300	9.0	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Lead	3.2 B	5.0	1.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Magnesium	2030 B	5000	26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Manganese	4.2 B	15	0.26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/20/01	12/20/01	LIR	SW846 7470A	EPA 245.1
Nickel	1.5 B	40	0.80	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Potassium	9360	5000	49	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Selenium	2.8 B	10	2.5	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Sodium	20300	5000	170	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Vanadium	62.1	50	0.58	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Zinc	10.1 B	20	0.36	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	DP-18		
Lab Sample ID:	F11691-8A	Date Sampled:	12/05/01
Matrix:	AQ - Groundwater Filtered	Date Received:	12/06/01
		Percent Solids:	n/a
Project:	Omni-Oak Hammock		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	16000	200	9.4	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Antimony	2.6 U	5.0	2.6	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Arsenic	6.2 B	10	3.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Barium	166 B	200	0.94	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Beryllium	0.83 B	5.0	0.22	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cadmium	0.27 U	5.0	0.27	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Calcium	13500	1000	10	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Chromium	63.7	10	0.35	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Cobalt	1.4 B	50	0.55	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Copper	7.9 B	25	0.71	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Iron	1160	300	9.0	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Lead	11.0	5.0	1.2	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Magnesium	729 B	5000	26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Manganese	5.0 B	15	0.26	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	0.060	ug/l	1	12/20/01	12/20/01	LIR	SW846 7470A	EPA 245.1
Nickel	9.2 B	40	0.80	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Potassium	21900	5000	49	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Selenium	4.1 B	10	2.5	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Silver	0.59 U	10	0.59	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Sodium	34400	5000	170	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Thallium	2.1 U	10	2.1	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Vanadium	126	50	0.58	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A
Zinc	23.3	20	0.36	ug/l	1	12/11/01	12/11/01	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Blank Spike Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB321-BS	B0007488.D	1	12/13/01	JG	n/a	n/a	VB321

The QC reported here applies to the following samples: Method: SW846 8260B

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-7, F11691-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	121	97	67-125
71-43-2	Benzene	25	26.8	107	75-125
75-27-4	Bromodichloromethane	25	28.0	112	75-125
75-25-2	Bromoform	25	31.4	126*	72-125
108-90-7	Chlorobenzene	25	25.0	100	75-125
75-00-3	Chloroethane	25	24.0	96	58-136
67-66-3	Chloroform	25	26.4	106	75-125
75-15-0	Carbon disulfide	125	129	103	48-142
56-23-5	Carbon tetrachloride	25	32.5	130	75-136
110-82-7	Cyclohexane	25	30.3	121	50-150 [a]
75-34-3	1,1-Dichloroethane	25	25.9	104	75-125
75-35-4	1,1-Dichloroethylene	25	28.9	116	67-138
96-12-8	1,2-Dibromo-3-chloropropane	25	24.2	97	64-125
106-93-4	1,2-Dibromoethane	25	25.0	100	75-125
107-06-2	1,2-Dichloroethane	25	23.5	94	75-125
78-87-5	1,2-Dichloropropane	25	27.6	110	75-125
124-48-1	Dibromochloromethane	25	27.9	112	75-125
75-71-8	Dichlorodifluoromethane	25	25.2	101	48-171
156-59-2	cis-1,2-Dichloroethylene	25	26.7	107	75-129
10061-01-5	cis-1,3-Dichloropropene	25	26.4	106	75-125
541-73-1	m-Dichlorobenzene	25	24.1	96	75-125
95-50-1	o-Dichlorobenzene	25	23.7	95	75-125
106-46-7	p-Dichlorobenzene	25	24.3	97	75-125
156-60-5	trans-1,2-Dichloroethylene	25	26.2	105	73-125
10061-02-6	trans-1,3-Dichloropropene	25	24.6	98	75-125
100-41-4	Ethylbenzene	25	25.0	100	68-135
76-13-1	Freon 113	25	28.0	112	75-125
591-78-6	2-Hexanone	125	124	99	68-125
98-82-8	Isopropylbenzene	25	26.4	106	75-125
108-10-1	4-Methyl-2-pentanone	125	127	102	75-125
79-20-9	Methyl Acetate	125	131	105	50-150 [a]
74-83-9	Methyl bromide	25	21.6	86	59-146
74-87-3	Methyl chloride	25	25.3	101	50-142
108-87-2	Methylcyclohexane	25	28.7	115	50-150 [a]
75-09-2	Methylene chloride	25	24.8	99	69-125
78-93-3	Methyl ethyl ketone	125	127	102	70-125

Blank Spike Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB321-BS	B0007488.D	1	12/13/01	JG	n/a	n/a	VB321

The QC reported here applies to the following samples: Method: SW846 8260B

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-7, F11691-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	25.8	103	75-125
100-42-5	Styrene	25	26.0	104	75-125
71-55-6	1,1,1-Trichloroethane	25	26.7	107	75-132
79-34-5	1,1,2,2-Tetrachloroethane	25	23.8	95	75-125
79-00-5	1,1,2-Trichloroethane	25	24.0	96	75-125
120-82-1	1,2,4-Trichlorobenzene	25	26.1	104	75-125
127-18-4	Tetrachloroethylene	25	26.9	108	75-126
108-88-3	Toluene	25	26.0	104	75-125
79-01-6	Trichloroethylene	25	26.2	105	75-125
75-69-4	Trichlorofluoromethane	25	25.5	102	55-162
75-01-4	Vinyl chloride	25	25.2	101	60-147
1330-20-7	Xylene (total)	75	76.3	102	75-125

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	80-120%
2037-26-5	Toluene-D8	99%	80-120%
460-00-4	4-Bromofluorobenzene	98%	80-120%

(a) Advisory control limits.

Method Blank Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB321-MB	B0007489.D	1	12/13/01	JG	n/a	n/a	VB321

The QC reported here applies to the following samples: Method: SW846 8260B

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-7, F11691-8

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
110-82-7	Cyclohexane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
76-13-1	Freon 113	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
79-20-9	Methyl Acetate	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	

Method Blank Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB321-MB	B0007489.D	1	12/13/01	JG	n/a	n/a	VB321

The QC reported here applies to the following samples: Method: SW846 8260B

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-7, F11691-8

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	80-120%
2037-26-5	Toluene-D8	99%	80-120%
460-00-4	4-Bromofluorobenzene	106%	80-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11681-1MS	B0007498.D	1	12/13/01	JG	n/a	n/a	VB321
F11681-1MSD	B0007499.D	1	12/13/01	JG	n/a	n/a	VB321
F11681-1	B0007491.D	1	12/13/01	JG	n/a	n/a	VB321

The QC reported here applies to the following samples: Method: SW846 8260B

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-7, F11691-8

CAS No.	Compound	F11681-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	130	104	133	106	2	61-125/15
71-43-2	Benzene	ND		25	26.6	106	25.8	103	3	75-125/15
75-27-4	Bromodichloromethane	ND		25	26.8	107	26.3	105	2	75-125/15
75-25-2	Bromoform	ND		25	27.8	111	27.7	111	0	66-125/15
108-90-7	Chlorobenzene	ND		25	24.7	99	24.5	98	1	75-125/15
75-00-3	Chloroethane	ND		25	23.9	96	22.9	92	4	53-125/15
67-66-3	Chloroform	0.76	J	25	26.9	105	26.8	104	0	75-125/15
75-15-0	Carbon disulfide	ND		125	126	101	124	99	2	51-138/15
56-23-5	Carbon tetrachloride	ND		25	31.2	125	30.8	123	1	74-131/15
110-82-7	Cyclohexane	ND		25	30.2	121	29.9	120	1	50-150/30 [a]
75-34-3	1,1-Dichloroethane	ND		25	26.4	106	25.0	100	5	75-125/15
75-35-4	1,1-Dichloroethylene	ND		25	27.5	110	27.5	110	0	66-140/15
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	23.3	93	24.1	96	3	57-125/15
106-93-4	1,2-Dibromoethane	ND		25	24.9	100	25.0	100	0	75-125/15
107-06-2	1,2-Dichloroethane	ND		25	23.2	93	22.7	91	2	75-125/15
78-87-5	1,2-Dichloropropane	ND		25	27.6	110	28.0	112	1	75-125/15
124-48-1	Dibromochloromethane	ND		25	26.7	107	26.9	108	1	75-125/15
75-71-8	Dichlorodifluoromethane	ND		25	20.0	80	20.7	83	3	45-182/15
156-59-2	cis-1,2-Dichloroethylene	ND		25	26.7	107	26.1	104	2	75-136/15
10061-01-5	cis-1,3-Dichloropropene	ND		25	24.6	98	25.0	100	2	71-125/15
541-73-1	m-Dichlorobenzene	ND		25	23.7	95	23.8	95	0	75-125/15
95-50-1	o-Dichlorobenzene	ND		25	23.3	93	23.4	94	0	75-125/15
106-46-7	p-Dichlorobenzene	ND		25	23.7	95	23.9	96	1	75-125/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	26.3	105	25.6	102	3	73-125/15
10061-02-6	trans-1,3-Dichloropropene	ND		25	22.8	91	22.8	91	0	62-125/15
100-41-4	Ethylbenzene	ND		25	24.0	96	24.6	98	2	75-125/15
76-13-1	Freon 113	ND		25	27.8	111	26.7	107	4	69-131/15
591-78-6	2-Hexanone	ND		125	122	98	127	102	4	71-125/15
98-82-8	Isopropylbenzene	ND		25	25.7	103	25.7	103	0	74-125/15
108-10-1	4-Methyl-2-pentanone	ND		125	125	100	129	103	3	75-125/15
79-20-9	Methyl Acetate	ND		125	135	108	135	108	0	50-150/30 [a]
74-83-9	Methyl bromide	ND		25	20.2	81	19.5	78	4	67-146/15
74-87-3	Methyl chloride	ND		25	23.3	93	23.3	93	0	47-160/15
108-87-2	Methylcyclohexane	ND		25	27.4	110	26.8	107	2	50-150/30 [a]
75-09-2	Methylene chloride	ND		25	24.6	98	24.1	96	2	69-125/15
78-93-3	Methyl ethyl ketone	ND		125	131	105	131	105	0	70-125/15

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F11681-1MS	B0007498.D	1	12/13/01	JG	n/a	n/a	VB321
F11681-1MSD	B0007499.D	1	12/13/01	JG	n/a	n/a	VB321
F11681-1	B0007491.D	1	12/13/01	JG	n/a	n/a	VB321

The QC reported here applies to the following samples: Method: SW846 8260B

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-7, F11691-8

CAS No.	Compound	F11681-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	ND		25	25.3	101	25.3	101	0	75-125/15
100-42-5	Styrene	ND		25	24.3	97	24.8	99	2	69-126/15
71-55-6	1,1,1-Trichloroethane	ND		25	26.6	106	25.8	103	3	75-131/15
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	24.3	97	24.0	96	1	75-125/15
79-00-5	1,1,2-Trichloroethane	ND		25	24.1	96	24.4	98	1	75-125/15
120-82-1	1,2,4-Trichlorobenzene	ND		25	24.1	96	24.7	99	2	74-125/15
127-18-4	Tetrachloroethylene	ND		25	25.2	101	25.9	104	3	75-125/15
108-88-3	Toluene	ND		25	25.2	101	25.5	102	1	75-125/15
79-01-6	Trichloroethylene	ND		25	25.8	103	26.1	104	1	75-125/15
75-69-4	Trichlorofluoromethane	ND		25	22.2	89	22.0	88	1	60-139/3
75-01-4	Vinyl chloride	ND		25	22.8	91	22.7	91	0	52-169/1
1330-20-7	Xylene (total)	ND		75	74.5	99	73.7	98	1	75-125/15

CAS No.	Surrogate Recoveries	MS	MSD	F11681-1	Limits
1868-53-7	Dibromofluoromethane	102%	101%	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	99%	97%	80-120%
2037-26-5	Toluene-D8	98%	99%	98%	80-120%
460-00-4	4-Bromofluorobenzene	100%	100%	106%	80-120%

(a) Advisory control limits.

Volatile Surrogate Recovery Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F11691-1	B0007500.D	102.0	98.0	97.0	106.0
F11691-2	B0007501.D	102.0	99.0	97.0	102.0
F11691-3	B0007502.D	102.0	99.0	98.0	105.0
F11691-4	B0007503.D	102.0	99.0	97.0	106.0
F11691-5	B0007504.D	101.0	99.0	98.0	107.0
F11691-6	B0007505.D	101.0	100.0	100.0	104.0
F11691-7	B0007497.D	103.0	101.0	97.0	103.0
F11691-8	B0007506.D	103.0	100.0	97.0	106.0
F11681-1MS	B0007498.D	102.0	101.0	98.0	100.0
F11681-1MSD	B0007499.D	101.0	99.0	99.0	100.0
VB321-BS	B0007488.D	102.0	101.0	99.0	98.0
VB321-MB	B0007489.D	102.0	101.0	99.0	106.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Blank Spike Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4336-BS	L009927.D	1	12/10/01	ME	12/07/01	OP4336	SL565

The QC reported here applies to the following samples: Method: SW846 8270C

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-57-8	2-Chlorophenol	50	40.7	81	60-125
59-50-7	4-Chloro-3-methyl phenol	50	40.7	81	70-125
120-83-2	2,4-Dichlorophenol	50	41.5	83	68-125
105-67-9	2,4-Dimethylphenol	50	25.4	51	42-125
51-28-5	2,4-Dinitrophenol	50	22.6	45	10-125
534-52-1	4,6-Dinitro-o-cresol	50	45.0	90	46-125
95-48-7	2-Methylphenol	50	34.5	69	51-125
	3&4-Methylphenol	100	66.5	67	46-125
88-75-5	2-Nitrophenol	50	41.7	83	64-125
100-02-7	4-Nitrophenol	50	21.8	44	17-125
87-86-5	Pentachlorophenol	50	47.5	95	60-125
108-95-2	Phenol	50	21.1	42	16-125
95-95-4	2,4,5-Trichlorophenol	50	43.9	88	74-125
88-06-2	2,4,6-Trichlorophenol	50	42.1	84	70-125
83-32-9	Acenaphthene	50	42.1	84	70-125
208-96-8	Acenaphthylene	50	46.3	93	75-125
120-12-7	Anthracene	50	44.2	88	75-125
56-55-3	Benzo(a)anthracene	50	42.4	85	75-125
50-32-8	Benzo(a)pyrene	50	45.1	90	75-125
205-99-2	Benzo(b)fluoranthene	50	47.4	95	75-125
191-24-2	Benzo(g,h,i)perylene	50	38.4	77	57-135
207-08-9	Benzo(k)fluoranthene	50	43.9	88	75-125
101-55-3	4-Bromophenyl phenyl ether	50	43.5	87	74-125
85-68-7	Butyl benzyl phthalate	50	47.5	95	38-134
91-58-7	2-Chloronaphthalene	50	43.5	87	59-125
106-47-8	4-Chloroaniline	50	44.1	88	31-125
86-74-8	Carbazole	50	44.9	90	75-125
218-01-9	Chrysene	50	41.5	83	75-125
111-91-1	bis(2-Chloroethoxy)methane	50	42.1	84	64-125
111-44-4	bis(2-Chloroethyl)ether	50	41.0	82	62-125
108-60-1	bis(2-Chloroisopropyl)ether	50	41.6	83	60-125
7005-72-3	4-Chlorophenyl phenyl ether	50	44.6	89	75-125
121-14-2	2,4-Dinitrotoluene	50	48.6	97	73-125
606-20-2	2,6-Dinitrotoluene	50	47.4	95	75-125
91-94-1	3,3'-Dichlorobenzidine	50	42.3	85	55-125
53-70-3	Dibenzo(a,h)anthracene	50	39.9	80	64-130

Blank Spike Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4336-BS	L009927.D	1	12/10/01	ME	12/07/01	OP4336	SL565

The QC reported here applies to the following samples: Method: SW846 8270C

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
132-64-9	Dibenzofuran	50	41.9	84	73-125
84-74-2	Di-n-butyl phthalate	50	48.1	96	47-140
117-84-0	Di-n-octyl phthalate	50	51.1	102	52-125
84-66-2	Diethyl phthalate	50	46.6	93	59-125
131-11-3	Dimethyl phthalate	50	45.2	90	24-142
117-81-7	bis(2-Ethylhexyl)phthalate	50	49.5	99	71-125
206-44-0	Fluoranthene	50	44.2	88	75-125
86-73-7	Fluorene	50	43.5	87	75-125
118-74-1	Hexachlorobenzene	50	43.9	88	74-125
87-68-3	Hexachlorobutadiene	50	34.5	69	22-125
77-47-4	Hexachlorocyclopentadiene	50	20.1	40	10-125
67-72-1	Hexachloroethane	50	37.6	75	23-125
193-39-5	Indeno(1,2,3-cd)pyrene	50	40.3	81	53-130
78-59-1	Isophorone	50	44.1	88	63-125
91-57-6	2-Methylnaphthalene	50	39.4	79	51-125
88-74-4	2-Nitroaniline	50	44.3	89	75-125
99-09-2	3-Nitroaniline	50	43.1	86	62-125
100-01-6	4-Nitroaniline	50	46.0	92	67-125
91-20-3	Naphthalene	50	41.3	83	53-125
98-95-3	Nitrobenzene	50	43.8	88	67-125
621-64-7	N-Nitroso-di-n-propylamine	50	45.3	91	61-125
86-30-6	N-Nitrosodiphenylamine	50	45.9	92	75-125
85-01-8	Phenanthrene	50	42.2	84	75-125
129-00-0	Pyrene	50	41.7	83	67-125

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	59%	20-125%
4165-62-2	Phenol-d5	38%	10-125%
118-79-6	2,4,6-Tribromophenol	89%	35-140%
4165-60-0	Nitrobenzene-d5	87%	46-125%
321-60-8	2-Fluorobiphenyl	83%	46-125%
1718-51-0	Terphenyl-d14	90%	49-126%

Method Blank Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4336-MB	L009928.D	1	12/10/01	ME	12/07/01	OP4336	SL565

The QC reported here applies to the following samples: Method: SW846 8270C

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	25	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
95-48-7	2-Methylphenol	ND	5.0	ug/l	
	3&4-Methylphenol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	25	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
98-86-2	Acetophenone	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
1912-24-9	Atrazine	ND	5.0	ug/l	
100-52-7	Benzaldehyde	ND	25	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
105-60-2	Caprolactam	ND	5.0	ug/l	
86-74-8	Carbazole	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	

Method Blank Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4336-MB	L009928.D	1	12/10/01	ME	12/07/01	OP4336	SL565

The QC reported here applies to the following samples: Method: SW846 8270C

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	Result	RL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	59%	20-125%
4165-62-2	Phenol-d5	44%	10-125%
118-79-6	2,4,6-Tribromophenol	85%	35-140%

Method Blank Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4336-MB	L009928.D	1	12/10/01	ME	12/07/01	OP4336	SL565

The QC reported here applies to the following samples: Method: SW846 8270C

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	84%	46-125%
321-60-8	2-Fluorobiphenyl	79%	46-125%
1718-51-0	Terphenyl-d14	83%	49-126%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4336-MS	L009930.D	1	12/10/01	ME	12/07/01	OP4336	SL565
OP4336-MSD	L009931.D	1	12/10/01	ME	12/07/01	OP4336	SL565
F11691-1	L009929.D	1	12/10/01	ME	12/07/01	OP4336	SL565

The QC reported here applies to the following samples: Method: SW846 8270C

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	F11691-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		100	81.1	81	71.8	72	12	59-125/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	81.9	82	81.3	81	1	72-125/20
120-83-2	2,4-Dichlorophenol	ND		100	82.5	83	76.2	76	8	65-125/20
105-67-9	2,4-Dimethylphenol	ND		100	55.6	56	53.4	53	4	37-125/20
51-28-5	2,4-Dinitrophenol	ND		100	30.2	30	29.8	30	1	27-125/41
534-52-1	4,6-Dinitro-o-cresol	ND		100	82.8	83	79.6	80	4	54-125/20
95-48-7	2-Methylphenol	ND		100	76.5	77	67.6	68	12	57-125/20
	3&4-Methylphenol	3.6	J	200	150	73	143	70	5	55-125/20
88-75-5	2-Nitrophenol	ND		100	85.3	85	74.7	75	13	67-125/20
100-02-7	4-Nitrophenol	ND		100	56.8	57	59.2	59	4	41-125/23
87-86-5	Pentachlorophenol	ND		100	95.4	95	90.4	90	5	67-126/20
108-95-2	Phenol	ND		100	59.6	60	55.8	56	7	39-125/20
95-95-4	2,4,5-Trichlorophenol	ND		100	88.1	88	80.4	80	9	75-125/20
88-06-2	2,4,6-Trichlorophenol	ND		100	84.1	84	80.3	80	5	70-125/20
83-32-9	Acenaphthene	ND		100	82.4	82	79.3	79	4	74-125/20
208-96-8	Acenaphthylene	ND		100	92.5	93	88.0	88	5	75-125/20
120-12-7	Anthracene	ND		100	90.1	90	86.4	86	4	75-125/20
56-55-3	Benzo(a)anthracene	ND		100	91.4	91	87.9	88	4	75-125/20
50-32-8	Benzo(a)pyrene	ND		100	96.2	96	90.5	91	6	75-125/20
205-99-2	Benzo(b)fluoranthene	ND		100	92.8	93	91.4	91	2	75-125/20
191-24-2	Benzo(g,h,i)perylene	ND		100	84.9	85	78.3	78	8	61-125/21
207-08-9	Benzo(k)fluoranthene	ND		100	89.2	89	86.1	86	4	75-125/20
101-55-3	4-Bromophenyl phenyl ether	ND		100	87.5	88	83.4	83	5	73-125/20
85-68-7	Butyl benzyl phthalate	ND		100	97.5	98	93.9	94	4	66-125/20
91-58-7	2-Chloronaphthalene	ND		100	84.6	85	80.2	80	5	64-125/20
106-47-8	4-Chloroaniline	ND		100	83.3	83	80.1	80	4	44-125/20
86-74-8	Carbazole	ND		100	88.2	88	86.2	86	2	75-125/20
218-01-9	Chrysene	ND		100	85.2	85	86.2	86	1	75-125/20
111-91-1	bis(2-Chloroethoxy)methane	ND		100	85.7	86	77.2	77	10	62-125/20
111-44-4	bis(2-Chloroethyl)ether	ND		100	81.9	82	71.4	71	14	61-125/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		100	83.3	83	71.3	71	16	56-125/22
7005-72-3	4-Chlorophenyl phenyl ether	ND		100	88.0	88	84.9	85	4	75-125/20
121-14-2	2,4-Dinitrotoluene	ND		100	93.5	94	94.6	95	1	75-125/20
606-20-2	2,6-Dinitrotoluene	ND		100	95.3	95	90.3	90	5	75-125/20
91-94-1	3,3'-Dichlorobenzidine	ND		100	86.1	86	84.1	84	2	20-125/29
53-70-3	Dibenzo(a,h)anthracene	ND		100	85.5	86	81.8	82	4	64-127/20

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4336-MS	L009930.D	1	12/10/01	ME	12/07/01	OP4336	SL565
OP4336-MSD	L009931.D	1	12/10/01	ME	12/07/01	OP4336	SL565
F11691-1	L009929.D	1	12/10/01	ME	12/07/01	OP4336	SL565

The QC reported here applies to the following samples: Method: SW846 8270C

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	F11691-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
132-64-9	Dibenzofuran	ND		100	84.7	85	81.2	81	4	73-125/20
84-74-2	Di-n-butyl phthalate	ND		100	95.1	95	94.3	94	1	71-125/20
117-84-0	Di-n-octyl phthalate	ND		100	105	105	96.4	96	9	66-125/30
84-66-2	Diethyl phthalate	ND		100	94.6	95	90.4	90	5	64-125/20
131-11-3	Dimethyl phthalate	ND		100	88.9	89	86.1	86	3	32-139/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		100	106	106	98.8	99	7	74-125/20
206-44-0	Fluoranthene	ND		100	84.9	85	85.2	85	0	75-125/20
86-73-7	Fluorene	ND		100	87.7	88	85.3	85	3	75-125/20
118-74-1	Hexachlorobenzene	ND		100	90.8	91	88.2	88	3	75-125/20
87-68-3	Hexachlorobutadiene	ND		100	71.5	72	62.4	62	14	26-125/2
77-47-4	Hexachlorocyclopentadiene	ND		100	43.5	44	45.5	46	4	18-125/2
67-72-1	Hexachloroethane	ND		100	75.5	76	67.7	68	11	22-125/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		100	89.0	89	84.1	84	6	54-125/20
78-59-1	Isophorone	ND		100	87.1	87	80.9	81	7	62-125/20
91-57-6	2-Methylnaphthalene	ND		100	78.8	79	72.2	72	9	58-125/20
88-74-4	2-Nitroaniline	ND		100	85.8	86	87.1	87	2	67-125/20
99-09-2	3-Nitroaniline	ND		100	76.9	77	80.5	81	5	53-125/20
100-01-6	4-Nitroaniline	ND		100	84.3	84	88.2	88	5	63-125/20
91-20-3	Naphthalene	ND		100	80.7	81	74.3	74	8	55-125/20
98-95-3	Nitrobenzene	ND		100	84.5	85	75.4	75	11	63-125/20
621-64-7	N-Nitroso-di-n-propylamine	ND		100	88.7	89	82.2	82	8	58-125/20
86-30-6	N-Nitrosodiphenylamine	ND		100	97.3	97	93.0	93	5	75-125/20
85-01-8	Phenanthrene	ND		100	86.1	86	81.2	81	6	75-125/20
129-00-0	Pyrene	ND		100	90.1	90	86.5	87	4	67-125/20

CAS No.	Surrogate Recoveries	MS	MSD	F11691-1	Limits
367-12-4	2-Fluorophenol	71%	64%	50%	20-125%
4165-62-2	Phenol-d5	55%	52%	36%	10-125%
118-79-6	2,4,6-Tribromophenol	92%	88%	86%	35-140%
4165-60-0	Nitrobenzene-d5	84%	74%	74%	46-125%
321-60-8	2-Fluorobiphenyl	84%	78%	69%	46-125%
1718-51-0	Terphenyl-d14	91%	87%	89%	49-126%

Semivolatile Surrogate Recovery Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
F11691-1	L009929.D	50.0	36.0	86.0	74.0	69.0	89.0
F11691-2	L009932.D	37.0	27.0	73.0	85.0	73.0	79.0
F11691-3	L009933.D	38.0	28.0	75.0	77.0	72.0	89.0
F11691-4	L009934.D	31.0	23.0	67.0	67.0	63.0	76.0
F11691-5	L009935.D	29.0	20.0	60.0	72.0	67.0	69.0
F11691-6	L009936.D	39.0	28.0	94.0	61.0	60.0	91.0
F11691-8	L009937.D	30.0	22.0	67.0	72.0	74.0	63.0
OP4336-BS	L009927.D	59.0	38.0	89.0	87.0	83.0	90.0
OP4336-MB	L009928.D	59.0	44.0	85.0	84.0	79.0	83.0
OP4336-MS	L009930.D	71.0	55.0	92.0	84.0	84.0	91.0
OP4336-MSD	L009931.D	64.0	52.0	88.0	74.0	78.0	87.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	20-125%
S2 = Phenol-d5	10-125%
S3 = 2,4,6-Tribromophenol	35-140%
S4 = Nitrobenzene-d5	46-125%
S5 = 2-Fluorobiphenyl	46-125%
S6 = Terphenyl-d14	49-126%

Blank Spike Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-BS	DD04112.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152

The QC reported here applies to the following samples: Method: SW846 8081A

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
309-00-2	Aldrin	0.5	0.44	88	36-123
319-84-6	alpha-BHC	0.5	0.48	96	71-124
319-85-7	beta-BHC	0.5	0.48	96	66-124
319-86-8	delta-BHC	0.5	0.53	106	48-133
58-89-9	gamma-BHC (Lindane)	0.5	0.50	100	70-125
5103-71-9	alpha-Chlordane	0.5	0.47	94	61-120
5103-74-2	gamma-Chlordane	0.5	0.48	96	61-121
60-57-1	Dieldrin	0.5	0.48	96	68-123
72-54-8	4,4'-DDD	0.5	0.52	104	61-134
72-55-9	4,4'-DDE	0.5	0.48	96	59-131
50-29-3	4,4'-DDT	0.5	0.51	102	65-124
72-20-8	Endrin	0.5	0.25	50	46-160
1031-07-8	Endosulfan sulfate	0.5	0.47	94	67-118
7421-93-4	Endrin aldehyde	0.5	0.12	24	5-120
53494-70-5	Endrin ketone	0.5	0.65	130*	57-128
959-98-8	Endosulfan-I	0.5	0.47	94	68-120
33213-65-9	Endosulfan-II	0.5	0.50	100	74-120
76-44-8	Heptachlor	0.5	0.43	86	46-124
1024-57-3	Heptachlor epoxide	0.5	0.47	94	70-127
72-43-5	Methoxychlor	0.5	0.51	102	66-122

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	86%	47-126%
2051-24-3	Decachlorobiphenyl	103%	13-144%

Blank Spike Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-BS2	DD04170.D	1	12/12/01	SKW	12/11/01	OP4328	GDD154

The QC reported here applies to the following samples: Method: SW846 8081A

F11691-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	82%	47-126%
2051-24-3	Decachlorobiphenyl	109%	13-144%

Method Blank Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-MB	DD04111.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152

The QC reported here applies to the following samples: Method: SW846 8081A

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	Result	RL	Units	Q
309-00-2	Aldrin	ND	0.050	ug/l	
319-84-6	alpha-BHC	ND	0.050	ug/l	
319-85-7	beta-BHC	ND	0.050	ug/l	
319-86-8	delta-BHC	ND	0.050	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.050	ug/l	
5103-71-9	alpha-Chlordane	ND	0.10	ug/l	
5103-74-2	gamma-Chlordane	ND	0.10	ug/l	
60-57-1	Dieldrin	ND	0.050	ug/l	
72-54-8	4,4'-DDD	ND	0.10	ug/l	
72-55-9	4,4'-DDE	ND	0.10	ug/l	
50-29-3	4,4'-DDT	ND	0.10	ug/l	
72-20-8	Endrin	ND	0.10	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.10	ug/l	
7421-93-4	Endrin aldehyde	ND	0.10	ug/l	
53494-70-5	Endrin ketone	ND	0.10	ug/l	
959-98-8	Endosulfan-I	ND	0.050	ug/l	
33213-65-9	Endosulfan-II	ND	0.10	ug/l	
76-44-8	Heptachlor	ND	0.050	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.050	ug/l	
72-43-5	Methoxychlor	ND	0.20	ug/l	
8001-35-2	Toxaphene	ND	2.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	87%	47-126%
2051-24-3	Decachlorobiphenyl	105%	13-144%

Method Blank Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-MB2	DD04169.D	1	12/12/01	SKW	12/11/01	OP4328	GDD154

The QC reported here applies to the following samples: Method: SW846 8081A

F11691-8

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	81%	47-126%
2051-24-3	Decachlorobiphenyl	105%	13-144%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4328-MS	DD04115.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
OP4328-MSD	DD04116.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152
F11674-2	DD04114.D	1	12/10/01	SKW	12/07/01	OP4328	GDD152

The QC reported here applies to the following samples: Method: SW846 8081A

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	F11674-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
309-00-2	Aldrin	ND		1	0.90	90	0.90	90	0	54-120/20
319-84-6	alpha-BHC	ND		1	1.0	100	1.0	100	0	73-123/20
319-85-7	beta-BHC	ND		1	1.0	100	1.1	110	10	77-120/20
319-86-8	delta-BHC	ND		1	1.2	120	1.2	120	0	44-134/20
58-89-9	gamma-BHC (Lindane)	ND		1	1.1	110	1.1	110	0	80-120/20
5103-71-9	alpha-Chlordane	ND		1	1.0	100	1.0	100	0	72-120/20
5103-74-2	gamma-Chlordane	ND		1	0.98	98	1.0	100	2	70-124/20
60-57-1	Dieldrin	ND		1	1.0	100	1.0	100	0	75-120/20
72-54-8	4,4'-DDD	ND		1	1.1	110	1.2	120	9	66-130/20
72-55-9	4,4'-DDE	ND		1	1.0	100	1.1	110	10	60-133/2
50-29-3	4,4'-DDT	ND		1	1.1	110	1.1	110	0	67-120/2
72-20-8	Endrin	ND		1	0.99	99	1.0	100	1	77-155/20
1031-07-8	Endosulfan sulfate	ND		1	1.1	110	1.2	120	9	59-131/20
7421-93-4	Endrin aldehyde	ND		1	0.32	32	0.36	36	12	5-120/58
53494-70-5	Endrin ketone	ND		1	1.2	120	1.2	120	0	70-120/20
959-98-8	Endosulfan-I	ND		1	0.99	99	1.0	100	1	76-120/20
33213-65-9	Endosulfan-II	ND		1	1.1	110	1.1	110	0	77-121/20
76-44-8	Heptachlor	ND		1	0.96	96	0.96	96	0	62-120/20
1024-57-3	Heptachlor epoxide	ND		1	1.0	100	1.0	100	0	77-120/20
72-43-5	Methoxychlor	ND		1	1.1	110	1.2	120	9	65-128/20

CAS No.	Surrogate Recoveries	MS	MSD	F11674-2	Limits
877-09-8	Tetrachloro-m-xylene	88%	81%	80%	47-126%
2051-24-3	Decachlorobiphenyl	80%	86%	63%	13-144%

Semivolatile Surrogate Recovery Summary

Job Number: F11691
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock

Method: SW846 8081A Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]
F11691-1	DD04122.D	88.0	82.0
F11691-2	DD04123.D	72.0	15.0
F11691-3	DD04124.D	87.0	26.0
F11691-4	DD04125.D	77.0	31.0
F11691-5	DD04126.D	66.0	16.0
F11691-6	DD04127.D	87.0	80.0
F11691-8	DD04171.D	57.0	9.0* [b]
F11691-8	DD04128.D	49.0	8.0*
OP4328-BS	DD04112.D	86.0	103.0
OP4328-BS2	DD04170.D	82.0	109.0
OP4328-MB	DD04111.D	87.0	105.0
OP4328-MB2	DD04169.D	81.0	105.0
OP4328-MS	DD04115.D	88.0	80.0
OP4328-MSD	DD04116.D	81.0	86.0

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	47-126%
S2 = Decachlorobiphenyl	13-144%

(a) Recovery from GC signal #1
(b) Confirmed by re-extraction and reanalysis.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4011
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/07/01

Metal	RL	IDL	MB raw	final
Aluminum	200	9.44	-13	<200
Antimony	5.0	2.56	-2.2	<5.0
Arsenic	10	3.15	-3.2	<10
Barium	200	.94	0.010	<200
Beryllium	5.0	.22	0.17	<5.0
Cadmium	5.0	.27	-0.35	<5.0
Calcium	1000	10.2	6.6	<1000
Chromium	10	.35	0.60	<10
Cobalt	50	.55	0.060	<50
Copper	25	.71	0.14	<25
Iron	300	9.02	-3.8	<300
Lead	5.0	1.16	2.3	<5.0
Magnesium	5000	25.5	1.6	<5000
Manganese	15	.26	0.12	<15
Molybdenum	50	1.01	anr	
Nickel	40	.8	-0.42	<40
Potassium	5000	49	655	<5000
Selenium	10	2.5	-1.6	<10
Silver	10	.59	-0.43	<10
Sodium	5000	173	42.5	<5000
Thallium	10	2.07	-2.6	<10
Tin	50	1.03		
Vanadium	50	.58	0.040	<50
Zinc	20	.36	0.020	<20

Associated samples MP4011: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4011
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:			12/07/01					12/07/01		
Metal	F11691-4 Original	MS	Spikelot MPFLICP	% Rec	QC Limits	F11691-4 Original	MSD	Spikelot MPFLICP	% Rec	QC Limits
Aluminum	71800	98800	29000	93.1	70-122	71800	94800	29000	79.3	70-122
Antimony	0.0	528	1000	52.8N(a)	66-120	0.0	512	1000	51.2N(a)	66-120
Arsenic	27.3	3080	4000	76.3	75-120	27.3	3090	4000	76.6	75-120
Barium	1430	4510	4000	77.0	72-120	1430	4440	4000	75.3	72-120
Beryllium	11.1	90.3	100	79.2	73-120	11.1	90.3	100	79.2	73-120
Cadmium	3.9	80.0	100	76.1	72-120	3.9	80.3	100	76.4	72-120
Calcium	23300	44000	25000	82.8	37-150	23300	44000	25000	82.8	37-150
Chromium	104	422	400	79.5	69-122	104	418	400	78.5	69-122
Cobalt	15.4	788	1000	77.3	69-120	15.4	787	1000	77.2	69-120
Copper	5.5	406	500	80.1	70-120	5.5	400	500	78.9	70-120
Iron	16500	39300	27000	84.4	72-122	16500	39000	27000	83.3	72-122
Lead	24.9	795	1000	77.0	70-126	24.9	789	1000	76.4	70-126
Magnesium	3640	23700	25000	80.2	73-127	3640	23400	25000	79.0	73-127
Manganese	27.4	818	1000	79.1	74-122	27.4	812	1000	78.5	74-122
Molybdenum										
Nickel	28.2	807	1000	77.9	69-120	28.2	809	1000	78.1	69-120
Potassium	5140	27100	25000	87.8	61-122	5140	26700	25000	86.2	61-122
Selenium	3.2	3110	4000	77.7	74-120	3.2	3140	4000	78.4	74-120
Silver	0.0	81.8	100	81.8	52-126	0.0	80.6	100	80.6	52-126
Sodium	9760	30900	25000	84.6	56-130	9760	30600	25000	83.4	56-130
Thallium	0.0	2980	4000	74.5N(a)	80-122	0.0	2940	4000	73.5N(a)	80-122
Tin										
Vanadium	131	919	1000	78.8	75-122	131	910	1000	77.9	75-122
Zinc	46.7	833	1000	78.6	68-123	46.7	841	1000	79.4	68-123

Associated samples MP4011: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4011
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/07/01

Metal	F11691-4 Original	DUP	RPD	QC Limits
Aluminum	71800	73000	1.7	0-23
Antimony	0.0	0.0	NC	0-20
Arsenic	27.3	31.2	13.3	0-29
Barium	1430	1480	3.4	0-20
Beryllium	11.1	11.2	0.9	0-25
Cadmium	3.9	4.2	7.4	0-20
Calcium	23300	23600	1.3	0-20
Chromium	104	107	2.8	0-47
Cobalt	15.4	16.2	5.1	0-30
Copper	5.5	5.7	3.6	0-21
Iron	16500	17000	3.0	0-23
Lead	24.9	27.3	9.2	0-44
Magnesium	3640	3670	0.8	0-20
Manganese	27.4	27.7	1.1	0-30
Molybdenum	anr			
Nickel	28.2	29.2	3.5	0-56
Potassium	5140	5190	1.0	0-20
Selenium	3.2	3.5	9.0	0-36
Silver	0.0	0.0	NC	0-20
Sodium	9760	9790	0.3	0-20
Thallium	0.0	7.2	200.0(a)	0-26
Tin				
Vanadium	131	134	2.3	0-28
Zinc	46.7	53.4	13.4	0-54

Associated samples MP4011: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4011
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/07/01

Metal	BSP Result	Spikelot MPFLICP	% Rec	QC Limits
Aluminum	29500	29000	101.7	80-120
Antimony	1010	1000	101.0	80-120
Arsenic	4040	4000	101.0	80-120
Barium	3900	4000	97.5	80-120
Beryllium	105	100	105.0	80-120
Cadmium	103	100	103.0	80-120
Calcium	27100	25000	108.4	80-120
Chromium	420	400	105.0	80-120
Cobalt	1030	1000	103.0	80-120
Copper	495	500	99.0	80-120
Iron	29800	27000	110.4	80-120
Lead	1040	1000	104.0	80-120
Magnesium	26000	25000	104.0	80-120
Manganese	1050	1000	105.0	80-120
Molybdenum				
Nickel	1050	1000	105.0	80-120
Potassium	25500	25000	102.0	80-120
Selenium	4150	4000	103.8	80-120
Silver	107	100	107.0	80-120
Sodium	23600	25000	94.4	80-120
Thallium	4110	4000	102.8	80-120
Tin				
Vanadium	1040	1000	104.0	80-120
Zinc	1090	1000	109.0	80-120

Associated samples MP4011: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4011
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/07/01

Metal	F11691-4 Original	SDL 1:5	RPD	QC Limits
Aluminum	71800	87100	21.3*(a)	0-10
Antimony	0.00	0.00	NC	0-10
Arsenic	27.3	44.6	63.2 (b)	0-10
Barium	1430	1810	26.1*(a)	0-10
Beryllium	11.1	16.4	47.9*(a)	0-10
Cadmium	3.90	4.08	4.6	0-10
Calcium	23300	32100	37.5*(a)	0-10
Chromium	104	135	30.3*(a)	0-10
Cobalt	15.4	20.4	31.9 (b)	0-10
Copper	5.49	5.86	6.7	0-10
Iron	16500	21600	30.5*(a)	0-10
Lead	24.9	40.2	61.5 (b)	0-10
Magnesium	3640	4720	29.8*(a)	0-10
Manganese	27.4	42.4	54.6*(a)	0-10
Molybdenum	anr			
Nickel	28.2	33.7	19.3 (b)	0-10
Potassium	5140	7970	55.1*(a)	0-10
Selenium	3.22	13.1	305.6(b)	0-10
Silver	0.00	0.00	NC	0-10
Sodium	9760	10800	10.0	0-10
Thallium	0.00	0.00	NC	0-10
Tin				
Vanadium	131	169	28.7*(a)	0-10
Zinc	46.7	148	216.4*(a	0-10

Associated samples MP4011: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4015
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/11/01

Metal	RL	IDL	MB raw	final
Aluminum	200	9.44	20.6	<200
Antimony	5.0	2.56	-0.68	<5.0
Arsenic	10	3.15	1.6	<10
Barium	200	.94	0.39	<200
Beryllium	5.0	.22	0.21	<5.0
Cadmium	5.0	.27	-0.080	<5.0
Calcium	1000	10.2	3.0	<1000
Chromium	10	.35	0.42	<10
Cobalt	50	.55	-0.21	<50
Copper	25	.71	0.75	<25
Iron	300	9.02	32.5	<300
Lead	5.0	1.16	3.0	<5.0
Magnesium	5000	25.5	4.2	<5000
Manganese	15	.26	0.11	<15
Molybdenum	50	1.01	anr	
Nickel	40	.8	-0.25	<40
Potassium	5000	49	734	<5000
Selenium	10	2.5	2.3	<10
Silver	10	.59	-0.53	<10
Sodium	5000	173	53.3	<5000
Thallium	10	2.07	-3.8	<10
Tin	50	1.03		
Vanadium	50	.58	0.57	<50
Zinc	20	.36	17.8	<20

Associated samples MP4015: F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4015
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:			12/11/01					12/11/01		
Metal	F11727-1 Original	MS	Spikelot MPFLICP	% Rec	QC Limits	F11727-1 Original	MSD	Spikelot MPFLICP	% Rec	QC Limits
Aluminum	230	32400	29000	110.9	70-122	230	32400	29000	110.9	70-122
Antimony	0.0	1000	1000	100.0	66-120	0.0	1020	1000	102.0	66-120
Arsenic	0.0	4190	4000	104.8	75-120	0.0	4280	4000	107.0	75-120
Barium	372	4310	4000	98.5	72-120	372	4320	4000	98.7	72-120
Beryllium	0.0	101	100	101.0	73-120	0.0	103	100	103.0	73-120
Cadmium	0.0	91.4	100	91.4	72-120	0.0	94.1	100	94.1	72-120
Calcium	504000	528000	25000	96.0	37-150	504000	542000	25000	152.0(a)	37-150
Chromium	453	842	400	97.3	69-122	453	862	400	102.3	69-122
Cobalt	4.3	952	1000	94.8	69-120	4.3	975	1000	97.1	69-120
Copper	32.4	565	500	106.5	70-120	32.4	565	500	106.5	70-120
Iron	92.1	28500	27000	105.2	72-122	92.1	29200	27000	107.8	72-122
Lead	48.4	1010	1000	96.2	70-126	48.4	1030	1000	98.2	70-126
Magnesium	70.9	26000	25000	103.7	73-127	70.9	26500	25000	105.7	73-127
Manganese	3.0	991	1000	98.8	74-122	3.0	1010	1000	100.7	74-122
Molybdenum										
Nickel	10.5	956	1000	94.6	69-120	10.5	979	1000	96.9	69-120
Potassium	184000	217000	25000	132.0(a)	61-122	184000	210000	25000	104.0	61-122
Selenium	0.0	4150	4000	103.8	74-120	0.0	4260	4000	106.5	74-120
Silver	0.0	103	100	103.0	52-126	0.0	104	100	104.0	52-126
Sodium	326000	371000	25000	180.0(a)	56-130	326000	369000	25000	172.0(a)	56-130
Thallium	17.2	3790	4000	94.3	80-122	17.2	3880	4000	96.6	80-122
Tin										
Vanadium	2.1	1020	1000	101.8	75-122	2.1	1040	1000	103.8	75-122
Zinc	10.5	990	1000	98.0	68-123	10.5	1030	1000	102.0	68-123

Associated samples MP4015: F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4015
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/11/01

Metal	F11727-1 Original	DUP	RPD	QC Limits
Aluminum	230	239	3.8	0-23
Antimony	0.0	0.0	NC	0-20
Arsenic	0.0	0.0	NC	0-29
Barium	372	372	0.0	0-20
Beryllium	0.0	0.0	NC	0-25
Cadmium	0.0	0.0	NC	0-20
Calcium	504000	513000	1.8	0-20
Chromium	453	457	0.9	0-47
Cobalt	4.3	4.4	2.3	0-30
Copper	32.4	32.1	0.9	0-21
Iron	92.1	95.0	3.1	0-23
Lead	48.4	48.9	1.0	0-44
Magnesium	70.9	75.0	5.6	0-20
Manganese	3.0	3.4	12.5	0-30
Molybdenum	anr			
Nickel	10.5	10.5	0.0	0-56
Potassium	184000	185000	0.5	0-20
Selenium	0.0	0.0	NC	0-36
Silver	0.0	0.0	NC	0-20
Sodium	326000	329000	0.9	0-20
Thallium	17.2	13.9	21.2	0-26
Tin				
Vanadium	2.1	1.9	10.0	0-28
Zinc	10.5	10.6	0.9	0-54

Associated samples MP4015: F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4015
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/11/01

Metal	BSP Result	Spikelot MPFLICP	% Rec	QC Limits
Aluminum	31300	29000	107.9	80-120
Antimony	1000	1000	100.0	80-120
Arsenic	4050	4000	101.3	80-120
Barium	3990	4000	99.8	80-120
Beryllium	101	100	101.0	80-120
Cadmium	97.0	100	97.0	80-120
Calcium	26900	25000	107.6	80-120
Chromium	403	400	100.8	80-120
Cobalt	991	1000	99.1	80-120
Copper	568	500	113.6	80-120
Iron	29400	27000	108.9	80-120
Lead	1010	1000	101.0	80-120
Magnesium	26700	25000	106.8	80-120
Manganese	1020	1000	102.0	80-120
Molybdenum				
Nickel	1000	1000	100.0	80-120
Potassium	26000	25000	104.0	80-120
Selenium	4130	4000	103.3	80-120
Silver	104	100	104.0	80-120
Sodium	26200	25000	104.8	80-120
Thallium	4000	4000	100.0	80-120
Tin				
Vanadium	1020	1000	102.0	80-120
Zinc	1020	1000	102.0	80-120

Associated samples MP4015: F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4015
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 12/11/01

Metal	F11727-1 Original	SDL 1:5	RPD	QC Limits
Aluminum	230	382	66.5 (a)	0-10
Antimony	0.00	0.00	NC	0-10
Arsenic	0.00	0.00	NC	0-10
Barium	372	379	2.0	0-10
Beryllium	0.00	2.59		0-10
Cadmium	0.00	0.00	NC	0-10
Calcium	504000	560000	11.2*(b)	0-10
Chromium	453	472	4.1	0-10
Cobalt	4.31	3.27	24.1 (a)	0-10
Copper	32.4	29.9	7.7	0-10
Iron	92.1	144	56.6 (a)	0-10
Lead	48.4	60.5	25.0 (a)	0-10
Magnesium	70.9	0.00	100.0(a)	0-10
Manganese	2.97	3.28	10.4 (a)	0-10
Molybdenum	anr			
Nickel	10.5	10.4	1.7	0-10
Potassium	184000	195000	5.8	0-10
Selenium	0.00	0.00	NC	0-10
Silver	0.00	0.00	NC	0-10
Sodium	326000	274000	15.9*(b)	0-10
Thallium	17.2	0.00	100.0(a)	0-10
Tin				
Vanadium	2.07	3.10	49.8 (a)	0-10
Zinc	10.5	8.36	20.3 (a)	0-10

Associated samples MP4015: F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	RL	IDL	MB raw	final
Mercury	1.0	.06	-0.19	<1.0

Associated samples MP4042: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01 12/17/01

Metal	F11612-19 Original	DUP	RPD	QC Limits	F11612-19 Original	MS	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	0.0	NC	0-20	0.0	3.2	3	106.7	62-131

Associated samples MP4042: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	F11612-19 Original	MSD	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	3.2	3	106.7	62-131

Associated samples MP4042: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4042
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/17/01

Metal	BSP Result	Spikelot HGFLWS	% Rec	QC Limits
Mercury	3.1	3	103.3	80-120

Associated samples MP4042: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4052
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/20/01

Metal	RL	IDL	MB raw	final
Mercury	1.0	.06	-0.15	<1.0

Associated samples MP4052: F11691-6, F11691-8, F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4052
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/20/01 12/20/01

Metal	F11643-12 Original	DUP	RPD	QC Limits	F11643-12 Original	MS	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	0.0	NC	0-20	0.0	3.2	3	106.7	62-131

Associated samples MP4052: F11691-6, F11691-8, F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4052
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/20/01

Metal	F11643-12 Original	MSD	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	3.2	3	106.7	62-131

Associated samples MP4052: F11691-6, F11691-8, F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

QC Batch ID: MP4052
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/20/01

Metal	BSP Result	Spikelot HGFLWS	% Rec	QC Limits
Mercury	3.2	3	106.7	80-120

Associated samples MP4052: F11691-6, F11691-8, F11691-2A, F11691-3A, F11691-4A, F11691-5A, F11691-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Method Blank Summary

Job Number: F11691
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP633-MB	GG03017.D	1	12/11/01	JH	12/07/01	OP633	GGG109

The QC reported here applies to the following samples: **Method:** SW846 8151

F11691-1, F11691-6

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	1.0	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	0.20	ug/l	
93-76-5	2,4,5-T	ND	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	80%	10-150%

Method Blank Summary

Job Number: F11691
Account: ALSE Accutest Labs.S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP633-MB2	GG02999.D	1	12/10/01	JH	12/08/01	OP633	GGG109

The QC reported here applies to the following samples: **Method:** SW846 8151

F11691-2, F11691-3, F11691-4, F11691-5, F11691-8

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	1.0	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	0.20	ug/l	
93-76-5	2,4,5-T	ND	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	70%	10-150%

Blank Spike Summary

Job Number: F11691
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP633-BS2	GG02998.D	1	12/10/01	JH	12/08/01	OP633	GGG109

The QC reported here applies to the following samples: **Method:** SW846 8151

F11691-2, F11691-3, F11691-4, F11691-5, F11691-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
94-75-7	2,4-D	2	1.9	95	50-150 [a]
93-72-1	2,4,5-TP (Silvex)	0.4	0.30	75	50-150 [a]
93-76-5	2,4,5-T	0.4	0.28	70	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	80%	10-150%

(a) Advisory control limits.

Blank Spike Summary

Job Number: F11691
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP633-BS1	GG03016.D	1	12/11/01	JH	12/07/01	OP633	GGG109

The QC reported here applies to the following samples: **Method:** SW846 8151

F11691-1, F11691-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
94-75-7	2,4-D	2	1.6	80	50-150 [a]
93-72-1	2,4,5-TP (Silvex)	0.4	0.25	63	50-150 [a]
93-76-5	2,4,5-T	0.4	0.25	63	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	78%	10-150%

(a) Advisory control limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11691
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP633-MS	GG03044.D	1	12/11/01	JH	12/07/01	OP633	GGG109
OP633-MSD	GG03045.D	1	12/11/01	JH	12/07/01	OP633	GGG109
F11691-1	GG03043.D	1	12/11/01	JH	12/07/01	OP633	GGG109

The QC reported here applies to the following samples: **Method:** SW846 8151

F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

CAS No.	Compound	F11691-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
94-75-7	2,4-D	ND		4	4.3	108	4.4	110	2	50-150/30 [a]
93-72-1	2,4,5-TP (Silvex)	ND		0.8	0.59	74	0.56	70	5	50-150/30 [a]
93-76-5	2,4,5-T	ND		0.8	0.56	70	0.53	66	6	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	F11691-1	Limits
19719-28-9	2,4-DCAA	93%	94%	65%	10-150%

(a) Advisory control limits.

Semivolatile Surrogate Recovery Summary

Job Number: F11691
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Method: SW846 8151 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
F11691-1	GG03043.D	65.0
F11691-2	GG03029.D	49.0
F11691-3	GG03030.D	81.0
F11691-4	GG03031.D	79.0
F11691-5	GG03032.D	42.0
F11691-6	GG03046.D	59.0
F11691-8	GG03033.D	27.0
OP633-BS1	GG03016.D	78.0
OP633-BS2	GG02998.D	80.0
OP633-MB	GG03017.D	80.0
OP633-MB2	GG02999.D	70.0
OP633-MS	GG03044.D	93.0
OP633-MSD	GG03045.D	94.0

Surrogate Compounds	Recovery Limits
S1 = 2,4-DCAA	10-150%

(a) Recovery from GC signal #1

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

Analyte	Batch ID	RL	MB Result	Units	BSP %Recov	QC Limits
Nitrogen, Nitrate	GP2788/GN8542	0.10	<0.10	mg/l	94.0	90-110%

Associated Samples:
Batch GP2788: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Nitrogen, Nitrate	GP2788/GN8542	F11691-1	mg/l	<0.10	1	0.92	92.0	80-120%
Nitrogen, Nitrate	GP2788/GN8542	F11691-1	mg/l	<0.10	1	0.95	95.0	80-120%

Associated Samples:
Batch GP2788: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F11691
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3014 - Omni-Oak Hammock

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Nitrogen, Nitrate	GP2788/GN8542	F11691-1	mg/l	<0.10	<0.10	0.0	0-20%

Associated Samples:
Batch GP2788: F11691-1, F11691-2, F11691-3, F11691-4, F11691-5, F11691-6, F11691-8

4 COOLERS

ACCUTEST CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #: F11691
ACCUTEST QUOTE #: 11260 1A-JF

CLIENT INFORMATION

NAME: KUBAL-FURR + ASSOCIATES
ADDRESS: PO BOX 80247
CITY: SIMPSONVILLE STATE: SC ZIP: 29650
SEND REPORT TO: DIANE ROSSETTER
PHONE #: (864) 962-9490

FACILITY INFORMATION

PROJECT NAME: OUNI - OAK HAMMOCK
LOCATION: HOLOPAW, FL
PROJECT NO.: 480H01
FAX #: (864) 962-5309

ANALYTICAL INFORMATION

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

LAB USE ONLY

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	TCL VOCs	TCL SVOCs	TCL PESTICIDES	TAL METALS (TOTAL)	HERBICIDES	NITRATE	TAL METALS (DISSOLVED)
1	DP-19	12/4/01	1615	GK	GW	11	✓		✓		✓	✓	✓	✓	✓	✓	✓	
2	DP-11	12/4/01	1405	GK	GW	12	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
3	DP-12	12/4/01	1240	GK	GW	12	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
4	DP-23	12/4/01	1040	GK	GW	12	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
5	DP-9	12/4/01	0905	GK	GW	12	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
6	BLIND DUPLICATE	12/4/01		GK	GW	11	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓ GK
7	TRIP BLANK						✓					✓						
8	DP-18	12/5/01	0835	GK	GW	12	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓

DATA TURNAROUND INFORMATION

- [X] STANDARD
- [ ] 48 HOUR RUSH
- [ ] 24 HOUR EMERGENCY
- [ ] OTHER

APPROVED BY:

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

EXTENDED TCL LIST AS IN OLM04.2
SEE TASK ORDER 480H01 ADDENDUM
METALS (TOTAL) NOT FIELD FILTERED
PLEASE FAX CHAIN TO SIMPSONVILLE

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	12/5/01 1110	1. SECURE AREA	2.		2. 12/11/01 0800
RELINQUISHED BY: 3.	DATE TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE	ON ICE / TEMPERATURE °C

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-1
Weather Condition SUNNY - 70's

Sample Date 12/3/01 Arrival Time 0950 Sample Time 1130

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 1021 Purge Stop Time 1126 Purge Rate ~~~300 ml/min~~ GTK 250ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature °C	Specific Conductance ~~(umhos/cm)~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	5.62	0	0	—	—	—	—	—	—
1	5	5.66	1	5	24.0	0.079	4.91	281.0	0.22	93
2	10	5.66	2	10	24.0	0.075	4.90	340.0	0.33	84
3	15	5.66	3	15	24.1	0.071	4.90	430.0	0.42	78
4	20	5.66	4	20	24.0	0.069	4.87	239	0.08	75
5	25	5.66	5	25	24.0	0.069	4.87	294	0.11	74
6	30	5.66	6	30	23.9	0.068	4.86	*999.0	0.09	72
7	35	5.66	7	35	23.9	0.067	4.87	*999.0	0.00	71
8	40	5.66	8	40	24.0	0.067	4.88	*999.0	0.00	71
9	45	5.66	9	45	24.0	0.067	4.88	837	0.00	71
10	50	5.66	10	50	24.0	0.067	4.89	787	0.04	71
11	55	5.66	11	55	24.3	0.067	4.88	621	0.07	71
12	60	5.66	12	60	24.3	0.067	4.89	633	0.10	71
13	65	5.66	13	65	24.1	0.067	4.87	677	0.09	70
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOC - 8260	3x 40ml VOA	HCl
SVOC - 8270	2x 1L AMBER JAR	NONE
METALS	1x 1L PLASTIC BOTTLE	HNO_3
ANIONS	1x 500ml PLASTIC BOTTLE	NONE
PEST. - 8081	2x 1L AMBER ~~JAR~~	NONE

Remarks * FLASHING READING OF 999.0 - IN MANUAL EXPLANATION IS SENSOR NEEDS CLEANING + CALIBRATION, WILL RE-CALIBRATE BEFORE NEXT WELL. (READING MIGHT BEEN OUT OF RANGE) -TURBID WATER
TOTAL PURGED ~56

Parameter Conditions: pH +/- 0.1 standard unit; COND +/- 3%; DO +/- 10%; Turbidity +/- 10% above 10 NTU; +/- 1 NTU below 10 NTU; ORP +/- 10mV

DUP

HERB. - 8151 — 2x 1L AMBER JAR — NONE
DISS. METALS — 1x 1L PLASTIC BOTTLE — NONE
Total purge: ≈5 gallons

~~BCCC - Augusta Chemical Ground Water Sampling Log~~ GTK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-2
Weather Condition SUNNY- 80

Sample Date 12/3/01 Arrival Time 0950 Sample Time 1340

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 1227 Purge Stop Time 1335 Purge Rate ~250 ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~(umhos/cm)~~ ~~20~~ S/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	5.35	0	0	—	—	—	—	—	—
1	5	5.47	1	5	24.3	0.071	4.71	65.7	0.70	62
2	10	5.48	2	10	24.3	0.070	4.70	30.0	0.46	56
3	15	5.48	3	15	24.4	0.071	4.71	17.1	~~0.37~~	51 → 0.28
4	20	5.48	4	20	24.4	0.070	4.73	10.8	0.46	47
5	25	5.48	5	25	24.5	0.070	4.73	18.3	0.24	43
6	30	5.48	6	30	24.4	0.070	4.73	10.1	0.18	42
7	35	5.48	7	35	24.3	0.070	4.74	-9.2	0.23	39
8	40	5.48	8	40	24.3	0.070	4.75	-5.0	0.23	37
9	45	5.48	9	45	24.3	0.070	4.77	65.1	0.24	34
10	50	5.48	10	50	24.3	0.070	4.77	79.2	0.17	34
11	55	5.48	11	55	24.2	0.070	4.78	35.8	0.14	33
12	60	5.48	12	60	24.2	0.070	4.77	41.1	0.12	33
13	65	5.48	13	65	24.3	0.069	4.78	41.9	0.13	31
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOCs 8260	3 x 40ml	HCl
SVOCs 8270	2 x 1L AMBER JAR	NONE
METALS	1 x 1L PLASTIC BOTTLE	HNO_3
ANIONS	1 x 500ml PLASTIC BOTTLE	NONE
PEST- 8081	2 x 1L AMBER JAR	NONE

Remarks NO DISSOLVED METALS SAMPLED - TURBIDITY WAS LOW - LESS THAN 50 NTU
TOTAL PURGED ~56

Parameter Conditions: pH +/- 0.1 standard unit; COND +/- 3%; DO +/- 10%; Turbidity +/- 10% above 10 NTU; +/- 1 NTU below 10 NTU; ORP +/- 10mV

HERB - 8151 — 2 x 1L AMBER JAR — NONE
~~DISS. METALS~~ GTK — ~~1 x 1L PLASTIC BOTTLE~~ GTK — ~~NONE~~ GTK GTK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 480H01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-10
Weather Condition SUNNY - 80's

Sample Date 12/3/01 Arrival Time 1423 Sample Time 1622

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 1433 Purge Stop Time 1540 Purge Rate ~250 ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~(mmhos/cm)~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	5.08	0	0	—	—	—	—	—	—
1	5	5.21	1	5	24.0	0.129	5.35	*999.0	1.16	-2
2	10	5.19	2	10	24.0	0.135	5.46	*999.0	2.04	-20
3	15	5.19	3	15	24.1	0.134	5.47	*999.0	0.86	-26
4	20	5.19	4	20	24.1	0.134	5.45	*999.0	0.38	-27
5	25	5.20	5	25	24.1	0.134	5.47	*999.0	0.64	-29
6	30	5.21	6	30	24.1	0.134	5.46	*999.0	0.63	-29
7	35	5.21	7	35	24.0	0.133	5.45	*999.0	1.20	-29
8	40	5.21	8	40	24.0	0.132	5.44	*999.0	1.16	-27
9	45	5.20	9	45	24.0	0.130	5.43	*999.0	1.08	-25
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOCs 8260	3 x 40ml VOA	HCl
SVOCs 8270	2 x 1L AMBER JAR	NONE
METALS	1 x 1L PLASTIC BOTTLE	HNO_3
ANIONS	1 x 500ml PLASTIC BOTTLE	NONE
PEST. - 8081	2 x 1L AMBER JAR	NONE

Remarks *FLASHING 999.0 - READING OUT OF RANGE - WILL RE-CALIBRATE BEFORE NEXT WELL - TURBID WATER

TOTAL PURGED ~46

Parameter Conditions: pH +/- 0.1 standard unit; COND +/- 3%; DO +/- 10%; Turbidity +/- 10% above 10 NTU; +/- 1 NTU below 10 NTU; ORP +/- 10mV

CONT.

HERB. - 8151 — 2 x 1L AMBER JAR — NONE
DISS. METALS — 1 x 1L PLASTIC BOTTLE — NONE
~~OUCC Augusta Chemical Ground Water Sampling Log~~ GTK
OMNI WASTE - OAK HAMMOCK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-22
Weather Condition SUNNY - 80
Sample Time 1650

Sample Date 12/3/01 Arrival Time 1609

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 1613 Purge Stop Time 1640 Purge Rate ~250 ml/min

Water-Level Measurements

Interval	Elapse Time (mins)	DTW (feet)
0	0	4.57
1	5	4.78
2	10	4.74
3	15	4.74
4	20	4.75
5	25	4.75
6	30	4.75
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Field Parameters

Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~(umhos/cm)~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	—	—	—	—	—	—
1	5	23.7	0.102	5.23	672.0	0.28	23
2	10	23.7	0.101	5.22	638.0	0.14	19
3	15	23.7	0.101	5.26	652	0.07	14
4	20	23.7	0.101	5.25	645	0.05	12
5	25	23.7	0.101	5.26	682	0.05	10
6	30	23.7	0.101	5.26	694	0.04	9
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Samples Collected	Container Description	Preservative
VOCs - 8260	3 x 40ml VOA	HCl
SVOCs - 8270	8 x 1L AMBER JAR	NONE
METALS	1 x 1L PLASTIC BOTTLE	HNO_3
ANIONS (NITRATE)	1x 500ml PLASTIC BOTTLE	NONE
PEST. - 8081	3 x 1L AMBER JAR	NONE

Remarks TURBID WATER

TOTAL PURGED ~ 2.5 G

(cont)

Parameter Conditions: pH +/- 0.1 standard unit COND +/- 3% DO +/- 10%
Turbidity +/- 10% above 10 NTU +/- 1 NTU below 10 NTU ORP +/- 10mV

HERB. - 8151	2 x 1L AMBER JAR	NONE
DISS. METALS	1 x 1L PLASTIC BOTTLE	NONE

~~BUCS - Augusta Chemical Ground Water Sampling Log~~

OMNI WASTE - OAK HAMMOCK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-9
Weather Condition SUNNY-70s

Sample Date 12/4/01 Arrival Time 0725 Sample Time 0905

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 0753 Purge Stop Time 0859 Purge Rate ~250 ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~(umhos/cm)~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	4.96	0	0	—	—	—	—	—	—
1	5	5.05	1	5	22.6	0.364	6.40	17.3	0.39	-47
2	10	5.05	2	10	22.6	0.351	6.40	31.8	0.31	-56
3	15	5.05	3	15	22.7	0.312	6.28	114.0	0.81	-52
4	20	5.06	4	20	22.7	0.241	6.01	225.0	0.81	-33
5	25	5.06	5	25	22.8	0.223	5.88	301.0	0.72	-27
6	30	5.06	6	30	22.9	0.218	5.85	421.0	0.70	-27
7	35	5.08	7	35	23.1	0.212	5.80	*999.0	0.64	-23
8	40	5.09	8	40	23.2	0.218	5.80	*999.0	0.56	-18
9	45	5.08	9	45	23.3	0.217	5.79	*999.0	0.49	-17
10	50	5.08	10	50	23.4	0.216	5.79	*999.0	0.44	-17
11	55	5.09	11	55	23.5	0.215	5.78	*999.0	0.11	-16
12	60	5.09	12	60	23.5	0.211	5.77	*999.0	0.05	-16
13	65	5.09	13	65	23.6	0.209	5.75	*999.0	0.13	-16
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOCs - 8260	3x40ml	HCl
SVOCs - 8270	2 x 1L AMBER JAR	NONE
METALS (TOTAL)	1 x 1L PLASTIC BOTTLE	HNO_3
ANIONS (NITRATE)	1x500M PLASTIC BOTTLE	NONE
PEST. - 8081	2 x 1L AMBER JAR	NONE

Remarks: * FLASHING 999.0 ON METER - READING OUT OF RANGE. WATER HAS GOTTEN MORE TURBID AS PUMPING CONTINUED, - TURBID WATER

DO FLUCTUATING - DECIDED TO SAMPLE TOTAL PURGED ~5G

Parameter Conditions: pH +/- 0.1 standard unit COND +/- 3% DO +/- 10%
Turbidity +/- 10% above 10 NTU +/- 1 NTU below 10 NTU ORP +/- 10mV

HERB - 8151 — 2 x 1L AMBER JAR — NONE
DISS. METALS — 1 x 1L PLASTIC BOTTLE — NONE

~~BUGG - Augusta Chemical Ground Water Sampling Log~~
OMNI WASTE - OAK HAMMOCK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-23
Weather Condition Sunny 80

Sample Date 12/4/01 Arrival Time 0952 Sample Time 1040

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 1002 Purge Stop Time 1035 Purge Rate ~250 ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~(mmhos/cm)~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	4.27	0	0	—	—	—	—	—	—
1	5	4.41	1	5	23.8	0.203	5.86	901.0	0.57	-11
2	10	4.42	2	10	23.8	0.195	5.82	983.0	0.25	-13
3	15	4.41	3	15	23.8	0.180	5.73	*999.0	0.11	-6
4	20	4.42	4	20	23.8	0.176	5.69	*999.0	0.07	-5
5	25	4.42	5	25	23.8	0.175	5.68	*999.0	0.08	-7
6	30	4.41	6	30	23.8	0.174	5.66	*999.0	0.08	-8
7			7							
8			8							
9			9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOCs 8260	3 X 40ml	HCl
SVOCs 8270	2 x 1L AMBER JAR	NONE
METALS (TOTAL)	1x 1L PLASTIC BOTTLE	HNO_3
ANIONS (NITRATE)	1X 500ml PLASTIC BOTTLE	NONE
PEST. - 8081	2 x 1L AMBER JAR	NONE

Remarks *FLASHING 999.0 ON HORIBA - TURBIDITY OUT OF RANGE - TURBID WATER

TOTAL GALLONS PURGED ~36

Parameter Conditions: pH +/- 0.1 standard unit; COND +/- 3%; DO +/- 10%; Turbidity +/- 10% above 10 NTU; +/- 1 NTU below 10 NTU; ORP +/- 10mV

(cont)

HERB - 8151	2X1L AMBER JAR	NONE
DISS. METALS	1X1L PLASTIC BOTTLE	NONE

~~BUCC - Augusta Chemical Ground Water Sampling Log~~
OMNI WASTE - OAK HAMMOCK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-12
Weather Condition SUNNY - 80's

Sample Date 12/4/01 Arrival Time 1142 Sample Time 1240

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 1146 Purge Stop Time 1236 Purge Rate ~250 ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~(umhos/cm)~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	5.45	0	0	—	—	—	—	—	—
1	5	5.53	1	5	24.3	0.186	5.55	473.0	2.34	-40
2	10	5.52	2	10	24.4	0.182	5.52	447.0	1.89	-41
3	15	5.52	3	15	24.4	0.180	5.52	443.0	1.80	-43
4	20	5.52	4	20	24.4	0.174	5.49	388.0	1.51	-42
5	25	5.52	5	25	24.4	0.172	5.46	368.0	1.26	-41
6	30	5.52	6	30	24.4	0.167	5.44	330.0	0.97	-40
7	35	5.53	7	35	24.3	0.168	5.44	326.0	0.79	-41
8	40	5.52	8	40	24.4	0.160	5.39	301.0	0.63	-39
9	45	5.52	9	45	24.4	0.159	5.38	290.0	0.57	-39
10	50	5.53	10	50	24.3	0.158	5.39	285.0	0.56	-39
11			11							
12			12							
13			13							
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOCs - 8260	3x40ml	HCl
SVOCs - 8270	2x1L AMBER JAR	NONE
METALS (TOTAL)	1x 1L PLASTIC BOTTLE	HNO3
ANIONS (NITRATE)	1x500ml PLASTIC BOTTLE	NONE
PEST. - 8081	2x1L AMBER JAR	NONE

Remarks TURBID WATER

TOTAL PURGED ~46

Parameter Conditions: pH +/- 0.1 standard unit; COND +/- 3%; DO +/- 10%; Turbidity +/- 10% above 10 NTU; +/- 1 NTU below 10 NTU; ORP +/- 10mV

(CONT)

HERB. - 8151	2x1L AMBER JAR	NONE
DISS. METALS	1x 1L PLASTIC BOTTLE	NONE

~~BUGE - Augusta Chemical Ground-water sampling Log~~

OMNI WASTE - OAK HAMMOCK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-11
Weather Condition PARTLY SUNNY - 80's
Sample Date 12/4/01 Arrival Time 1142 Sample Time 1405

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 1328 Purge Stop Time 1359 Purge Rate ~250 ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~µmhos/cm~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	5.58	0	0	—	—	—	—	—	—
1	5	5.67	1	5	24.2	0.131	5.59	*999.0	0.90	-9
2	10	5.66	2	10	24.3	0.131	5.59	*999.0	0.47	-11
3	15	5.66	3	15	24.2	0.129	5.56	*999.0	0.42	-11
4	20	5.67	4	20	24.0	0.130	5.56	*999.0	0.20	-15
5	25	5.67	5	25	24.0	0.130	5.56	*999.0	0.23	-16
6	30	5.67	6	30	23.9	0.131	5.56	*999.0	0.21	-18
7			7							
8			8							
9			9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOCs - 8260	3x 40ML VOA	HCl
SVOCs - 8270	2X1L AMBER JAR	NONE
METALS (TOTAL)	1x1L PLASTIC BOTTLE	HNO_3
ANIONS (NITRATE)	1x500ML PLASTIC BOTTLE	NONE
PEST. - 8081	2x1L AMBER JAR	NONE

Remarks * FLASHING 999.0 ON METER - TURBIDITY OUT OF RANGE - TURBID WATER

TOTAL PURGED ~ 26

Parameter Conditions: pH +/- 0.1 standard unit; COND +/- 3%; DO +/- 10%; Turbidity +/- 10% above 10 NTU; +/- 1 NTU below 10 NTU; ORP +/- 10mV

(CONT)

HERB. - 8151	2X1L AMBER JAR	NONE
DISS. METALS	1x1L PLASTIC BOTTLE	NONE

~~OUCC - Augusta Chemical Ground Water Sampling Log~~
OMNI WASTE - OAK HAMMOCK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-19
Weather Condition PARTLY SUNNY - 80's

Sample Date 12/4/01 Arrival Time 1505 Sample Time 1615

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 1511 Purge Stop Time 1611 Purge Rate ~250 ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~umhos/cm~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	5.10	0	0	—	—	—	—	—	—
1	5	5.29	1	5	23.8	0.207	5.78	36.5	0.41	-25
2	10	5.26	2	10	23.8	0.226	5.85	34.5	0.33	-41
3	15	5.27	3	15	23.7	0.239	5.89	27.4	0.29	-53
4	20	5.27	4	20	23.7	0.253	5.94	18.9	0.27	-62
5	25	5.27	5	25	23.7	0.244	5.91	16.2	0.25	-62
6	30	5.27	6	30	23.7	0.241	5.91	13.3	0.24	-65
7	35	5.27	7	35	23.7	0.233	5.88	14.4	0.22	-65
8	40	5.27	8	40	23.7	0.236	5.89	10.0	0.21	-66
9	45	5.28	9	45	23.7	0.226	5.86	7.9	0.20	-65
10	50	5.27	10	50	23.6	0.222	5.86	11.6	0.19	-66
11	55	5.28	11	55	23.6	0.216	5.83	11.3	0.20	-65
12	60	5.28	12	60	23.6	0.217	5.84	11.3	0.19	-64
13			13							
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOCs - 8260	3x40ml VOA	HCl
SVOCs 8270	2x1L AMBER JAR	NONE
METALS (TOTAL)	1x1L PLASTIC BOTTLE	HNO3
ANIONS (NITRATE)	1x500ml PLASTIC BOTTLE	NONE
PEST. - 8081	2x1L AMBER JAR	NONE

Remarks SAMPLED DUPLICATE - BLIND DUPLICATE
SINCE SAMPLE WAS CLEAR DID NOT SAMPLE DISSOLVED METALS
TOTAL PURGED ~46

Parameter Conditions: pH +/- 0.1 standard unit; COND +/- 3%; DO +/- 10%; Turbidity +/- 10% above 10 NTU; +/- 1 NTU below 10 NTU; ORP +/- 10mV

HERB. - 8151 2x1L AMBER JAR NONE

~~OUCC - Augusta Chemical Ground Water Sampling Log~~
OMNI WASTE - OAK HAMMOCK

Purged Well Sampling Log

Kubal-Furr & Associates
—Environmental Consultants—

Project No. 48OH01
Site Location Oak Hammock
Field Personnel G. Kinsman/S. Nix
Well / Sample ID DP-18
Weather Condition PARTLY SUNNY - 70s

Sample Date 12/5/01 Arrival Time 0735 Sample Time 0835

Description of Measuring Point (MP) TOC Casing Type PVC Locking Cap ✓ Casing Diameter 2 inches

Purge Method PERISTALTIC Sampling Method SAME

Purge Start Time 0748 Purge Stop Time 0830 Purge Rate ~250 ml/min

Water-Level Measurements / Field Parameters

Interval	Elapse Time (mins)	DTW (feet)	Interval	Elapse Time (mins)	Temperature (°C)	Specific Conductance ~~(umhos/cm)~~ mS/cm	pH (su)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
0	0	5.08	0	0	—	—	—	—	—	—
1	5	5.51	1	5	21.8	0.200	5.86	*999.0	0.63	9
2	10	5.55	2	10	22.8	0.241	6.15	*999.0	0.03	-36
3	15	5.57	3	15	23.0	0.341	6.44	*999.0	0.00	-68
4	20	5.57	4	20	23.1	0.359	6.49	*999.0	0.00	-75
5	25	5.58	5	25	23.2	0.377	6.54	*999.0	0.00	-82
6	30	5.59	6	30	23.2	0.389	6.55	*999.0	0.00	-86
7	35	5.60	7	35	23.3	0.396	6.56	*999.0	0.00	-90
8	40	5.61	8	40	23.4	0.398	6.56	*999.0	0.00	-93
9			9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							
16			16							
17			17							
18			18							
19			19							
20			20							

Samples Collected	Container Description	Preservative
VOCs 8260	3x40ml	HCl
SVOC. 8270	2x1L AMBER JAR	NONE
METALS (TOTAL)	1x1L PLASTIC BOTTLE	1+NO3
ANIONS (NITRATE)	1x500ml ~~AMBER~~ PLASTIC BOTTLE	NONE
PEST. -8081	2x1L AMBER JAR	NONE

Remarks *FLASHING 999.0 ON METER - TURBIDITY OUT OF RANGE. - WATER IS TURBID

TOTAL PURGED ~ 36

Parameter Conditions: pH +/- 0.1 standard unit COND +/- 3% DO +/- 10%
Turbidity +/- 10% above 10 NTU +/- 1 NTU below 10 NTU ORP +/- 10mV

(cont.)

HERB. -8151 — 2x1L AMBER JAR — NONE
DISS, METALS — 1x1L PLASTIC BOTTLE — NONE

~~BUCC - Augusta Chemical Ground Water Sampling Log~~
OMNI WASTE - OAK HAMMOCK

DATA ASSESSMENT SUMMARY CHECKLIST AND REPORT – LEVEL III

Client ID: Omni – Oak Hammock
Project Number: TFO48OH01
Project Description: Surfacewater

Prepared By: Diane M. Rosseter
Date: 2/22/02

Sample Delivery Group (SDG) Description:

Surfacewater samples were collected from designated sampling sites on or near the Omni – Oak Hammock landfill site in Holopaw, FL. The samples were collected by Kubal-Furr and Associates for Appendix I volatiles and metals, as well as various other analyses as specified by Florida DEP 62-701.510(8)(b). The samples were analyzed by AccuTest Laboratories Southeast of Orlando, FL, in accordance with FLADEP approved methodology. Fecal coliform and chlorophyll A analyses were subcontracted to Tri-Tech Analytical Laboratories of Orlando.

CONTENTS	LEVEL III	COMMENTS
Sample Results	√	All data **Class A** except as noted in the discussion section.
Chain(s) of Custody (COCs)	√	O.K.
Master Tracking List	√	O.K.
Case Narrative	√	O.K.
Sample Prep	√	O.K.
Standards Prep		
Instrument Quality Control Data	√	O.K.
Batch Quality Control Report	√	Metals and total phosphorus batch QC issues. Details given in discussion section.
Surrogate Recovery Report	√	O.K.
Trip/Field/Equipment Blank Report	√	O.K.
Field Notes/Logbook	√	O.K.
CLP Forms		
All Raw Data		
Electronic Deliverables	√	O.K.

Discussion:

ICP Metals

1) The prep blank and instrument calibration blanks associated with these samples contained trace levels of several metals between the instrument detection limit (IDL) and laboratory-reporting limit (RL). Results for these metals were either reported as not detected in the samples or were greater than five times the amount found in the prep blank, with the exception of lead in SURFACEWATER-4. Results for lead in SURFACEWATER-4 were flagged with "U" and the reporting limit raised to sample concentration.

2) The serial dilution associated with these samples was outside acceptance limits for iron. Results for iron were positively identified in all of the samples and were, therefore, qualified with "J".

3) The relative percent difference between results for total iron in the field duplicates SURFACEWATER-1 and SURFACEWATER-1 (DUP) was greater than 20%, a general guideline used for the comparison of duplicate results in aqueous samples. Results for iron in SURFACEWATER-1 and SURFACEWATER-1 (DUP) were flagged with "J".

4) It should be noted that results are reported in ug/L on the instrument blank results summary, however, the units are given as mg/L. In addition, that the true values given on the instrument calibration data are in mg/L, with the recovered results reported in ug/L. This issue has been addressed with the laboratory and is due to a glitch in the QC report-generation software.

5) It should also be noted that a reporting limit of 4.0 ug/L for beryllium is given on the analytical results. The reporting limit for beryllium given on the QC summary data is 5.0 ug/L, however this is the default laboratory-reporting limit used by the QC report-generation software. The lower reporting limit of 4.0 ug/L is valid, based on instrument calibration.

General Chemistry

1) The relative percent difference between results for the parameters listed below was greater than 20% in SURFACEWATER-1 and SURFACEWATER-1 (DUP). Results for these compounds were flagged with "J" in SURFACEWATER-1 and SURFACEWATER-1 (DUP).
   - total kjeldahl nitrogen, total ammonia nitrogen, unionized ammonia nitrogen, total nitrogen, total organic nitrogen, total suspended solids, total phosphorus, BOD-5 day, and chlorophyll A

2) The total phosphorus matrix spike recovered below the laboratory-established lower control limit. Positive results for total phosphorus were flagged with "J" and non-detects with "UJ" as indicated below:
   - flag results for total phosphorus with "J" in SURFACEWATER-1, SURFACEWATER-1 (DUP), SURFACEWATER-3, and SURFACEWATER-4
   - flag results for total phosphorus with "UJ" in SURFACEWATER-2

3) Fecal coliform results in SURFACEWATER-2 and SURFACEWATER-3 were flagged by the laboratory as "approximate numbers" due to the high colony count. A "J" flag was assigned to these results.

J = positively identified, however concentration should be considered as estimated
UJ = not detected above the associated quantitation limit, however results should be as Estimated
U = not detected above the associated sample quantitation limit

Class A = quantitative **Class B = qualitative** **Class C = unusable**

Southeast ACCUTEST.

02/19/02

Technical Report for

Kubal-Furr & Associates

Omni-Oak Hammock(2)

48OH01 HOLOPAW,FL

Accutest Job Number: F12247

Report to:

Kubal-Furr & Associates
P.O. Box 80247
Simpsonville, SC 29680

ATTN: Diane Rosseter

Total number of pages in report: 67

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

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Sample Summary

Kubal-Furr & Associates

Job No: F12247

Omni-Oak Hammock(2)
Project No: 48OH01 HOLOPAW,FL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
F12247-1	02/07/02	11:00	GK	02/07/02	AQ	Ground Water	SURFACE WATER-1
F12247-2	02/07/02	11:00	GK	02/07/02	AQ	Ground Water	DUP SURFACE WATER 1
F12247-3	02/07/02	11:45	GK	02/07/02	AQ	Ground Water	SURFACE WATER-2
F12247-4	02/07/02	12:15	GK	02/07/02	AQ	Ground Water	SURFACE WATER-3
F12247-5	02/07/02	13:00	GK	02/07/02	AQ	Ground Water	SURFACE WATER-4
F12247-6	02/07/02	00:00	GK	02/07/02	AQ	Trip Blank Water	TRIP BLANK

Report of Analysis

Client Sample ID:	SURFACE WATER-1		
Lab Sample ID:	F12247-1	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0008118.D	1	02/08/02	JG	n/a	n/a	VC377
Run #2							

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
107-13-1	Acrylonitrile	ND	10	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
74-88-4	Methyl iodide	ND	10	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SURFACE WATER-1		
Lab Sample ID:	F12247-1	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
110-57-6	Trans-1,4-Dichloro-2-Butene	ND	10	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
108-05-4	Vinyl Acetate	ND	10	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		80-120%
17060-07-0	1,2-Dichloroethane-D4	109%		80-120%
2037-26-5	Toluene-D8	90%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SURFACE WATER-1		
Lab Sample ID:	F12247-1	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Arsenic	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Barium	< 200	200	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Beryllium	< 4.0	4.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cadmium	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Chromium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cobalt	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Copper	< 25	25	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Iron	1670	300	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Lead	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	ug/l	1	02/11/02	02/13/02	LIR	SW846 7470A	EPA 245.1
Nickel	< 40	40	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Selenium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Silver	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Thallium	< 1.0	1.0	ug/l	1	02/12/02	02/13/02	ATX	EPA 279.2	EPA 200.9
Vanadium	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Zinc	< 20	20	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SURFACE WATER-1		
Lab Sample ID:	F12247-1	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
BOD, 5 Day	5.6	2.0	mg/l	1	02/14/02	YA	EPA 405.1
Chemical Oxygen Demand	52.8	20	mg/l	1	02/11/02	LL	EPA 410.1
Hardness, Total	27.5	4.0	mg/l	1	02/18/02	EP	SW846 6010B/SM 2340B
Nitrogen, Ammonia	0.55	0.20	mg/l	1	02/14/02	LIR	EPA 350.1
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	02/08/02	LL	EPA 300/SW846 9056
Nitrogen, Total Kjeldahl	1.9	0.20	mg/l	1	02/14/02	LIR	EPA 351.3
Nitrogen, Total Organic [a]	1.4	0.40	mg/l	1	02/14/02	LIR	SM18 4500N
Phosphorus, Total	0.13	0.10	mg/l	1	02/08/02	LL	EPA 365.3
Solids, Total Dissolved	122	20	mg/l	2	02/09/02	YA	EPA 160.1
Solids, Total Suspended	17.0	4.0	mg/l	1	02/08/02	YA	EPA 160.2
Total Organic Carbon	21.5	1.0	mg/l	1	02/14/02	ANJ	415.1/9060 M/5310B M

(a) Calculated as: (Nitrogen, Total Kjeldahl) - (Nitrogen, Ammonia)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	DUP SURFACE WATER 1		
Lab Sample ID:	F12247-2	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0008119.D	1	02/08/02	JG	n/a	n/a	VC377
Run #2							

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
107-13-1	Acrylonitrile	ND	10	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
74-88-4	Methyl iodide	ND	10	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP SURFACE WATER 1		
Lab Sample ID:	F12247-2	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
110-57-6	Trans-1,4-Dichloro-2-Butene	ND	10	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
108-05-4	Vinyl Acetate	ND	10	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	89%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP SURFACE WATER 1		
Lab Sample ID:	F12247-2	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Arsenic	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Barium	< 200	200	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Beryllium	< 4.0	4.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cadmium	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Chromium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cobalt	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Copper	< 25	25	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Iron	2870	300	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Lead	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	ug/l	1	02/11/02	02/13/02	LIR	SW846 7470A	EPA 245.1
Nickel	< 40	40	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Selenium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Silver	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Thallium	< 1.0	1.0	ug/l	1	02/12/02	02/13/02	ATX	EPA 279.2	EPA 200.9
Vanadium	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Zinc	< 20	20	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DUP SURFACE WATER 1		
Lab Sample ID:	F12247-2	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed By	Method
BOD, 5 Day	3.8	2.0	mg/l	1	02/14/02 YA	EPA 405.1
Chemical Oxygen Demand	58.8	20	mg/l	1	02/11/02 LL	EPA 410.1
Hardness, Total	28.7	4.0	mg/l	1	02/18/02 EP	SW846 6010B/SM 2340B
Nitrogen, Ammonia	0.37	0.20	mg/l	1	02/14/02 LIR	EPA 350.1
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	02/08/02 LL	EPA 300/SW846 9056
Nitrogen, Total Kjeldahl	4.6	0.20	mg/l	1	02/14/02 LIR	EPA 351.3
Nitrogen, Total Organic [a]	4.2	0.40	mg/l	1	02/14/02 LIR	SM18 4500N
Phosphorus, Total	2.2	0.50	mg/l	5	02/08/02 LL	EPA 365.3
Solids, Total Dissolved	132	20	mg/l	2	02/09/02 YA	EPA 160.1
Solids, Total Suspended	13.0	4.0	mg/l	1	02/08/02 YA	EPA 160.2
Total Organic Carbon	20.8	1.0	mg/l	1	02/14/02 ANJ	415.1/9060 M/5310B M

(a) Calculated as: (Nitrogen, Total Kjeldahl) - (Nitrogen, Ammonia)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	SURFACE WATER-2		
Lab Sample ID:	F12247-3	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0008120.D	1	02/08/02	JG	n/a	n/a	VC377
Run #2							

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
107-13-1	Acrylonitrile	ND	10	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
74-88-4	Methyl iodide	ND	10	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SURFACE WATER-2		
Lab Sample ID:	F12247-3	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	1.2	2.0	ug/l	J
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
110-57-6	Trans-1,4-Dichloro-2-Butene	ND	10	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
108-05-4	Vinyl Acetate	ND	10	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SURFACE WATER-2		
Lab Sample ID:	F12247-3	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Arsenic	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Barium	652	200	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Beryllium	< 4.0	4.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cadmium	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Chromium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cobalt	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Copper	< 25	25	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Iron	2200	300	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Lead	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	ug/l	1	02/11/02	02/13/02	LIR	SW846 7470A	EPA 245.1
Nickel	< 40	40	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Selenium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Silver	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Thallium	< 1.0	1.0	ug/l	1	02/12/02	02/13/02	ATX	EPA 279.2	EPA 200.9
Vanadium	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Zinc	< 20	20	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	SURFACE WATER-2		
Lab Sample ID:	F12247-3	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
BOD, 5 Day	55.1	2.0	mg/l	1	02/14/02	YA	EPA 405.1
Chemical Oxygen Demand	132	20	mg/l	1	02/11/02	LL	EPA 410.1
Hardness, Total	22.2	4.0	mg/l	1	02/18/02	EP	SW846 6010B/SM 2340B
Nitrogen, Ammonia	0.43	0.20	mg/l	1	02/14/02	LIR	EPA 350.1
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	02/08/02	LL	EPA 300/SW846 9056
Nitrogen, Total Kjeldahl	2.2	0.20	mg/l	1	02/14/02	LIR	EPA 351.3
Nitrogen, Total Organic [a]	1.8	0.40	mg/l	1	02/14/02	LIR	SM18 4500N
Phosphorus, Total	< 0.10	0.10	mg/l	1	02/08/02	LL	EPA 365.3
Solids, Total Dissolved	208	20	mg/l	2	02/09/02	YA	EPA 160.1
Solids, Total Suspended	14.0	4.0	mg/l	1	02/08/02	YA	EPA 160.2
Total Organic Carbon	31.1	2.0	mg/l	2	02/14/02	ANJ	415.1/9060 M/5310B M

(a) Calculated as: (Nitrogen, Total Kjeldahl) - (Nitrogen, Ammonia)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SURFACE WATER-3		
Lab Sample ID:	F12247-4	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0008121.D	1	02/08/02	JG	n/a	n/a	VC377
Run #2							

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
107-13-1	Acrylonitrile	ND	10	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
74-88-4	Methyl iodide	ND	10	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SURFACE WATER-3		
Lab Sample ID:	F12247-4	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
110-57-6	Trans-1,4-Dichloro-2-Butene	ND	10	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
108-05-4	Vinyl Acetate	ND	10	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SURFACE WATER-3		
Lab Sample ID:	F12247-4	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Arsenic	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Barium	< 200	200	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Beryllium	< 4.0	4.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cadmium	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Chromium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cobalt	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Copper	< 25	25	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Iron	2930	300	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Lead	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	ug/l	1	02/11/02	02/13/02	LIR	SW846 7470A	EPA 245.1
Nickel	< 40	40	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Selenium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Silver	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Thallium	< 1.0	1.0	ug/l	1	02/12/02	02/13/02	ATX	EPA 279.2	EPA 200.9
Vanadium	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Zinc	< 20	20	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	SURFACE WATER-3		
Lab Sample ID:	F12247-4	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
BOD, 5 Day	5.3	2.0	mg/l	1	02/14/02	YA	EPA 405.1
Chemical Oxygen Demand	84.5	20	mg/l	1	02/11/02	LL	EPA 410.1
Hardness, Total	40.5	4.0	mg/l	1	02/18/02	EP	SW846 6010B/SM 2340B
Nitrogen, Ammonia	0.44	0.20	mg/l	1	02/14/02	LIR	EPA 350.1
Nitrogen, Nitrate	0.10	0.10	mg/l	1	02/08/02	LL	EPA 300/SW846 9056
Nitrogen, Total Kjeldahl	2.5	0.20	mg/l	1	02/14/02	LIR	EPA 351.3
Nitrogen, Total Organic [a]	2.1	0.40	mg/l	1	02/14/02	LIR	SM18 4500N
Phosphorus, Total	0.16	0.10	mg/l	1	02/08/02	LL	EPA 365.3
Solids, Total Dissolved	190	20	mg/l	2	02/09/02	YA	EPA 160.1
Solids, Total Suspended	5.0	4.0	mg/l	1	02/08/02	YA	EPA 160.2
Total Organic Carbon	28.8	2.0	mg/l	2	02/14/02	ANJ	415.1/9060 M/5310B M

(a) Calculated as: (Nitrogen, Total Kjeldahl) - (Nitrogen, Ammonia)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SURFACE WATER-4		
Lab Sample ID:	F12247-5	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0008122.D	1	02/08/02	JG	n/a	n/a	VC377
Run #2							

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
107-13-1	Acrylonitrile	ND	10	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
74-88-4	Methyl iodide	ND	10	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SURFACE WATER-4		
Lab Sample ID:	F12247-5	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	16.4	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
110-57-6	Trans-1,4-Dichloro-2-Butene	ND	10	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
108-05-4	Vinyl Acetate	ND	10	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SURFACE WATER-4		
Lab Sample ID:	F12247-5	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Arsenic	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Barium	< 200	200	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Beryllium	< 4.0	4.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cadmium	< 5.0	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Chromium	11.1	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Cobalt	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Copper	< 25	25	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Iron	14100	300	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Lead	16.3	5.0	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Mercury	< 1.0	1.0	ug/l	1	02/11/02	02/13/02	LIR	SW846 7470A	EPA 245.1
Nickel	< 40	40	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Selenium	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Silver	< 10	10	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Thallium	< 1.0	1.0	ug/l	1	02/12/02	02/13/02	ATX	EPA 279.2	EPA 200.9
Vanadium	< 50	50	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A
Zinc	57.6	20	ug/l	1	02/08/02	02/11/02	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	SURFACE WATER-4		
Lab Sample ID:	F12247-5	Date Sampled:	02/07/02
Matrix:	AQ - Ground Water	Date Received:	02/07/02
		Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
BOD, 5 Day	45.8	2.0	mg/l	1	02/14/02	YA	EPA 405.1
Chemical Oxygen Demand	151	20	mg/l	1	02/11/02	LL	EPA 410.1
Hardness, Total	69.0	4.0	mg/l	1	02/18/02	EP	SW846 6010B/SM 2340B
Nitrogen, Ammonia	1.7	0.20	mg/l	1	02/14/02	LIR	EPA 350.1
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	02/08/02	LL	EPA 300/SW846 9056
Nitrogen, Total Kjeldahl	36.9	4.0	mg/l	20	02/14/02	LIR	EPA 351.3
Nitrogen, Total Organic [a]	35.2	4.2	mg/l	1	02/14/02	LIR	SM18 4500N
Phosphorus, Total	1.8	0.50	mg/l	5	02/08/02	LL	EPA 365.3
Solids, Total Dissolved	188	20	mg/l	2	02/09/02	YA	EPA 160.1
Solids, Total Suspended	270	4.0	mg/l	2	02/08/02	YA	EPA 160.2
Total Organic Carbon	86.4	10	mg/l	10	02/14/02	ANJ	415.1/9060 M/5310B M

(a) Calculated as: (Nitrogen, Total Kjeldahl) - (Nitrogen, Ammonia)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F12247-6	Date Sampled:	02/07/02
Matrix:	AQ - Trip Blank Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0008117.D	1	02/08/02	JG	n/a	n/a	VC377
Run #2							

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
107-13-1	Acrylonitrile	ND	10	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
74-88-4	Methyl iodide	ND	10	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	F12247-6	Date Sampled:	02/07/02
Matrix:	AQ - Trip Blank Water	Date Received:	02/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Omni-Oak Hammock(2)		

VOA Appendix I 40 CFR Part 258

CAS No.	Compound	Result	RL	Units	Q
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
110-57-6	Trans-1,4-Dichloro-2-Butene	ND	10	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
108-05-4	Vinyl Acetate	ND	10	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	90%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Tri-Tech Analytical Laboratories, Inc.

P.O. Box 140966 • Orlando, FL 32814-0966 • (407) 275-8463

See us on the web at : http://www.tri-techlabs.com

Accutests Laboratories, S.E
4405 Vineland Rd #C-15
Orlando, Florida 32811
Attention: Mr. Harry Behzadi

PROJECT NAME:
F12247

TTA Contact: L. Trytek

DATE REC	WORK ORDER	DATE/TIME SAMPLED	PARAMETER SAMPLE ID	METHOD	RESULT	UNITS	DATE/TIME ANALYZED	TECH
02/07/02	02-02-243-1	02/07/02 1100	Fecal **F12247-1**	9222 D	**30**	cfu's/ 100mls	02/07/02 1645	SB
02/07/02	02-02-243-2	02/07/02 1100	Fecal **F12247-2**	9222 D	**32**	cfu's/ 100mls	02/07/02 1645	SB
02/07/02	02-02-243-3	02/07/02 1145	Fecal **F12247-3**	9222 D	*** 392**	cfu's/ 100mls	02/07/02 1645	SB
02/07/02	02-02-243-4	02/07/02 1215	Fecal **F12247-4**	9222 D	*** 1050**	cfu's/ 100mls	02/07/02 1645	SB
02/07/02	02-02-243-5	02/07/02 1300	Fecal **F12247-5**	9222 D	**20**	cfu's/ 100mls	02/07/02 1645	SB
02/07/02	02-02-243	02/07/02	Fecal **QC Control**	9222 D	**1 U**	cfu's/ 100mls	02/07/02 1645	SB

* Approxiamate Number Due To High Count.
U - Material was analyzed for but not detected;
The value reported iS the minimum detection limit.

Reviewed By : Jennifer Trytek
Title : Quality Control Director
Date Reviewed : February 19, 2002

"HELP SAFEGUARD YOUR FUTURE AND YOUR HEALTH" CALL TTA TODAY!
DOH #E83294
DEP #900405G
AIHA #169077

Accutests Laboratories, S.E
4405 Vineland Rd #C-15
Orlando, Florida 32811
Attention: Mr. Harry Behzadi

PROJECT NAME:
F11757

TTA Contact: L. Trytek

DATE REC	WORK ORDER	DATE/TIME SAMPLED	PARAMETER SAMPLE ID	METHOD	RESULT	DATE/TIME ANALYZED	TECH
02/07/02	02-02-243-1	02/07/02 1100	Chlorophyll a **F12247-1**	**SM 10200H**	**2.74**	02/16/02 0900-1300	LT
02/07/02	02-02-243-2	02/07/02 1100	Chlorophyll a **F12247-2**	**SM 10200H**	**5.12**	02/16/02 0900-1300	LT
02/07/02	02-02-243-3	02/07/02 1145	Chlorophyll a **F12247-3**	**SM 10200H**	**6.07**	02/16/02 0900-1300	LT
02/07/02	02-02-243-4	02/07/02 1215	Chlorophyll a **F12247-4**	**SM 10200H**	**7.26**	02/16/02 0900-1300	LT
02/07/02	02-02-243-5	02/07/02 1300	Chlorophyll a **F12247-5**	**SM 10200H**	**10.24**	02/16/02 0900-1300	LT

Reviewed By : Tamara Lal
Title : Quality Control Director
Date Reviewed : February 19, 2002

NOTE: Not Certefied For The Above Referenced Parameter.

"HELP SAFEGUARD YOUR FUTURE AND YOUR HEALTH" CALL TTA TODAY!
DOH #E83294
DEP #900405G
AIHA #169077

Unionized Ammonia Calculator v1.2;
after original by Dr. Landon Ross
Florida Department of Environmental Protection

Omni - Oak Hammock SW-1

pH (SU)	6.39
Temperature (°C)	23.6
Salinity (ppt)	
Total ammonia (mg/L as N)	0.55

Unionized Ammonia (mg/L as NH3)	**0.00084**

Omni - Oak Hammock SW-1 DUP

pH (SU)	6.39
Temperature (°C)	23.6
Salinity (ppt)	
Total ammonia (mg/L as N)	0.37

Unionized Ammonia (mg/L as NH3)	**0.00057**

Omni - Oak Hammock SW-2

pH (SU)	4.65
Temperature (°C)	25.3
Salinity (ppt)	
Total ammonia (mg/L as N)	0.43

Unionized Ammonia (mg/L as NH3)	**0.000014**

Omni - Oak Hammock SW-3

pH (SU)	5.86
Temperature (°C)	23.9
Salinity (ppt)	
Total ammonia (mg/L as N)	0.44

Unionized Ammonia (mg/L as NH3)	**0.00020**

Omni - Oak Hammock SW-4

pH (SU)	5.4
Temperature (°C)	24.8
Salinity (ppt)	
Total ammonia (mg/L as N)	1.7

Unionized Ammonia (mg/L as NH3)	**0.00029**

CHAIN OF CUSTODY

ACCUTEST

4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #: F12247

ACCUTEST QUOTE #: 11802A-JF AND 11802A2-JF

CLIENT INFORMATION

NAME: KUBAL-FURR & ASSOCIATES

ADDRESS: PO BOX 80247

CITY, STATE, ZIP: SIMPSONVILLE, SC 29680

SEND REPORT TO: DIANE ROSSETER

PHONE #: (864) 962-9490

FACILITY INFORMATION

PROJECT NAME: OMNI - OAK HAMMOCK

LOCATION: HOLOPAW, FL

PROJECT NO.: 480H01

FAX #: (864) 962-5309

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	APP. I VOCs	APP. I METALS	NH3-N	TOTAL HARDNESS	BOD-05	IRON, MERCURY, NITRATE	TOTAL DISSOLVED SOLIDS / TOTAL SUSPENDED SOLIDS	TOC / COD	FECAL COLIFORM	TOTAL PHOSPHATES / ORGANIC NITROGEN	CHLOROPHYLL A	LAB USE ONLY
1	SURFACE WATER-1	2/7/02	1100	GK	GW	10	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	DUP, SURFACE WATER-1		1100	GK	GW	10	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	
3	SURFACE WATER-2		1145	GK	GW	10	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	✓	✓	—	
4	SURFACE WATER-3		1215	GK	GW	10	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5	SURFACE WATER-4		1300	GK	GW	10	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	✓	✓	✓	
6	TRIP BLANK	2/6/02	1125	DV		2	✓					✓											

DATA TURNAROUND INFORMATION

- ☐ STANDARD
- ☐ 48 HOUR RUSH
- ☐ 24 HOUR EMERGENCY
- ☒ OTHER 7 DAY TAT

APPROVED BY: _____

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- ☐ STANDARD
- ☐ COMMERCIAL "B"
- ☐ DISK DELIVERABLE
- ☐ STATE FORMS
- ☐ OTHER (SPECIFY) _____

COMMENTS/REMARKS

SEE TASK ORDER # 480H01 SW

TI BY GFAA TO ACHIEVE REPORTING LIMIT OF AT LEAST 2.0 UG/L

RL OF 4.0 UG/L REQUIRED FOR BERYLLIUM, OK'D PER H. BEHZADI

"J" FLAGGED VOLATILE ANALYTES

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
	2/7/02	1.	2.		2. 02/07/02 1500
RELINQUISHED BY: 3.	DATE TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE 2.4, 3.0, 2.6c

GC/MS Volatiles

QC Data Summaries

Blank Spike Summary

Job Number: F12247
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock(2)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC377-BS	C0008105.D	1	02/08/02	JG	n/a	n/a	VC377

The QC reported here applies to the following samples: Method: SW846 8260B

F12247-1, F12247-2, F12247-3, F12247-4, F12247-5, F12247-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	119	95	67-125
107-13-1	Acrylonitrile	125	102	82	58-126
71-43-2	Benzene	25	25.0	100	75-125
74-97-5	Bromochloromethane	25	27.5	110	75-137
75-27-4	Bromodichloromethane	25	27.1	108	75-125
75-25-2	Bromoform	25	27.7	111	72-125
108-90-7	Chlorobenzene	25	24.1	96	75-125
75-00-3	Chloroethane	25	22.2	89	58-136
67-66-3	Chloroform	25	26.8	107	75-125
75-15-0	Carbon disulfide	125	132	106	48-142
56-23-5	Carbon tetrachloride	25	29.8	119	75-136
75-34-3	1,1-Dichloroethane	25	25.8	103	75-125
75-35-4	1,1-Dichloroethylene	25	26.8	107	67-138
96-12-8	1,2-Dibromo-3-chloropropane	25	21.3	85	64-125
106-93-4	1,2-Dibromoethane	25	23.7	95	75-125
107-06-2	1,2-Dichloroethane	25	26.6	106	75-125
78-87-5	1,2-Dichloropropane	25	25.9	104	75-125
124-48-1	Dibromochloromethane	25	25.6	102	75-125
156-59-2	cis-1,2-Dichloroethylene	25	26.2	105	75-129
10061-01-5	cis-1,3-Dichloropropene	25	23.7	95	75-125
95-50-1	o-Dichlorobenzene	25	23.9	96	75-125
106-46-7	p-Dichlorobenzene	25	24.6	98	75-125
156-60-5	trans-1,2-Dichloroethylene	25	25.0	100	73-125
10061-02-6	trans-1,3-Dichloropropene	25	21.6	86	75-125
100-41-4	Ethylbenzene	25	23.6	94	68-135
591-78-6	2-Hexanone	125	112	90	68-125
108-10-1	4-Methyl-2-pentanone	125	121	97	75-125
74-83-9	Methyl bromide	25	24.4	98	59-146
74-87-3	Methyl chloride	25	24.2	97	50-142
74-95-3	Methylene bromide	25	26.6	106	75-125
75-09-2	Methylene chloride	25	25.6	102	69-125
78-93-3	Methyl ethyl ketone	125	118	94	70-125
100-42-5	Styrene	25	23.4	94	75-125
630-20-6	1,1,1,2-Tetrachloroethane	25	26.2	105	75-125
71-55-6	1,1,1-Trichloroethane	25	29.2	117	75-132
79-34-5	1,1,2,2-Tetrachloroethane	25	21.2	85	75-125

Blank Spike Summary

Job Number: F12247
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock(2)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC377-BS	C0008105.D	1	02/08/02	JG	n/a	n/a	VC377

The QC reported here applies to the following samples: Method: SW846 8260B

F12247-1, F12247-2, F12247-3, F12247-4, F12247-5, F12247-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
79-00-5	1,1,2-Trichloroethane	25	23.4	94	75-125
96-18-4	1,2,3-Trichloropropane	25	22.3	89	75-125
127-18-4	Tetrachloroethylene	25	29.3	117	75-126
108-88-3	Toluene	25	23.3	93	75-125
79-01-6	Trichloroethylene	25	26.0	104	75-125
75-69-4	Trichlorofluoromethane	25	29.2	117	55-162
75-01-4	Vinyl chloride	25	23.8	95	60-147
108-05-4	Vinyl Acetate	125	143	114	47-125
1330-20-7	Xylene (total)	75	72.0	96	75-125

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	111%	80-120%
17060-07-0	1,2-Dichloroethane-D4	113%	80-120%
2037-26-5	Toluene-D8	93%	80-120%
460-00-4	4-Bromofluorobenzene	93%	80-120%

Method Blank Summary

Job Number: F12247
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock(2)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC377-MB	C0008106.D	1	02/08/02	JG	n/a	n/a	VC377

The QC reported here applies to the following samples: Method: SW846 8260B

F12247-1, F12247-2, F12247-3, F12247-4, F12247-5, F12247-6

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
107-13-1	Acrylonitrile	ND	10	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	2.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
74-88-4	Methyl iodide	ND	10	ug/l	
74-95-3	Methylene bromide	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	

Method Blank Summary

Job Number: F12247
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock(2)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC377-MB	C0008106.D	1	02/08/02	JG	n/a	n/a	VC377

The QC reported here applies to the following samples: Method: SW846 8260B

F12247-1, F12247-2, F12247-3, F12247-4, F12247-5, F12247-6

CAS No.	Compound	Result	RL	Units	Q
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
110-57-6	Trans-1,4-Dichloro-2-Butene	ND	10	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
108-05-4	Vinyl Acetate	ND	10	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	110%	80-120%
17060-07-0	1,2-Dichloroethane-D4	111%	80-120%
2037-26-5	Toluene-D8	91%	80-120%
460-00-4	4-Bromofluorobenzene	92%	80-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F12247
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock(2)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F12163-1MS	C0008113.D	1	02/08/02	JG	n/a	n/a	VC377
F12163-1MSD	C0008114.D	1	02/08/02	JG	n/a	n/a	VC377
F12163-1	C0008108.D	1	02/08/02	JG	n/a	n/a	VC377

The QC reported here applies to the following samples: Method: SW846 8260B

F12247-1, F12247-2, F12247-3, F12247-4, F12247-5, F12247-6

CAS No.	Compound	F12163-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	117	94	117	94	0	61-125/15
107-13-1	Acrylonitrile	ND		125	99.9	80	101	81	1	69-125/15
71-43-2	Benzene	ND		25	25.7	103	25.7	103	0	75-125/15
74-97-5	Bromochloromethane	ND		25	26.7	107	26.6	106	0	75-134/15
75-27-4	Bromodichloromethane	ND		25	25.1	100	25.8	103	3	75-125/15
75-25-2	Bromoform	ND		25	22.4	90	21.2	85	6	66-125/15
108-90-7	Chlorobenzene	ND		25	24.0	96	24.1	96	0	75-125/15
75-00-3	Chloroethane	ND		25	22.8	91	22.7	91	0	53-125/15
67-66-3	Chloroform	ND		25	26.9	108	26.5	106	1	75-125/15
75-15-0	Carbon disulfide	ND		125	140	112	138	110	1	51-138/1
56-23-5	Carbon tetrachloride	ND		25	27.2	109	27.6	110	1	74-131/1
75-34-3	1,1-Dichloroethane	ND		25	25.5	102	25.2	101	1	75-125/15
75-35-4	1,1-Dichloroethylene	ND		25	26.9	108	27.2	109	1	66-140/15
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	18.9	76	19.0	76	1	57-125/15
106-93-4	1,2-Dibromoethane	ND		25	23.8	95	23.7	95	0	75-125/15
107-06-2	1,2-Dichloroethane	ND		25	24.6	98	25.1	100	2	75-125/15
78-87-5	1,2-Dichloropropane	ND		25	25.8	103	25.9	104	0	75-125/15
124-48-1	Dibromochloromethane	ND		25	23.2	93	22.5	90	3	75-125/15
156-59-2	cis-1,2-Dichloroethylene	ND		25	26.0	104	26.3	105	1	75-136/15
10061-01-5	cis-1,3-Dichloropropene	ND		25	21.7	87	21.2	85	2	71-125/15
95-50-1	o-Dichlorobenzene	ND		25	24.9	100	24.5	98	2	75-125/15
106-46-7	p-Dichlorobenzene	ND		25	25.3	101	24.9	100	2	75-125/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	25.8	103	25.3	101	2	73-125/15
10061-02-6	trans-1,3-Dichloropropene	ND		25	17.2	69	16.6	66	4	62-125/15
100-41-4	Ethylbenzene	ND		25	24.2	97	23.6	94	3	75-125/15
591-78-6	2-Hexanone	ND		125	114	91	115	92	1	71-125/15
108-10-1	4-Methyl-2-pentanone	ND		125	123	98	123	98	0	75-125/15
74-83-9	Methyl bromide	ND		25	26.2	105	25.4	102	3	67-146/15
74-87-3	Methyl chloride	ND		25	28.1	112	24.8	99	12	47-160/15
74-95-3	Methylene bromide	ND		25	25.1	100	25.3	101	1	75-125/15
75-09-2	Methylene chloride	ND		25	26.1	104	25.7	103	2	69-125/15
78-93-3	Methyl ethyl ketone	ND		125	114	91	114	91	0	70-125/15
100-42-5	Styrene	ND		25	23.7	95	23.1	92	3	69-126/15
630-20-6	1,1,1,2-Tetrachloroethane	ND		25	25.4	102	24.2	97	5	75-125/15
71-55-6	1,1,1-Trichloroethane	ND		25	28.3	113	28.9	116	2	75-131/15
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	21.6	86	21.6	86	0	75-125/1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F12247
Account: KFSSCSIM Kubal-Furr & Associates
Project: Omni-Oak Hammock(2)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F12163-1MS	C0008113.D	1	02/08/02	JG	n/a	n/a	VC377
F12163-1MSD	C0008114.D	1	02/08/02	JG	n/a	n/a	VC377
F12163-1	C0008108.D	1	02/08/02	JG	n/a	n/a	VC377

The QC reported here applies to the following samples: Method: SW846 8260B

F12247-1, F12247-2, F12247-3, F12247-4, F12247-5, F12247-6

CAS No.	Compound	F12163-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
79-00-5	1,1,2-Trichloroethane	ND		25	23.5	94	23.7	95	1	75-125/15
96-18-4	1,2,3-Trichloropropane	ND		25	21.6	86	21.8	87	1	72-125/15
127-18-4	Tetrachloroethylene	ND		25	28.2	113	29.2	117	3	75-125/15
108-88-3	Toluene	ND		25	23.9	96	23.8	95	0	75-125/15
79-01-6	Trichloroethylene	ND		25	26.5	106	26.2	105	1	75-125/15
75-69-4	Trichlorofluoromethane	ND		25	30.7	123	30.3	121	1	60-139/30
75-01-4	Vinyl chloride	ND		25	27.1	108	25.7	103	5	52-169/15
108-05-4	Vinyl Acetate	ND		125	133	106	132	106	1	40-125/18
1330-20-7	Xylene (total)	ND		75	73.1	97	71.5	95	2	75-125/15

CAS No.	Surrogate Recoveries	MS	MSD	F12163-1	Limits
1868-53-7	Dibromofluoromethane	110%	110%	110%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	107%	106%	80-120%
2037-26-5	Toluene-D8	92%	94%	92%	80-120%
460-00-4	4-Bromofluorobenzene	91%	92%	91%	80-120%

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4149
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/08/02

Metal	RL	IDL	MB raw	final
Aluminum	200	9.44		
Antimony	5.0	2.56	2.7	<5.0
Arsenic	10	3.15	1.6	<10
Barium	200	.94	-0.27	<200
Beryllium	5.0	.22	-0.57	<5.0
Cadmium	5.0	.27	-0.50	<5.0
Calcium	1000	10.2		
Chromium	10	.35	0.19	<10
Cobalt	50	.55	-0.11	<50
Copper	25	.71	1.0	<25
Iron	300	9.02	6.2	<300
Lead	5.0	1.16	2.5	<5.0
Magnesium	5000	25.5		
Manganese	15	.26		
Molybdenum	50	1.01		
Nickel	40	.8	-0.50	<40
Potassium	5000	49		
Selenium	10	2.5	3.2	<10
Silver	10	.59	0.79	<10
Sodium	5000	173		
Thallium	10	2.07	anr	
Tin	50	1.03		
Vanadium	50	.58	-0.11	<50
Zinc	20	.36	1.1	<20

Associated samples MP4149: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4149
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:			02/08/02					02/08/02		
Metal	F12240-7 Original	MS	Spikelot MPFLICP	% Rec	QC Limits	F12240-7 Original	MSD	Spikelot MPFLICP	% Rec	QC Limits
Aluminum										
Antimony	0.0	868	1000	86.8	66-120	0.0	889	1000	88.9	66-120
Arsenic	13.7	4080	4000	101.7	75-120	13.7	4150	4000	103.4	75-120
Barium	5.5	3730	4000	93.1	72-120	5.5	3780	4000	94.4	72-120
Beryllium	0.0	101	100	101.0	73-120	0.0	103	100	103.0	73-120
Cadmium	0.0	93.5	100	93.5	72-120	0.0	96.0	100	96.0	72-120
Calcium										
Chromium	0.56	402	400	100.4	69-122	0.56	410	400	102.4	69-122
Cobalt	0.0	960	1000	96.0	69-120	0.0	979	1000	97.9	69-120
Copper	0.0	495	500	99.0	70-120	0.0	502	500	100.4	70-120
Iron	1430	28000	27000	98.4	72-122	1430	28700	27000	101.0	72-122
Lead	0.0	968	1000	96.8	70-126	0.0	987	1000	98.7	70-126
Magnesium										
Manganese										
Molybdenum										
Nickel	0.0	954	1000	95.4	69-120	0.0	976	1000	97.6	69-120
Potassium										
Selenium	8.3	4090	4000	102.0	74-120	8.3	4160	4000	103.8	74-120
Silver	0.0	103	100	103.0	52-126	0.0	104	100	104.0	52-126
Sodium										
Thallium	anr									
Tin										
Vanadium	3.6	1040	1000	103.6	75-122	3.6	1060	1000	105.6	75-122
Zinc	2.7	1020	1000	101.7	68-123	2.7	1050	1000	104.7	68-123

Associated samples MP4149: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4149
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/08/02

Metal	F12240-7 Original	DUP	RPD	QC Limits
Aluminum				
Antimony	0.0	0.0	NC	0-20
Arsenic	13.7	12.5	9.2	0-29
Barium	5.5	5.1	7.5	0-20
Beryllium	0.0	0.0	NC	0-25
Cadmium	0.0	0.0	NC	0-20
Calcium				
Chromium	0.56	0.90	46.6	0-47
Cobalt	0.0	0.67	200.0(a)	0-30
Copper	0.0	0.0	NC	0-21
Iron	1430	1510	5.4	0-23
Lead	0.0	0.0	NC	0-44
Magnesium				
Manganese				
Molybdenum				
Nickel	0.0	1.3	200.0(a)	0-56
Potassium				
Selenium	8.3	9.8	16.6	0-36
Silver	0.0	0.0	NC	0-20
Sodium				
Thallium	anr			
Tin				
Vanadium	3.6	3.8	5.4	0-28
Zinc	2.7	3.3	20.0	0-54

Associated samples MP4149: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4149
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/08/02

Metal	BSP Result	Spikelot MPFLICP	% Rec	QC Limits
Aluminum				
Antimony	850	1000	85.0	80-120
Arsenic	3800	4000	95.0	80-120
Barium	4000	4000	100.0	80-120
Beryllium	102	100	102.0	80-120
Cadmium	94.7	100	94.7	80-120
Calcium				
Chromium	408	400	102.0	80-120
Cobalt	999	1000	99.9	80-120
Copper	523	500	104.6	80-120
Iron	27300	27000	101.1	80-120
Lead	1010	1000	101.0	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel	1010	1000	101.0	80-120
Potassium				
Selenium	3940	4000	98.5	80-120
Silver	101	100	101.0	80-120
Sodium				
Thallium	anr			
Tin				
Vanadium	1050	1000	105.0	80-120
Zinc	989	1000	98.9	80-120

Associated samples MP4149: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4149
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/08/02

Metal	F12240-7 Original	SDL 1:5	RPD	QC Limits
Aluminum				
Antimony	0.00	21.9		0-10
Arsenic	13.7	31.8	132.1(a)	0-10
Barium	5.49	0.00	100.0(a)	0-10
Beryllium	0.00	0.00	NC	0-10
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	0.560	5.41	866.1(a)	0-10
Cobalt	0.00	3.65		0-10
Copper	0.00	0.00	NC	0-10
Iron	1430	2590	80.9*(b)	0-10
Lead	0.00	8.39		0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	0.00	5.02		0-10
Potassium				
Selenium	8.28	18.7	125.4(a)	0-10
Silver	0.00	8.44		0-10
Sodium				
Thallium	anr			
Tin				
Vanadium	3.59	11.5	219.5(a)	0-10
Zinc	2.70	8.12	200.7(a)	0-10

Associated samples MP4149: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4152
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 02/11/02

Metal	RL	IDL	MB raw	final
Mercury	1.0	.06	-0.20	<1.0

Associated samples MP4152: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4152
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 02/11/02 02/11/02

Metal	F12247-1 Original	DUP	RPD	QC Limits	F12247-1 Original	MS	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	0.085	200.0(a)	0-20	0.0	3.2	3	106.7	62-131

Associated samples MP4152: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4152
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 02/11/02

Metal	F12247-1 Original	MSD	Spikelot HGFLWS	% Rec	QC Limits
Mercury	0.0	3.3	3	110.0	62-131

Associated samples MP4152: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

QC Batch ID: MP4152
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 02/11/02

Metal	BSP Result	Spikelot HGFLWS	% Rec	QC Limits
Mercury	3.2	3	106.7	80-120

Associated samples MP4152: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F12247
Account: ALSE - Accutest Labs S. E.
Project: ALSE395 - KFSSCSIM: Omni-Oak Hammock

QC Batch ID: MP779
Matrix Type: AQUEOUS

Methods: EPA 279.2
Units: ug/l

Prep Date: 02/12/02

Metal	RL	IDL	MB raw	final
Thallium	1.0	.1	-0.20	<1.0

Associated samples MP779: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F12247
Account: ALSE - Accutest Labs S. E.
Project: ALSE395 - KFSSCSIM: Omni-Oak Hammock

QC Batch ID: MP779
Matrix Type: AQUEOUS

Methods: EPA 279.2
Units: ug/l

Prep Date: 02/12/02 02/12/02

Metal	F12247-1 Original	DUP	RPD	QC Limits	F12247-1 Original	MS	Spikelot MPTFR1	% Rec	QC Limits
Thallium	0.0	0.0	NC	0-20	0.0	40.0	40	100.0	75-125

Associated samples MP779: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F12247
Account: ALSE - Accutest Labs S. E.
Project: ALSE395 - KFSSCSIM: Omni-Oak Hammock

QC Batch ID: MP779
Matrix Type: AQUEOUS

Methods: EPA 279.2
Units: ug/l

Prep Date: 02/12/02

Metal	F12247-1 Original	MSD	Spikelot MPTFR1	% Rec	QC Limits
Thallium	0.0	39.0	40	97.5	75-125

Associated samples MP779: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F12247
Account: ALSE - Accutest Labs S. E.
Project: ALSE395 - KFSSCSIM: Omni-Oak Hammock

QC Batch ID: MP779
Matrix Type: AQUEOUS

Methods: EPA 279.2
Units: ug/l

Prep Date: 02/12/02

Metal	BSP Result	Spikelot MPTFR1	% Rec	QC Limits
Thallium	37.2	40	93.0	80-120

Associated samples MP779: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: F12247
Account: ALSE - Accutest Labs S. E.
Project: ALSE395 - KFSSCSIM: Omni-Oak Hammock

QC Batch ID: MP779
Matrix Type: AQUEOUS

Methods: EPA 279.2
Units: ug/l

Prep Date: 02/12/02

Metal	F12247-1 Original	SDL 1:5	RPD	QC Limits
Thallium	0.00	0.00	NC	0-10

Associated samples MP779: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

Analyte	Batch ID	RL	MB Result	Units	BSP %Recov	QC Limits
BOD, 5 Day	GP2937/GN8892	2.0	<2.0	mg/l	108.0	78-124%
BOD, 5 Day	GP2937/GN8892	2.0	0.0	mg/l		
Chemical Oxygen Demand	GP2941/GN8904	20	<20	mg/l	106.0	80-120%
Nitrogen, Ammonia	GP2960/GN8932	0.20	<0.20	mg/l	98.5	80-120%
Nitrogen, Ammonia	GP2960/GN8932	0.20	<0.20	mg/l	97.4	80-120%
Nitrogen, Nitrate	GP2928/GN8891	0.10	<0.10	mg/l	91.0	90-110%
Nitrogen, Nitrite	GP2928/GN8891	0.10	<0.10	mg/l	94.0	90-110%
Nitrogen, Total Kjeldahl	GP2942/GN8905	0.20	<0.20	mg/l	102.4	80-120%
Phosphorus, Total	GP2930/GN8890	0.10	<0.10	mg/l	98.4	80-120%
Solids, Total Dissolved	GN8884	10	<10	mg/l		
Solids, Total Suspended	GN8886	4.0	<4.0	mg/l		

Associated Samples:
Batch GN8884: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GN8886: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2928: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2930: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2937: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2941: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2942: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2960: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
BOD, 5 Day	GP2937/GN8892	M23344-1	mg/l	2740	2660	3.0	0-50%
Chemical Oxygen Demand	GP2941/GN8904	F12260-1	mg/l	<20	<20	0.0	0-10%
Nitrogen, Ammonia	GP2960/GN8932	F12247-1	mg/l	0.55	0.55	0.0	0-20%
Nitrogen, Nitrate	GP2928/GN8891	F12243-4	mg/l	<0.10	<0.10	0.0	0-20%
Nitrogen, Nitrite	GP2928/GN8891	F12243-4	mg/l	<0.010	<0.010	0.0	0-20%
Nitrogen, Total Kjeldahl	GP2942/GN8905	F12247-1	mg/l	1.9	1.9	0.6	0-20%
Phosphorus, Total	GP2930/GN8890	F12232-1	mg/l	0.34	0.34	0.0	0-20%
Solids, Total Dissolved	GN8884	F12247-1	mg/l	122	136	10.8	0-11%
Solids, Total Suspended	GN8886	F12247-1	mg/l	17.0	18.0	5.7	0-34%

Associated Samples:
Batch GN8884: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GN8886: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2928: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2930: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2937: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2941: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2942: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2960: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
BOD, 5 Day	GP2937/GN8892	M23344-1	mg/l	2740	198	2940	99.0	62-135%
Chemical Oxygen Demand	GP2941/GN8904	F12260-1	mg/l	<20	50	68.6	111.0	80-120%
Nitrogen, Ammonia	GP2960/GN8932	F12247-1	mg/l	0.55	0.50	1.0	97.3	75-125%
Nitrogen, Nitrate	GP2928/GN8891	F12243-4	mg/l	<0.10	1	0.93	93.0	80-120%
Nitrogen, Nitrate	GP2928/GN8891	F12243-4	mg/l	<0.10	1	0.94	94.0	80-120%
Nitrogen, Nitrite	GP2928/GN8891	F12243-4	mg/l	<0.010	1	0.99	99.0	80-120%
Nitrogen, Nitrite	GP2928/GN8891	F12243-4	mg/l	<0.010	1	0.93	93.0	80-120%
Nitrogen, Total Kjeldahl	GP2942/GN8905	F12247-1	mg/l	1.9	1.00	3.0	111.1	70-131%
Phosphorus, Total	GP2930/GN8890	F12232-1	mg/l	0.34	.300	0.55	71.5*	75-125%

Associated Samples:
Batch GP2928: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2930: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2937: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2941: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2942: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5
Batch GP2960: F12247-1, F12247-2, F12247-3, F12247-4, F12247-5

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: F12247
Account: KFSSCSIM - Kubal-Furr & Associates
Project: KFSSCSIM3203 - Omni-Oak Hammock(2)

File ID: 02020801.IC Date Analyzed: 02/08/02 Methods: EPA 300/SW846 9056
Analyst: LL Run ID: GN8891
Parameters: Nitrogen, Nitrate

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:36	GN8891-ICV1	1		
08:50	GN8891-ICB1	1		
09:05	GN8891-CCV1	1		
09:19	GN8891-CCB1	1		
09:34	GP2928-MB1	1		
09:48	GP2928-B1	1		
10:03	GP2928-S1	1		
10:18	GP2928-S2	1		
10:32	GP2928-D1	1		
10:47	F12243-4	1		(sample used for QC only; not part of login F12247)
11:01	ZZZZZZ	1		
11:16	ZZZZZZ	1		
11:30	GN8891-CCV2	1		
11:45	GN8891-CCB2	1		
11:59	F12247-1	1		
12:14	F12247-2	1		
12:28	F12247-3	1		
12:43	F12247-4	1		
12:57	F12247-5	1		
---------->	Last reportable sample/prep for job F12247			
13:32	ZZZZZZ	1		
13:47	ZZZZZZ	1		
14:01	ZZZZZZ	1		
14:16	GN8891-CCV3	1		
14:30	GN8891-CCB3	1		
---------->	Last reportable CCB for job F12247			
14:45	ZZZZZZ	1		
14:59	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:28	GN8891-CCV4	1		
15:43	GN8891-CCB4	1		

Refer to raw data for calibration curve and standards.

4
3

Grab Sampling Log—Water

Project No. 480H01 Site Location: OMNI - OAK HAMMOCK

Sample Date: 2/7/02 Arrival Time: 1013 Sample Time: 1100

Sample ID: SURFACE WATER - 1 Duplicate: Y I N Field Personnel: SS/GK

Weather Cond. PARTLY SUNNY BREEZY Locking Cap: ~~Y~~ I N Well Pad Cond. —

Sample Temp. 23.6°C Spec. Conductivity: 133.5 µS pH: 6.39

Sampling Method: GRAB

Method(s)	Container Desription	Preservative
VARIOUS	VARIOUS	VARIOUS

Remarks: DUPLICATE - DUP SURFACE WATER - 1, SMALL FLOW - DEEP WATER IN CREEK

TURBIDITY = 3.40, ORP = 50 mV, DO = 4.57 mg/L

NO NOTABLE SHEEN/FILM ON WATER, COLOR OF WATER CLEAR TO SLIGHTLY BROWN - TANNIC ACID?

Sample Date: 2/7/02 Arrival Time: 1124 Sample Time: 1145

Sample ID: SURFACE WATER - 2 Duplicate: Y I (N) Field Personnel: SS/GK

Weather Cond. PARTLY CLOUDY Locking Cap: ~~Y~~ I N Well Pad Cond. —

Sample Temp. 25.3°C Spec. Conductivity: 173.9 µS pH: 4.65

Sampling Method: GRAB

Method(s)	Container Desription	Preservative
VARIOUS	VARIOUS	VARIOUS

OR

Remarks: WATER LOW IN CREEK - NO FLOW - APPEARS STAGNANT

TURBIDITY = 1.06, ORP = 130 mV, DO = 7.30 mg/L

NO NOTABLE SHEEN/FILM ON WATER, COLOR OF WATER CLEAR TO SLIGHTLY BROWN - TANNIC ACID?

Grab Sampling Log—Water

Project No. 480H01 Site Location: OMNI - OAK HAMMOCK

Sample Date: 2/7/02 Arrival Time: 1158 Sample Time: 1215

Sample ID: SURFACE WATER - 3 Duplicate: Y / (N) Field Personnel: SS/GK

Weather Cond. PARTLY CLOUDY + BREEZY Locking Cap: ~~Y~~ N Well Pad Cond. ✓

Sample Temp. 23.9 °C Spec. Conductivity: 187.2 µS pH: 5.86

Sampling Method: GRAB

Method(s)	Container Desription	Preservative
VARIOUS	VARIOUS	VARIOUS

Remarks: SLIGHT FLOW IN CREEK - WATER LOW

TURBIDITY = 4.23 ORP = 115 mV DO = 4.20

NO NOTABLE SHEEN/FILM ON WATER, COLOR OF WATER CLEAR TO SLIGHTLY BROWN → TANNIC ACID?

Sample Date: 2/7/02 Arrival Time: 1244 Sample Time: 1300

Sample ID: SURFACE WATER - 4 Duplicate: Y / (N) Field Personnel: SS/GK

Weather Cond. PARTLY CLOUDY + BREEZY Locking Cap: Y ~~N~~ Well Pad Cond. ✓

Sample Temp. 24.8 °C Spec. Conductivity: 170.5 µS pH: 5.40

Sampling Method: GRAB

Method(s)	Container Desription	Preservative
VARIOUS	VARIOUS	VARIOUS

Remarks: CREEK FULL - GOOD WATER LEVEL - NOT FLOWING - STAGNANT - GREEN ALGAE ON TOP OF WATER

TURBIDITY = 16.4 ORP = 132 mV DO = 4.01 mg/L

NO NOTABLE SHEEN/FILM ON WATER → ALGAE, COLOR OF WATER CLEAR TO SLIGHTLY BROWN → TANNIC ACID?

Calibration Log

Project No. 480H01 Date: 2-7-02

Client: Omni Waste Site Location: Hdopaw

Conductivity Meter:

Meter Make/Model:	Oakton	*Meter Serial No.*	82200
Battery:	OK	*Time:*	10:19 am
Temperature (° F):	23.7	*Standard µS:*	1386
		Standard Reading:	1386

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pH Meter:

Meter Make/Model:	Oakton	*Meter Serial No.*	82200
Battery:	OK	*Time:*	10:19 am
7.0 Buffer:	7.01	*4.0 Buffer:*	4.00
		10.0 Buffer:	10.06

GEOTECHNICAL INVESTIGATION REPORT

1. INTRODUCTION

2. PURPOSE OF ANALYSIS

3. GENERAL

4. METHOD OF ANALYSIS

4.1 Soil Borings
4.2 Standard Penetration Test (SPT)
4.3 Soil Sampling
4.4 Laboratory Testing

5. TEST RESULTS AND ANAYSES

5.1 Subsurface Soil Stratigraphy
5.2 Standard Penetration Test (SPT)
5.3 Basic Geotechnical Properties
5.4 Elastic Soil Modulus
5.5 Modified Compression Index

6. SUMMARY AND CONCLUSIONS

REFERENCES

TABLES

FIGURES

ATTACHMENTS

Attachment 1 – Mud Rotary Boring Logs (SPT-1 through SPT-15)
Attachment 2 – Rotosonic Boring Logs (SB-1 through SB-3)
Attachment 3 – Laboratory Test Results

FIGURES

1. Location of Mud Rotary and Rotosonic Borings
2. FGS Boring Locations
3. Variation of SPT N-Value with Depth
4. Variation of Corrected SPT $(N_1)_{60}$ with Depth
5. Correlation of SPT and Relative Density
6. Relative Density of Subsurface Soils
7. Relationship between Peak Drained Friction Angle and SPT N-Value for Normally Consolidated, Unaged, Uncemented Silica Sands
8. Variation of Elastic Modulus with Depth

1. INTRODUCTION

The site chosen for the development of the Oak Hammock Disposal (OHD) facility is located in eastern Osceola County, west of highway U.S. 441, approximately 5 miles south of Holopaw. A geotechnical site characterization program was carried out to evaluate the OHD site. Results of the geotechnical investigation are used to evaluate slope stability and other geotechnical design aspects of the proposed landfill.

2. PURPOSE OF ANALYSIS

The purpose of this calculation package is to present, interpret, and summarize the geotechnical site characterization program performed for the OHD facility. In addition, geotechnical material properties of soils are evaluated using results of in-situ and laboratory tests and empirical relationships. Soil borings, soil sampling, in-situ testing, and laboratory testing are presented and discussed. The scope of this calculation package is limited to site characterization activities as related to the geotechnical investigation. Issues related to the hydrogeological investigation are presented in a separate document entitled "Hydrogeologic Investigation Report and Water Quality Monitoring Plan", prepared by Kubal-Furr & Associates (KFA) as an appendix to the permit application.

3. GENERAL

A site characterization program was carried out to evaluate geological and geotechnical properties of subsurface soils at the proposed OHD facility. Fifteen mud rotary borings were performed by U.S. Drilling under the supervision of GeoSyntec Consultants (GeoSyntec). In addition, three rotosonic borings were performed by Boart Longyear under the supervision of KFA. Figure 1 shows the location of soil borings. Split-spoon, Shelby tube and sonic core samples were obtained during the soil borings. Standard Penetration Tests (SPT) were also performed. Geotechnical laboratory testing of soil samples was performed by Excel Geotechnical Testing.

4. METHOD OF ANALYSIS

4.1 Soil Borings

Mud rotary and rotosonic drilling techniques were both used in the investigations. With mud rotary drilling, the boring was advanced with a tricone drill bit and bentonite drilling mud. With rotosonic drilling, ultra sonic waves were used to advance the boring and core sampler. The boring was supported with casing and water; therefore, no drilling mud was introduced into the borehole. Rotosonic drilling allows continuous core samples to be obtained without the use of drilling mud. Samples collected by this method can be considered as undisturbed samples for the purpose of grain size distribution, visual analysis, and mineralogy. The rotosonic borings are discussed in more detail in the

"Hydrogeologic Investigation Report and Water Quality Monitoring Plan" by KFA, which is presented as an appendix to the permit application.

The depth of mud rotary borings varied between 30 ft and 90 ft below ground surface. Rotosonic borings were advanced approximately 10 ft to 15 ft into the upper portion of the Hawthorn Group. The total depth of rotosonic borings varied between 145 ft and 175 ft below ground surface.

Three deep borings, which were drilled and documented by the Florida Geological Survey (FGS) in the vicinity of the OHD site, were also reviewed as a part of this site characterization program. The location of these deep borings relative to OHD site is shown in Figure 2. These borings were advanced to depths more than 300 ft below ground surface and into the Ocala Group. Data from these borings were used to evaluate the properties of Hawthorn Group soils at the site.

4.2 Standard Penetration Test (SPT)

The standard Penetration Test (SPT) is one of the most widely used in-situ tests. The test is performed by dropping a free falling hammer, weighing 140 lbs, on to the drill string from a height of 30 inches. The number of blows (N) necessary to achieve a penetration of 12 inches (below a seating drive of 6 inches) of standard sample tube, is termed the penetration resistance, or SPT N-value. Details of the SPT procedure and standard sampler are given in ASTM D 1586. Blows were delivered by a safety hammer hoisted by a rope and cathead.

4.3 Soil Sampling

Split-spoon sampling was performed as part of SPT tests in accordance with ASTM D 1586. A soil sample obtained using split-spoon sampler experiences large deformations. Therefore, a disturbed sample is obtained which is only suitable for visual identification, index tests, and reconstituted samples. Split-spoon samples were visually examined, classified, and stored in sealed bags.

Shelby tube samples were collected by pushing Shelby tubes during rotosonic and mud rotary drillings. Shelby tube sampling was used to obtain relatively undisturbed samples of cohesive fine-grained soils. Shelby tube samples were capped and stored for extrusion and laboratory testing.

Vibro-sonic core samples were obtained during the rotosonic borings. As the rotosonic boring is advanced into the ground, soil from the boring zone is stored in the core barrel. Some damage to the soil structure occurs due to the vibratory nature of the operation. Therefore, the core samples obtained are considered to be disturbed. However, the samples were considered to be representative for the purposes of soil classification because

drilling mud is not used with this boring technique. Core barrel samples were stored in wooden boxes upon extrusion.

4.4 Laboratory Testing

Basic soil properties are used to make preliminary assessments regarding the behavior and response of soils. Basic soil properties are also used to develop empirical relationships. As part of the geotechnical site characterization program, laboratory testing was performed. The laboratory testing program included grain size distribution, specific gravity determination, and minimum and maximum index density determination.

Grain size distribution was performed according to ASTM D 421. No analysis was performed on materials passing the No. 200 sieve. Specific gravity testing was performed according to ASTM D 854 on a composite sample made by mixing soils from selected split-spoon samples obtained at depths between 5 ft and 50 ft from representative borings across the site. Minimum and maximum index density tests were performed using the same composite sample according to ASTM D 4254 and ASTM D 4253, respectively.

5. TEST RESULTS AND ANALYSES

The results of in-situ and laboratory tests are presented and discussed herein. The presentation of test results include soil stratigraphy, basic geotechnical properties (grain size distribution, specific gravity, minimum and maximum index density), SPT results and interpretation, and elastic soil modulus. Also, the drained friction angle of cohesionless soils and the modified compression index of the cohesive soils were evaluated.

5.1 Subsurface Soil Stratigraphy

Detailed boring logs for the 15 mud rotary borings and 3 the rotosonic borings are presented in Attachments 1 and 2, respectively. Based on an evaluation of these boring logs and the deep borings performed by FGS, the general subsurface stratigraphy of the OHD facility can be described as follow:

(A) Pleistocene to Recent Deposits of the Post-Hawthorn Undifferentiated Formation:

In this area, Scott (1988) stated that soils above the Hawthorn Group belong to the Post-Hawthorn Undifferentiated formation. According to Scott (1988), the Hawthorn Group belongs to the Miocene Epoch of the Tertiary Period. Therefore the Post-Hawthorn Undifferentiated Layer belongs to the Pliocene Epoch of the Tertiary Period and the Pleistocene and Holocene Epochs of the Quaternary Period.

- Upper Sand / Silty Sand Layer: This layer is the upper portion of this formation and consists of sub-layers, from top to bottom, silty fine to medium sand, coarse

sand, silty fine to medium sand, and silty sand/sandy silt. The thickness of the upper sand / silty sand layer varied between 55 ft and 65 ft.

- Clayey Sand / Sandy Clay / Sandy Shelly Clay Layer: This layer consists of sub-layers of clayey sand, sandy clay, and sandy shelly clay, from top to bottom. All three sub-layers were not present in every boring and the percentage of sand content in clay varied significantly. The plastic nature of this layer was considered a clear indication for the termination of the upper sand / silty sand layer. The thickness of this layer varied between 10 ft and 20 ft.

- Shell Hash Layer: This layer was clearly encountered during the three rotosonic borings. This layer consists of shell fragments with minor sand, silt, and clay size particles. The thickness of shell hash layer was between 5 ft and 20 ft. The transition from sandy shelly clay to shell hash layer was not pronounced in the mud rotary borings making it difficult to identify the top of this sub-layer. The difficulty in identifying the transition may be due to the level of disturbance in the split-spoon sampling.

- Lower Interbedded Silty Sand / Clayey Sand / Shelly Silty Sand Layer: This layer is the lower portion of the undifferentiated formation. This layer predominantly consists of silty sand and clayey sand. The difference between this layer and the upper sand / silty sand layer is the presence of shells, limestone and phosphate nodules (fragments).

The thickness of the Post-Hawthorn undifferentiated formation varied between 125 ft and 170 ft. The lower boundary of this layer was recognized by the presence of a dark olive green clayey sub-layer, which is usually present at the top of the Hawthorn Group.

(B) Hawthorn Group:

Scott (1988) studied the Hawthorn Group in Florida. Results presented by Scott (1988) indicate that the OHD site is located in the vicinity of a geological feature called the Osceola Low. The geology of Osceola County is part of the Florida Geological Section G-G' as shown by Scott (1988). Review of Geological Section G-G' shows that the Hawthorn Group in the OHD site area consists of the Peace River formation underlain by the Arcadia formation. The geology and soil stratigraphy of the Peace River formation and the Arcadia formation in this area can be described using lithologic logs for Well No. 13942, Well No. 11685, and Well No. 11954, performed and documented by the FGS. The location of these wells relative to the OHD facility is shown in Figure 2. The average thickness of the Post-Hawthorn Undifferentiated Formation is 155 ft. The average thickness of the Hawthorn Group is 145 ft. Based on a review of the lithologic logs, the following can be concluded about the Hawthorn Group:

- Peace River formation: In this area, this formation predominantly consists of very fine to medium sand in clay matrix with phosphate, and fossil fragments. There is

indication of cementation by dolomite. Sand is composed of quartz sand and phosphatic sand. This formation composes more than 50 percent of the Hawthorn Formation in this area. Clays, sandy clays, and phosphatic clays are present as distinct sublayers but their thickness are less than 8 ft (10 percent by volume).

- Arcadia formation: In this area, this formation predominantly consists of dolomite (cemented) with quartz sand, phosphatic sand, phosphatic gravel, and fossils. The thickness of this formation is less than 50 percent of the thickness of the Hawthorn Group. Clays are present as distinct sublayers but their thickness is less than 3.5 ft (5 percent by volume).

(C) Ocala Group:

Bedrock at the site belongs to the Ocala Group and is approximately 300 ft deep. This mostly consists of limestone rock and is considered incompressible.

5.2 Standard Penetration Test (SPT)

The SPT was performed as part of the mud rotary borings. SPT N-values are reported on the boring logs presented in Attachment 1. A summary of SPT N-values reported in the boring logs is shown in Figure 3. SPT N-values are used to evaluate soil properties. Evaluations range from simple assessments such as soil relative density, to much more complicated assessments such as settlement potential of cohesionless soils. SPT N-Values, as measured on site must be corrected for the actual energy that is delivered to rods and effective overburden pressure. Robertson and Ghionna (1987) stated that measured energies delivered to the rod from the hammer and anvil system vary between 30 percent to 90 percent of the theoretical value. Robertson and Ghionna (1987) added that the average standard energy delivered to the rods from the hammer and anvil is accepted to be 60 percent of the theoretical value. SPT N-value corrected for energy is called N_{60}. The actual energy delivered to the rods not only differs from the theoretical value but also depends on the kind of hammer used, split-spoon sampler used, length of rod, and borehole diameter. Robertson and Ghionna (1987) stated that the following relationship can be used for estimating N_{60}:

$$N_{60} = N_{SPT} \times \frac{ER}{60} \times C_s \times C_r \times C_d \qquad \text{(Equation 1)}$$

in which:

N_{SPT} = SPT N-value
ER/60 = ratio of average energy delivered by hammer used to standard assumed average energy of 60 percent (0.92 for safety hammer as used in this investigation)
C_s = 1.2 (for split-spoon sampler without membrane)

C_r = rod length (RL) correction as follows:
$C_r = 1.00$ for RL >32.75 ft
$C_r = 0.95$ for 19.75 ft < RL < 32.75 ft
$C_r = 0.85$ for 13.25 ft < RL <19.75 ft
$C_r = 0.75$ for 10 ft < RL < 13.25 ft)
C_d = borehole diameter (d) correction ($C_d = 1$ for d <4.5 inches)

In addition, Robertson and Ghionna (1987) stated that the SPT N-Value is influenced by the effective vertical stress. SPT N-Value, normalized with respect to effective vertical stress, is called N_1 and is equal to:

$$N_1 = C_N \times N_{SPT} \qquad \text{(Equation 2)}$$

in which:
N_{SPT} = SPT N-Value
C_N = correction factor for the effect of vertical stress

According to Robertson and Ghionna (1987), based on calibration chamber studies, C_N can be estimated using the equation below:

$$C_N = \left(\sigma_v'\right)^{-0.5} \qquad \text{(Equation 3)}$$

in which, σ_v' is the effective vertical stress in bars (1 bar = 2088.6 psf).

SPT N-Value corrected for both energy and effective vertical stress is called $(N_1)_{60}$ and can be estimated using the equation below by combing Equations 1 and 2:

$$(N_1)_{60} = C_N \times N_{SPT} \times \frac{ER}{60} \times C_s \times C_r \times C_d \qquad \text{(Equation 4)}$$

Values of the corrected blow counts, $(N_1)_{60}$, are presented in Figure 4 and will be used in this evaluation.

Skempton (1986) showed that $(N_1)_{60}$ could be correlated with relative density, DR(%) in cohesionless soils. Figure 5 shows the relationship between $(N_1)_{60}$ and relative density, DR(%). The relative density of the subsurface soils was estimated using this correlation and tests performed at the OHD site. Figure 6 shows the variation of relative density, DR (%), with depth. Results indicate that the upper sand/silty sand layer is predominantly medium density sand. Limited results available for the lower silty shelly sand layer indicate a similar trend in this sub-layer.

SPT N-values can also be used to estimate the drained friction angle of sandy soils. Robertson and Ghionna (1987) presented the relationship between drained peak friction

angle, SPT N-value, and effective vertical stress, (after De Mello, 1971). This relationship is shown in Figure 7 in the form of contours of drained peak friction angle on a SPT N-value versus effective vertical stress chart. The SPT N-value versus effective vertical stress for the upper sand/silty sand layer at the site is shown in Figure 7. Due to the significant scatter of results shown, a conservative peak friction angle between 25° and 35° is recommended.

5.3 Basic Geotechnical Properties

Grain size analysis, specific gravity, and minimum and maximum index density tests were performed using a reconstituted composite sample prepared by mixing soils of the upper sand / silty sand layer obtained with the split-spoon sampler. In addition, grain size analyses were performed on 6 depth-specific reconstituted samples taken from the borrow areas. These samples were prepared by mixing soils from split-spoon samples obtained at 5 ft, 10 ft, 15 ft, 20 ft, 25 ft, and 30 ft deep below ground surface. The laboratory data sheets are presented in Attachment 3 and will be discussed here.

The upper sand/silty sand layer had an average fines content of 6.7 percent. The fines content varied between 3.5 percent and 10.4 percent with an overall trend of decreasing fines content with depth for samples obtained at depths between 10 ft and 30 ft. Specific gravity was 2.678, which is typical for quartz sand with fines containing mica minerals. Minimum and maximum index densities (dry) were 76.16 pcf (1.22 gr/cm^3) and 99.25 pcf (1.59 gr/cm^3), respectively. Minimum and maximum void ratio (e_{min} and e_{max}) for the upper sand/silty sand layer was estimated using the measured maximum and minimum index densities and the relationship below:

$$\gamma = \frac{(1+w)G_s\gamma_w}{1+e} \qquad \text{(Equation 5)}$$

in which:
γ = soil density;
w = water content;
G_s = specific gravity;
γ_w = density of water; and
e = void ratio.

The estimated values of e_{min} and e_{max} are 0.689 and 1.200, respectively. Values of e_{min}, e_{max} (from laboratory testing), and relative density from SPT, was used to estimate the in-situ void ratio from Equation 6. Then, the in-situ density was estimated using Equation 7, assuming that the soils were saturated.

$$DR = \frac{e_{max} - e}{e_{max} - e_{min}} \qquad \text{(Equation 6)}$$

$$\gamma_{sat} = \frac{(G_s + e)\gamma_w}{1 + e} \qquad \text{(Equation 7)}$$

The estimated in-situ saturated density varied between 113 pcf and 118 pcf, which is typical for silty sands.

5.4 Elastic Soil Modulus

Upon construction of the landfill, subsurface soils will experience some deformation due to the loads induced by the landfill. The subsurface soils at the site are predominantly cohesionless. Therefore, the resulting deformation (settlement) is elastic rather than time dependent. The elastic soil modulus is necessary for estimating elastic deformation of cohesionless soil layers such as the compacted subgrade, Post-Hawthorn Undifferentiated Formation, and cohesionless portion of Hawthorn Group.

The elastic soil modulus (E) is a function of shear modulus (G) and Poisson's ratio (ν), as expressed in the equation below:

$$E = G[2(1 + \nu)] \qquad \text{(Equation 8)}$$

Bowles (1988) stated that the Poisson's ratio of sands varies between 0.3 and 0.4. A conservative value of 0.3 is used in this calculation package. Shear modulus is a function of the magnitude of deformation and varies with shear strain. Its maximum value (G_{max}) occurs at small strain levels. The average shear modulus is approximately 1/3 of the small strain shear modulus (G_{max}), which can be estimated using empirical relationships.

The maximum shear modulus (G_{max}) of compacted subgrade is estimated using the equation proposed by Seed and Idriss (1970):

$$G_{max} = 1000 K_{2\,max} (\sigma'_m)^{0.5} \qquad \text{(Equation 9)}$$

in which:

σ'_m = mean principal effective stress ($\sigma'_m = (\sigma'_1 + \sigma'_2 + \sigma'_3)/3$) (assume $K_o = 0.5$); and

$K_{2\,max}$ = empirical coefficient as a function of relative density of soil, It varies between 34 and 70 for values of relative density between 30 percent and 90 percent, respectively. A relative density of 90 percent was assumed for the compacted subgrade, which corresponds to $K_{2\,max}$ of 70.

The maximum shear modulus (G_{max}) for the subsurface layers for which SPT data is available, is estimated using the following relationship, proposed by Ohta and Goto (1978):

$$V_s = 54.33\left((N_1)_{60}\right)^{0.173} f_A f_G \left(\frac{Z}{0.303}\right)^{0.193} \quad \text{(Equation 10)}$$

$$G_{max} = (V_s)^2 \frac{\gamma}{g} \quad \text{(Equation 11)}$$

in which:

G_{max} = small strain shear modulus (kN/m^2)
V_s = shear wave velocity (m/s);
f_A = coefficient depending on age of deposit (conservatively assume 1, which corresponds to Holocene deposites);
f_G = coefficient depending on grain size (1.07 for medium sand);
Z = depth (m);
γ = soil density (kN/m^3); and
g = acceleration due to gravity (9.81 m/s^2).

An estimated elastic modulus is calculated for each SPT measurement using Equation 8, 10, and 11. Calculated values are presented in Figure 8. The average value at each depth is also shown. The linear variation of elastic modulus with depth, shown in Figure 8, is recommended for the top 90 ft of the subsurface soils.

The estimated value of the elastic modulus using Equation 8 and G_{max} obtained from Equation 9 is also presented in Figure 8. Coefficient K_{2max} in Equation 9 varies between 34 and 70 for values of relative density between 30 percent and 90 percent. The most conservative value of 34 for K_{2max} is used for the curve presented in Figure 8. Comparison of the results presented in Figure 8 for the top 90 ft of subsurface soils indicate consistency between the different conservative empirical approaches used. Estimates presented here are the lower boundary values using conservative assumptions stated in this calculation package. Therefore, it should result in a conservative assessment of settlement.

An examination of empirical Equations 9, 10, and 11 indicate that small strain shear modulus increases with depth. The increase of G_{max} with depth is conservatively ignored and a constant value of 1500 ksf, which is the estimated value at 90 ft below the ground surface is used throughout the lower silty shelly sand sub-layer of the Post-Hawthorn Undifferentiated formation. This assumption resulted in a conservative assessment of settlement of the foundation soils for the proposed landfill.

There is approximately 145 ft of soils in the Hawthorn Group between the Post-Hawthorn Undifferentiated formation and the Ocala Group bedrock that is considered incompressible. For coarse-grained soils in the Hawthorn Group, it is recommended that an elastic modulus estimated using G_{max} be obtained from Equation 9. Coefficient K_{2max} in Equation 9 varies between 34 and 70 for values of relative density between 30 percent and

90 percent. The most conservative value of 34 for $K_{2\ max}$ is used. The estimated elastic modulus for Hawthorn Group is presented in Figure 8.

5.5 Modified compression index

Portions of the Peace River formation and the Arcadia formation of the Hawthorn Group are fine-grained cohesive soils. As stated before in this calculation package, it is estimated that the thickness of the fine-grained cohesive sub-layer in the Peace River formation and the Arcadia formation is 8 ft (10 percent by volume) and 3.5 ft (5 percent by volume), respectively. Fine-grained cohesive soils undergo time dependent consolidation. In order to evaluate the settlement in the fine-grained cohesive sub-layers, it is necessary to estimate the modified compression index. Holts and Kovacs (1981) recommended the relationship presented below between the modified compression index ($C_{c\varepsilon}$) and in-situ void ratio (e_o):

$$C_{c\varepsilon} = 0.156e_o + 0.0107 \qquad \text{(Equation 12)}$$

Modified compression index ($C_{c\varepsilon}$) is approximately 0.1 assuming a value of 0.6 for e_o, recommended by Das (1994) for stiff clays.

6. SUMMARY AND CONCLUSION

The site characterization program for the OHD facility consisted of soil stratigraphy and in-situ and laboratory testing. Geotechnical properties of the soils were estimated using results of in-situ and laboratory tests in conjunction with empirical relationships.

The subsurface geology primarily consists of the Post-Hawthorn Undifferentiated formation, the Hawthorn Group, and the Ocala Group. The undifferentiated formation consists of four sub-layers of upper sand/silty sand, clayey sand/sandy clay/sandy shelly clay, shell hash, and interbedded silty sand/clayey sand/shelly silty sand. The Hawthorn Group consists of the Peace River formation and the Arcadia formation. In the area of the facility, both formations of the Hawthorn Group appear to be predominantly composed of cohesionless quartz sand and phosphatic sand with dolomite cementation in clay matrix. Clay sublayers are present in small quantities.

SPT N-Values were presented and corrected for energy and effective vertical stress. Results indicate that the undifferentiated formation composed of medium density sand with drained peak friction angle varying between 25° and 35°.

The elastic modulus was estimated for subsurface soil layers using empirical relationships for small strain shear modulus (G_{max}). A consistent trend in the variation of G_{max} with depth was observed. The estimated elastic modulus as shown in Figure 8 will be used to estimate the settlement of the coarse-grained soils, which comprise most of the foundation soils for the proposed landfill. A value of 0.1 for the modified compression

index ($C_{c\varepsilon}$) of stiff clays was presented. This value will be used to estimate the consolidation settlement of clay sublayers in the Hawthorn Group.

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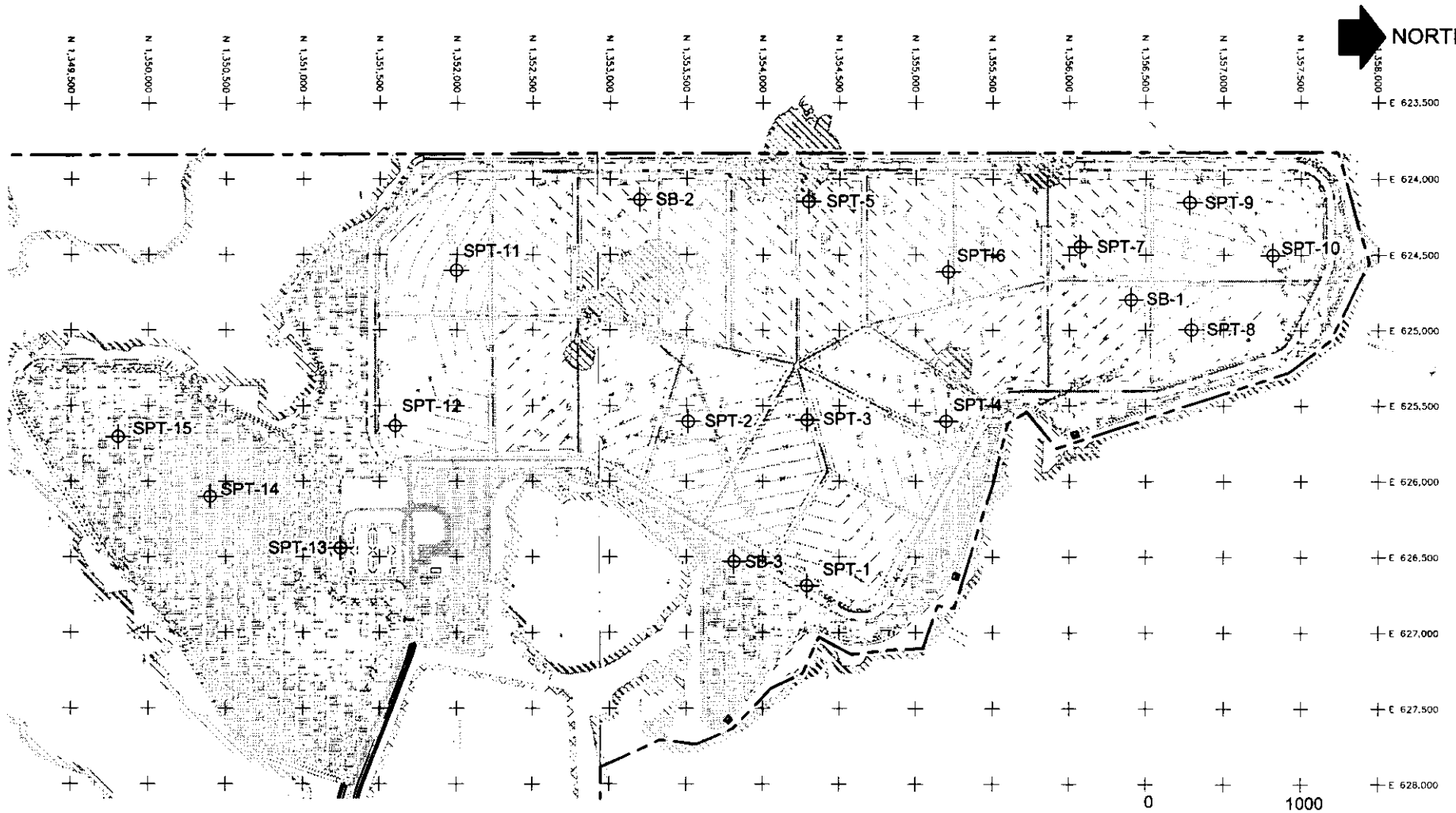


LEGEND

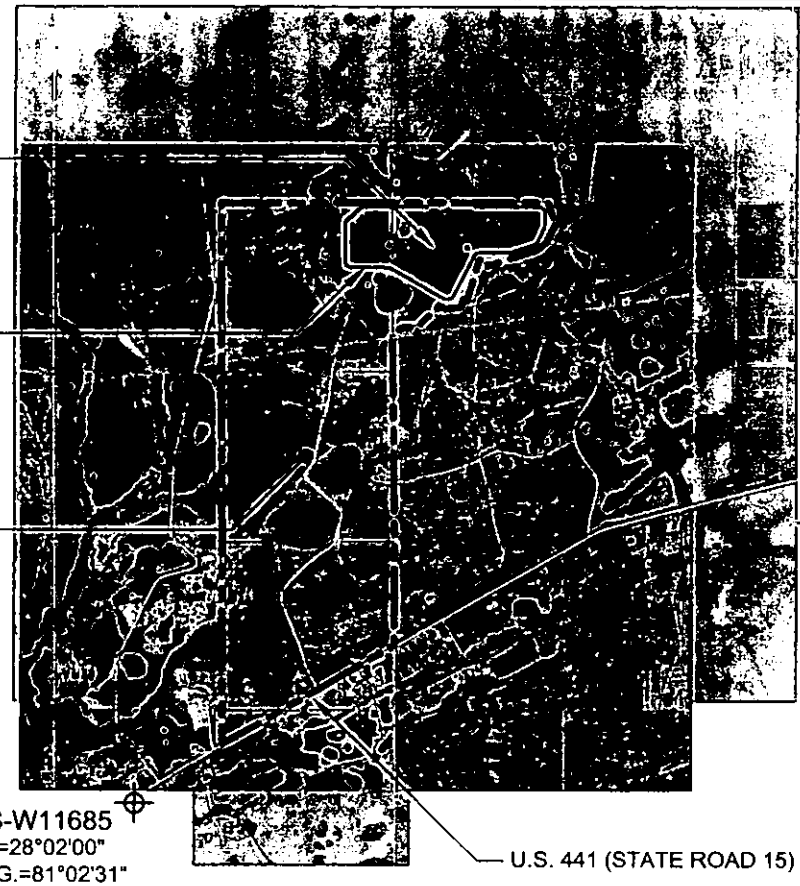
⊕ SB-1	ROTOSONIC BORING LOCATION
⊕ SPT-1	STANDARD PENETRATION TEST (SPT) BORING LOCATION

Project	OAK HAMMOCK DISPOSAL FACILITY PERMIT APPLICATION
Figure Title	**LOCATION OF MUD ROTARY AND ROTOSONIC BORINGS**

Project Number	Date	File No.	Figure No.
FW0400	MARCH 02	0400FA020	1

Consultant / Engineer

GeoSyntec Consultants
14055 RIVERDALE DRIVE, SUITE 300 - TAMPA, FLORIDA 33637 USA
TEL: (813) 558-0990 - FAX (813) 558-9726



0 6000

SCALE IN FEET

FGS-W13942
LAT.=27°56'37"
LONG.=80°59'34"

Project: OAK HAMMOCK DISPOSAL FACILITY PERMIT APPLICATION			
Figure Title: **FGS BORING EXISTING WELL LOCATIONS**			
Project Number: FW0400	Date: MARCH 02	File No.: 0400FA023	Figure No.: **2**
Consultant / Engineer: GeoSyntec Consultants 14055 RIVEREDGE DRIVE, SUITE 300 - TAMPA, FLORIDA 33637 USA TEL: (813) 558-0990 - FAX: (813) 558-9726			

16/69

Method Blank Summary

Job Number: F11674
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP633-MB	GG03017.D	1	12/11/01	JH	12/07/01	OP633	GGG109

The QC reported here applies to the following samples: **Method:** SW846 8151

OP633-MS, OP633-MSD

CAS No.	Compound	Result	RL	Units	Q
94-75-7	2,4-D	ND	1.0	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	0.20	ug/l	
93-76-5	2,4,5-T	ND	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	80%	10-150%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F11674
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP632-MS	GG02968.D	1	12/09/01	JH	12/07/01	OP632	GGG108
OP632-MSD	GG02969.D	1	12/09/01	JH	12/07/01	OP632	GGG108
F11672-1	GG02966.D	1	12/09/01	JH	12/07/01	OP632	GGG108

The QC reported here applies to the following samples: **Method:** SW846 8151

F11674-2

CAS No.	Compound	F11672-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
94-75-7	2,4-D	ND		4	3.4	85	3.4	85	0	50-150/30 [a]
93-72-1	2,4,5-TP (Silvex)	ND		0.8	0.55	69	0.57	71	4	50-150/30 [a]
93-76-5	2,4,5-T	ND		0.8	0.48	60	0.56	70	15	50-150/30 [a]

CAS No.	Surrogate Recoveries	MS	MSD	F11672-1	Limits
19719-28-9	2,4-DCAA	83%	87%	69%	10-150%

(a) Advisory control limits.

Blank Spike Summary

Job Number: F11674
Account: ALSE Accutest Labs S. E.
Project: KFSSCSIM: Omni-Oak Hammock

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP632-BS	GG02960.D	1	12/09/01	JH	12/07/01	OP632	GGG108

The QC reported here applies to the following samples: **Method:** SW846 8151

F11674-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
94-75-7	2,4-D	2	2.0	100	50-150 [a]
93-72-1	2,4,5-TP (Silvex)	0.4	0.35	88	50-150 [a]
93-76-5	2,4,5-T	0.4	0.32	80	50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	88%	10-150%

(a) Advisory control limits.

Figure 3 - Variation of SPT N-Value with Depth

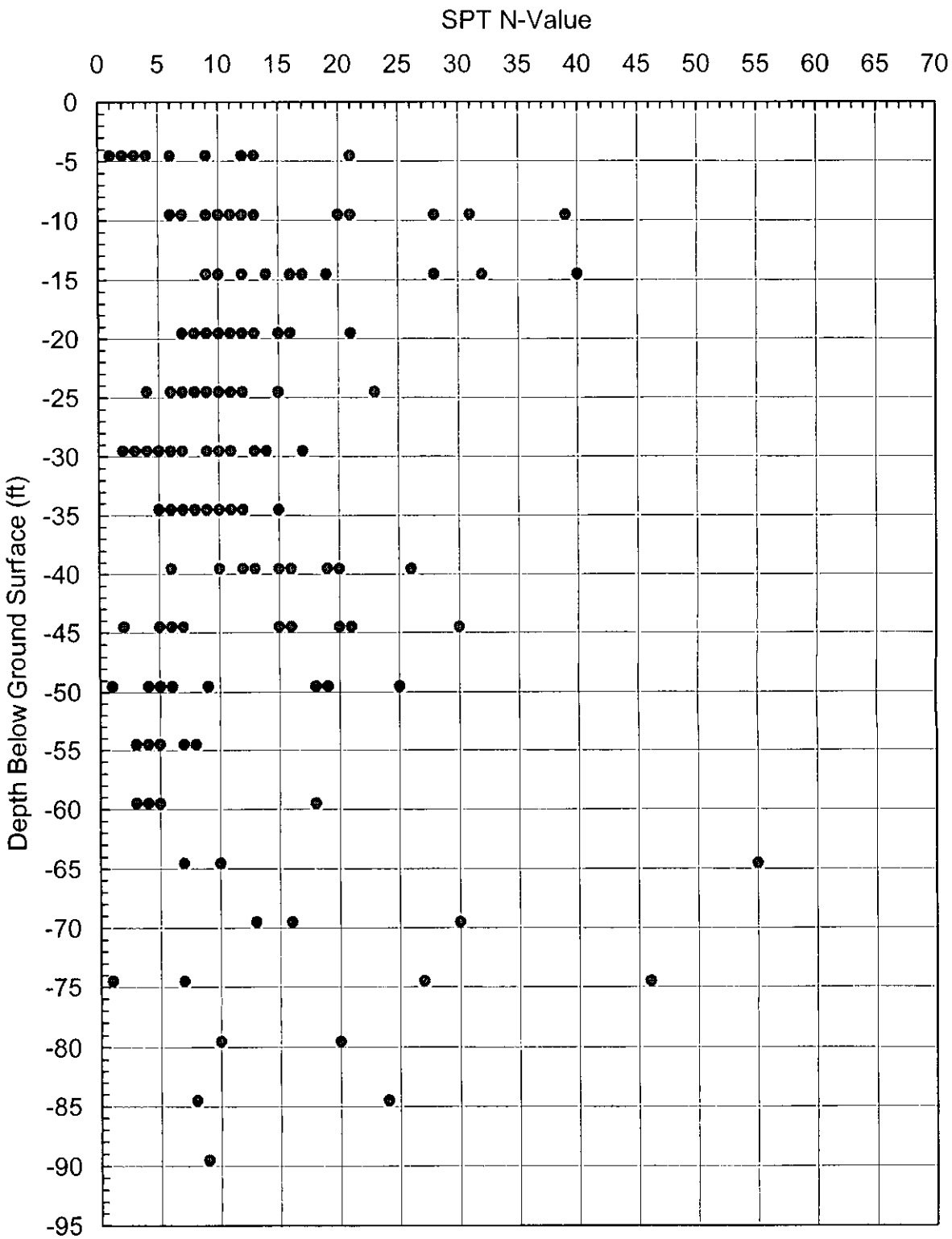


Figure 4 - Variation of Corrected SPT $(N_1)_{60}$ with Depth

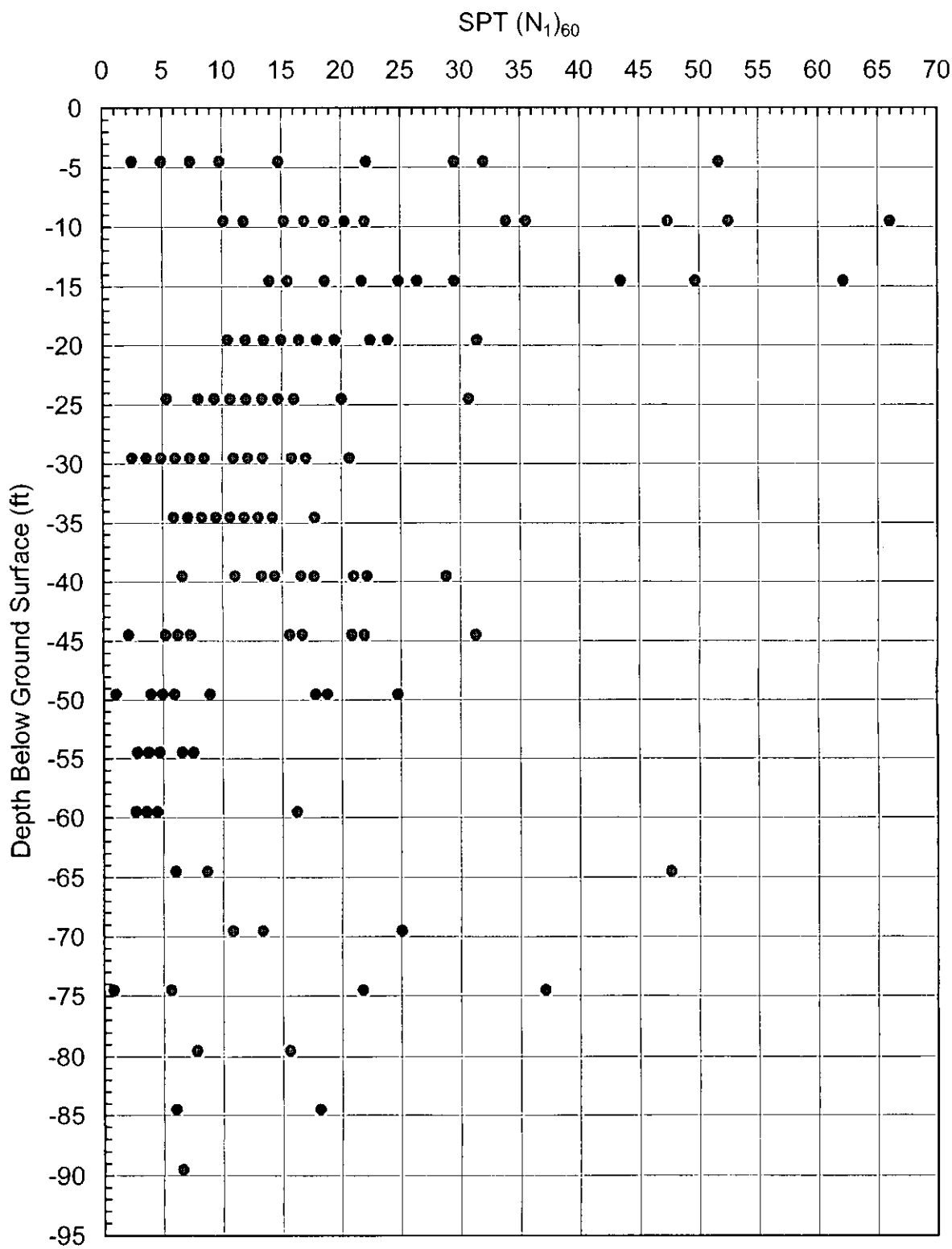
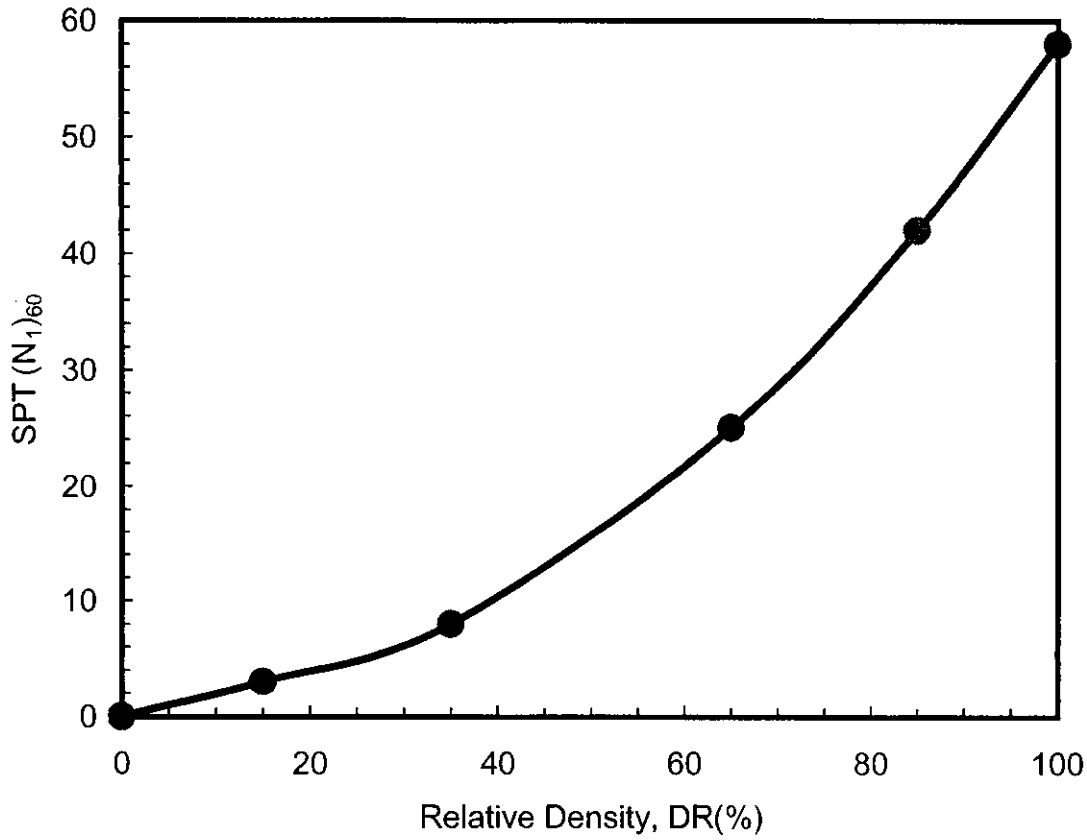


Figure 5 - Correlation of SPT and Relative Density
(after Skempton, 1986)



State of Sand:

0 < DR(%) < 15	Very Loose
15 < DR(%) < 35	Loose
35 < DR(%) < 65	Medium
65 < DR(%) < 85	Dense
85 < DR(%) < 100	Very Dense

Figure 6 - Relative Density of Subsurface Soils

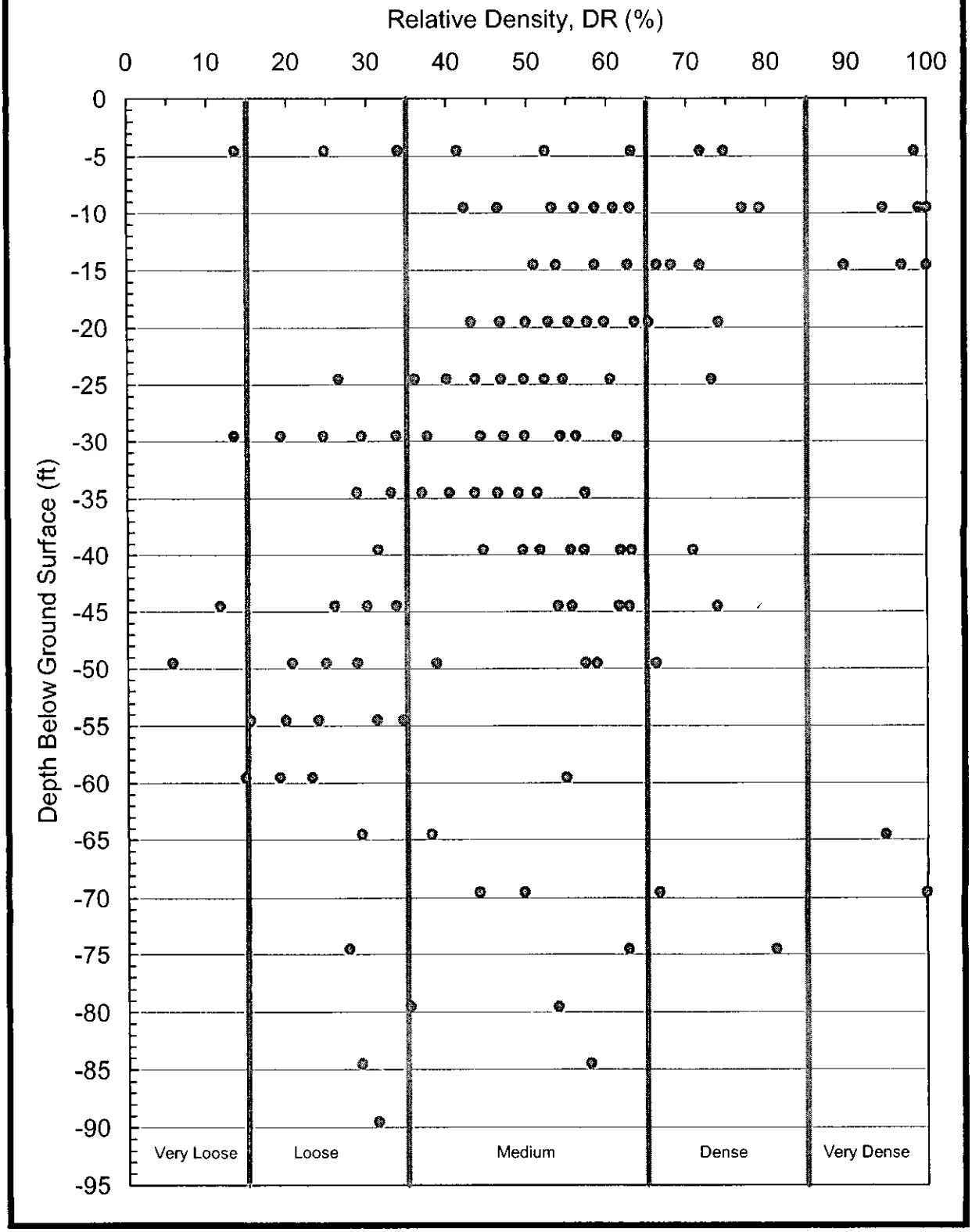


Figure 7 - Relationship between Peak Drained Friction Angle and SPT N-Value for Normally Consolidated, Unaged, Uncemented Silica Sands (after De Mello, 1971)

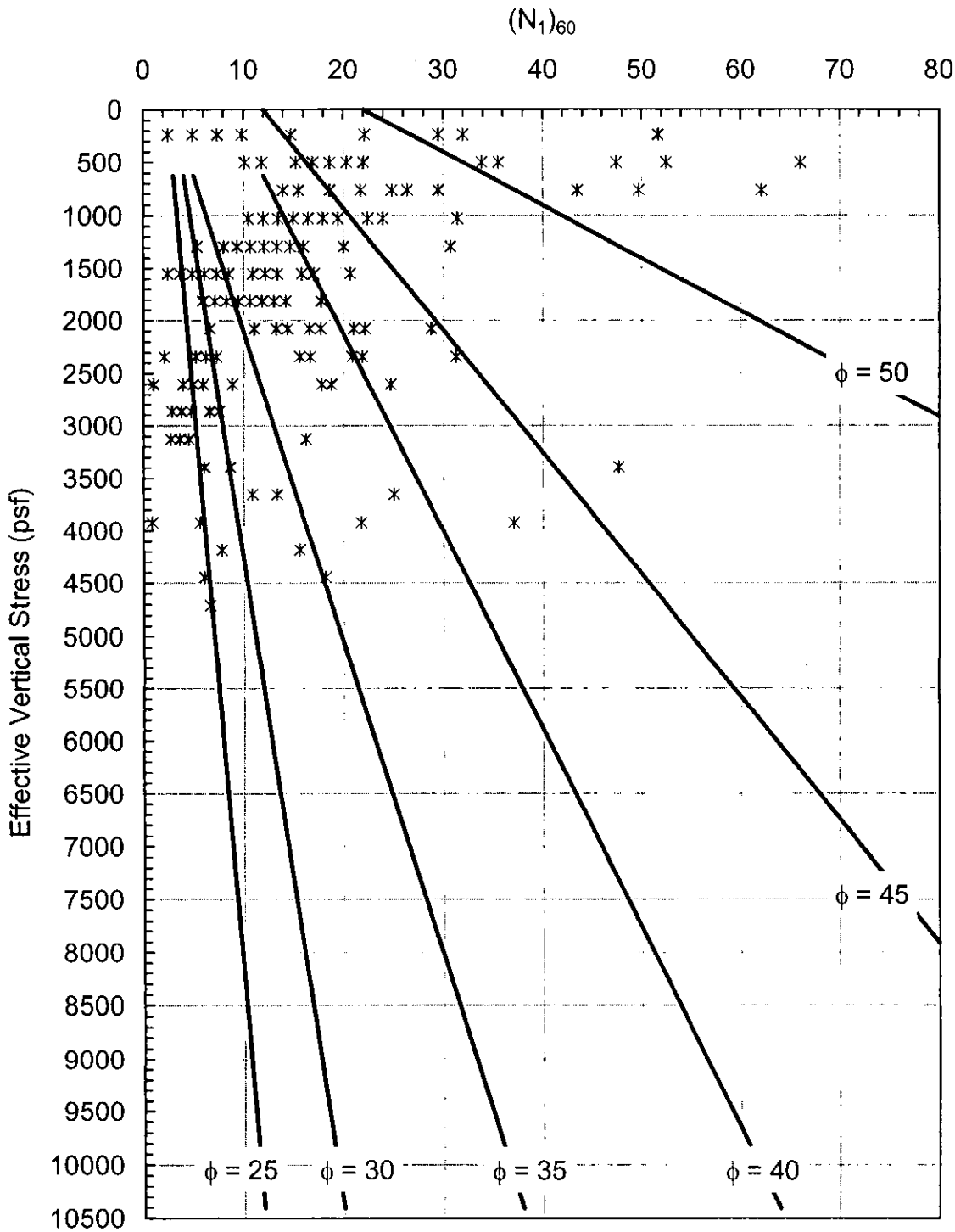
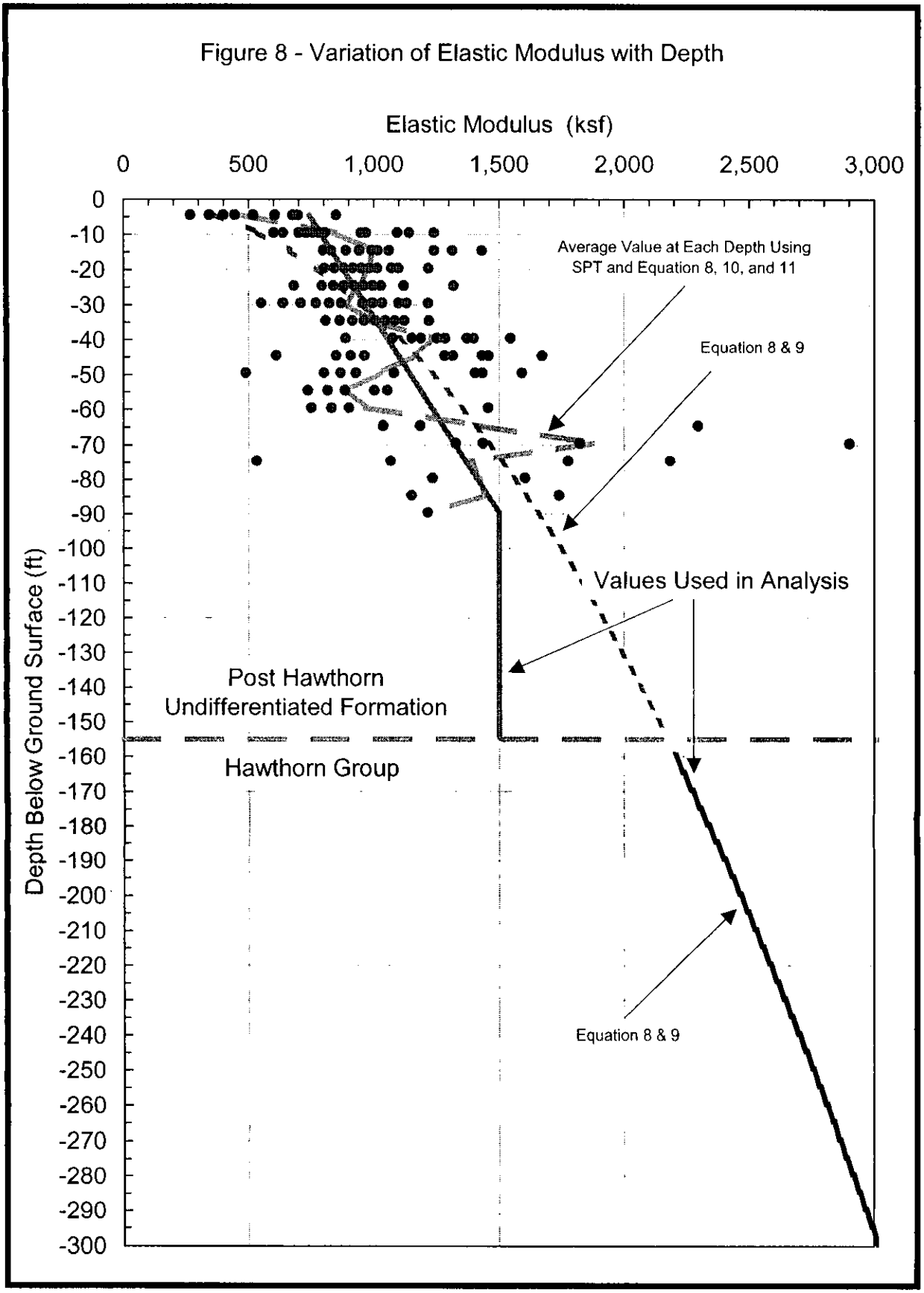


Figure 8 - Variation of Elastic Modulus with Depth



Attachment 1

Mud Rotary Boring Logs

(SPT-1 through SPT-15)

Geosyntec Consultants **Boring Log** **Page 1 of 2**

Project No.:	**FW0400**	**Location:**	**SPT-1**
Project Name:	**Oak Hammok Disposal Facility**	**Date:**	**5-Dec-2001**

Coordinates:
1354289 North
626692 East

Drilling Co.(Rig):	U.S. Drilling (CME-45)	Driller:	K. Claprood
Method:	Bentonite Circulation	Logger:	S. Iravani
tooling:	2.5 in. Diam. tri-cone	Reviewer:	S. Dapp

Ground Elevation:

(m)	(ft.)
24.2	79.3

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0										23.3	76.3
1.2	4.0	2		A	brown silty medium sand						23.0	75.3
1.5	5.0										22.6	74.3
1.8	6.0										22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0				white silty coarse sand						21.7	71.3
2.7	9.0	9		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0				white silty medium to coarse sand						20.2	66.3
4.3	14.0	14		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0										19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0										18.7	61.3
5.8	19.0	8		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	9		E	brown silty medium sand						16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0										15.9	52.3
8.5	28.0										15.6	51.3
8.8	29.0	4		F							15.3	50.3
9.1	30.0										15.0	49.3

Geosyntec Consultants **Boring Log** **Page 2 of 2**

Project No.:	**FW0400**	**Location:**	**SPT-1**
Project Name:	**Oak Hammok Disposal Facility**	**Date:**	**5-Dec-2001**

Coordinates:
1354289 North
626692 East

Drilling Co.(Rig):	U.S. Drilling (CME-45)	Driller:	K. Claprood	Ground Elevation:	
Method:	Bentonite Circulation	Logger:	S. Iravani	(m)	(ft.)
tooling:	2.5 in. Diam. tri-cone	Reviewer:	S. Dapp	24.2	79.3

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ ft)	Graphic Log	Sample	Soil Description	Lab Tests: -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0										14.1	46.3
10.4	34.0	7		G							13.8	45.3
10.7	35.0										13.5	44.3
11.0	36.0				white & brown silty medium to coarse sand						13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0	13		H							12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0										11.1	36.3
13.4	44.0	16		I							10.8	35.3
13.7	45.0										10.5	34.3
14.0	46.0				dark olive silty medium sand						10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0										9.5	31.3
14.9	49.0	18		J							9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0										8.6	28.3
15.8	52.0										8.3	27.3
16.2	53.0				dark olive						8.0	26.3
16.5	54.0	4		K	silty medium sand						7.7	25.3
16.8	55.0				to sandy silt						7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0				dark olive silty						6.5	21.3
18.0	59.0	5		L	medium sand						6.2	20.3
18.3	60.0										5.9	19.3

Geosyntec Consultants **Boring Log** **Page 1 of 3**

Project No.: FW0400 **Location: SPT-2** Coordinates:
Project Name: Oak Hammok Disposal Facility **Date: 5-Dec-2001** 1353510 North
625606 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffffett Ground Elevation:
Method: Bentonite Circulation Logger: S. Dapp (m) (ft.)
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp 24.2 79.4

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	-200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0										23.3	76.3
1.2	4.0	4		A	white silty medium sand						23.0	75.3
1.5	5.0										22.6	74.3
1.8	6.0										22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	6		B	dark brown silty medium sand						21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0										20.2	66.3
4.3	14.0	17		C	white silty medium sand						19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0										19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0				white						18.7	61.3
5.8	19.0	13		D	silty						18.4	60.3
6.1	20.0				medium to coarse						18.1	59.3
6.4	21.0				sand						17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0				white						17.2	56.3
7.3	24.0	11		E	silty						16.9	55.3
7.6	25.0				medium to coarse						16.6	54.3
7.9	26.0				sand						16.2	53.3
8.2	27.0				dark brown						15.9	52.3
8.5	28.0				silty						15.6	51.3
8.8	29.0	6		F	medium to coarse						15.3	50.3
9.1	30.0				sand						15.0	49.3

Geosyntec Consultants **Boring Log** **Page 2 of 3**

Project No.:	**FW0400**	**Location:**	**SPT-2**
Project Name:	**Oak Hammok Disposal Facility**	**Date:**	**5-Dec-2001**

Coordinates:
1353510 North
625606 East

Drilling Co.(Rig):	U.S. Drilling (CME-55)	Driller:	J.C. Maffffett
Method:	Bentonite Circulation	Logger:	S. Dapp
tooling:	2.5 in. Diam. tri-cone	Reviewer:	S. Dapp

Ground Elevation:

(m)	(ft.)
24.2	79.4

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests: -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0				dark brown						14.1	46.3
10.4	34.0	8		G	silty						13.8	45.3
10.7	35.0				medium to coarse						13.5	44.3
11.0	36.0				sand						13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0	12		H							12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0				white						11.1	36.3
13.4	44.0	2		I	silty						10.8	35.3
13.7	45.0				medium to coarse						10.5	34.3
14.0	46.0				sand						10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0										9.5	31.3
14.9	49.0	1		J							9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0										8.6	28.3
15.8	52.0										8.3	27.3
16.2	53.0										8.0	26.3
16.5	54.0			K	dark olive						7.7	25.3
16.8	55.0				silty						7.4	24.3
17.1	56.0				medium to coarse						7.1	23.3
17.4	57.0				sand						6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0			L	SHELBY SAMPLE						6.2	20.3
18.3	60.0										5.9	19.3

Geosyntec Consultants **Boring Log** **Page 3 of 3**

Project No.: **FW0400** **Location:** **SPT-2** Coordinates: 1353510 North

Project Name: **Oak Hammok Disposal Facility** **Date:** **5-Dec-2001** 625606 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffffett Ground Elevation: (m) 24.2 (ft.) 79.4

Method: Bentonite Circulation Logger: S. Dapp

tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corr-ected SPT "N" (blows/ ft)	Graphic Log	Sample	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
18.6	61.0										5.6	18.3
18.9	62.0										5.3	17.3
19.2	63.0										5.0	16.3
19.5	64.0	10		M							4.7	15.3
19.8	65.0										4.4	14.3
20.1	66.0										4.1	13.3
20.4	67.0										3.7	12.3
20.7	68.0										3.4	11.3
21.0	69.0	30		N	light grey silty shelly sand						3.1	10.3
21.3	70.0										2.8	9.3
21.6	71.0										2.5	8.3
21.9	72.0										2.2	7.3
22.3	73.0										1.9	6.3
22.6	74.0	27		O							1.6	5.3
22.9	75.0										1.3	4.3
23.2	76.0										1.0	3.3
23.5	77.0										0.7	2.3
23.8	78.0										0.4	1.3
24.1	79.0										0.1	0.3
24.4	80.0										-0.2	-0.7
24.7	81.0										-0.5	-1.7
25.0	82.0										-0.8	-2.7
25.3	83.0										-1.1	-3.7
25.6	84.0										-1.4	-4.7
25.9	85.0										-1.7	-5.7
26.2	86.0										-2.0	-6.7
26.5	87.0										-2.3	-7.7
26.8	88.0										-2.7	-8.7
27.1	89.0										-3.0	-9.7
27.4	90.0										-3.3	-10.7

Geosyntec Consultants **Boring Log** **Page 1 of 3**

Project No.:	**FW0400**	**Location:**	**SPT-3**
Project Name:	**Oak Hammok Disposal Facility**	**Date:**	**5-Dec-2001**

Coordinates:
1354291 North
625595 East

Drilling Co.(Rig):	U.S. Drilling (CME-55)	Driller:	J.C. Maffffett
Method:	Bentonite Circulation	Logger:	S. Dapp
tooling:	2.5 in. Diam. tri-cone	Reviewer:	S. Dapp

Ground Elevation:
(m) 24.4 (ft.) 80.1

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0				black						23.6	77.3
0.9	3.0				silty						23.3	76.3
1.2	4.0	2		A	medium to coarse						23.0	75.3
1.5	5.0				sand						22.6	74.3
1.8	6.0										22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	12		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0										20.2	66.3
4.3	14.0	12		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0				white						19.3	63.3
5.2	17.0				silty						19.0	62.3
5.5	18.0				medium to coarse						18.7	61.3
5.8	19.0	15		D	sand						18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	10		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0				dark olive						15.9	52.3
8.5	28.0				silty						15.6	51.3
8.8	29.0	3		F	medium to coarse						15.3	50.3
9.1	30.0				sand						15.0	49.3

Geosyntec Consultants **Boring Log**

Project No.: FW0400 **Location:** SPT-3 Coordinates: 1354291 North
Project Name: Oak Hammok Disposal Facility **Date:** 5-Dec-2001 625595 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffffett Ground Elevation: (m) 24.4 (ft.) 80.1
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests: -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0				dark olive						14.1	46.3
10.4	34.0				silty						13.8	45.3
10.7	35.0	11		G	medium to coarse						13.5	44.3
11.0	36.0				sand						13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0										12.3	40.3
12.2	40.0	19		H							12.0	39.3
12.5	41.0				white						11.7	38.3
12.8	42.0				silty						11.4	37.3
13.1	43.0				medium to coarse						11.1	36.3
13.4	44.0				sand						10.8	35.3
13.7	45.0	30		I							10.5	34.3
14.0	46.0										10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0										9.5	31.3
14.9	49.0										9.2	30.3
15.2	50.0	5		J							8.9	29.3
15.5	51.0				dark olive						8.6	28.3
15.8	52.0				silty						8.3	27.3
16.2	53.0				medium to coarse						8.0	26.3
16.5	54.0				sand						7.7	25.3
16.8	55.0			K							7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0										6.2	20.3
18.3	60.0			L	SHELBY TUBE						5.9	19.3

Geosyntec Consultants **Boring Log** **Page 3 of 3**

Project No.:	**FW0400**	**Location:**	**SPT-3**
Project Name:	**Oak Hammok Disposal Facility**	**Date:**	**5-Dec-2001**

Coordinates:
1354291 North
625595 East

Drilling Co.(Rig):	U.S. Drilling (CME-55)	Driller:	J.C. Maffffett	Ground Elevation:	
Method:	Bentonite Circulation	Logger:	S. Dapp	(m)	(ft.)
tooling:	2.5 in. Diam. tri-cone	Reviewer:	S. Dapp	24.4	80.1

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests: -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
18.6	61.0										5.6	18.3
18.9	62.0										5.3	17.3
19.2	63.0										5.0	16.3
19.5	64.0	10		M							4.7	15.3
19.8	65.0										4.4	14.3
20.1	66.0										4.1	13.3
20.4	67.0										3.7	12.3
20.7	68.0										3.4	11.3
21.0	69.0	16		N							3.1	10.3
21.3	70.0										2.8	9.3
21.6	71.0										2.5	8.3
21.9	72.0										2.2	7.3
22.3	73.0										1.9	6.3
22.6	74.0	46		O							1.6	5.3
22.9	75.0				light grey						1.3	4.3
23.2	76.0				silty shelly sand						1.0	3.3
23.5	77.0										0.7	2.3
23.8	78.0										0.4	1.3
24.1	79.0	20		P							0.1	0.3
24.4	80.0										-0.2	-0.7
24.7	81.0										-0.5	-1.7
25.0	82.0										-0.8	-2.7
25.3	83.0										-1.1	-3.7
25.6	84.0	24		Q							-1.4	-4.7
25.9	85.0										-1.7	-5.7
26.2	86.0										-2.0	-6.7
26.5	87.0										-2.3	-7.7
26.8	88.0										-2.7	-8.7
27.1	89.0	9		R							-3.0	-9.7
27.4	90.0										-3.3	-10.7

Geosyntec Consultants **Boring Log** **Page 1 of 2**

Project No.: FW0400 **Location: SPT-4** Coordinates:
Project Name: Oak Hammok Disposal Facility **Date: 5-Dec-2001** 1355198 North
625604 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood Ground Elevation:
Method: Bentonite Circulation Logger: S. Iravani (m) (ft.)
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp 24.4 80.2

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	-200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0										23.3	76.3
1.2	4.0	2		A							23.0	75.3
1.5	5.0										22.6	74.3
1.8	6.0				brown silty medium to coarse sand						22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	13		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0				white medium to coarse sand						20.2	66.3
4.3	14.0	19		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0										19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0				brown medium to coarse sand						18.7	61.3
5.8	19.0	15		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	10		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0				brown silty coarse sand						16.2	53.3
8.2	27.0										15.9	52.3
8.5	28.0										15.6	51.3
8.8	29.0	7		F							15.3	50.3
9.1	30.0										15.0	49.3

Geosyntec Consultants **Boring Log** **Page 2 of 2**

Project No.:	**FW0400**	**Location:**	**SPT-4**
Project Name:	**Oak Hammok Disposal Facility**	**Date:**	**5-Dec-2001**

Coordinates:
1355198 North
625604 East

Drilling Co.(Rig):	U.S. Drilling (CME-45)	Driller:	K. Claprood
Method:	Bentonite Circulation	Logger:	S. Iravani
tooling:	2.5 in. Diam. tri-cone	Reviewer:	S. Dapp

Ground Elevation:
(m) 24.4 (ft.) 80.2

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0										14.1	46.3
10.4	34.0	5		G							13.8	45.3
10.7	35.0				brown silty coarse sand						13.5	44.3
11.0	36.0										13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0	26		H							12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0				dark olive silty medium to coarse sand						11.1	36.3
13.4	44.0	21		I							10.8	35.3
13.7	45.0										10.5	34.3
14.0	46.0										10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0				dark olive silty medium sand						9.5	31.3
14.9	49.0	25		J							9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0										8.6	28.3
15.8	52.0										8.3	27.3
16.2	53.0										8.0	26.3
16.5	54.0										7.7	25.3
16.8	55.0										7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0										6.2	20.3
18.3	60.0										5.9	19.3

Geosyntec Consultants **Boring Log** **Page 1 of 2**

Project No.: FW0400 **Location:** SPT-5 Coordinates:
Project Name: Oak Hammok Disposal Facility **Date:** 5-Dec-2001 1354300 North
624151 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffett Ground Elevation:
Method: Bentonite Circulation Logger: S. Dapp (m) (ft.)
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp 25.1 82.3

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0				black						23.6	77.3
0.9	3.0				silty						23.3	76.3
1.2	4.0	4		A	medium to coarse						23.0	75.3
1.5	5.0				sand						22.6	74.3
1.8	6.0										22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	6		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0				white						20.2	66.3
4.3	14.0	16		C	silty						19.9	65.3
4.6	15.0				coarse						19.6	64.3
4.9	16.0				sand						19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0										18.7	61.3
5.8	19.0	16		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	10		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0				dark olive						16.2	53.3
8.2	27.0				silty						15.9	52.3
8.5	28.0				coarse						15.6	51.3
8.8	29.0	13		F	sand						15.3	50.3
9.1	30.0										15.0	49.3

Geosyntec Consultants **Boring Log** **Page 2 of 2**

Project No.:	**FW0400**	**Location:**	**SPT-5**
Project Name:	**Oak Hammok Disposal Facility**	**Date:**	**5-Dec-2001**

Coordinates:
1354300 North
624151 East

Drilling Co.(Rig):	U.S. Drilling (CME-55)	Driller:	J.C. Maffett
Method:	Bentonite Circulation	Logger:	S. Dapp
tooling:	2.5 in. Diam. tri-cone	Reviewer:	S. Dapp

Ground Elevation:
(m) 25.1 (ft.) 82.3

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests: -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0				dark olive						14.1	46.3
10.4	34.0	9		G	silty						13.8	45.3
10.7	35.0				coarse						13.5	44.3
11.0	36.0				sand						13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0	20		H							12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0				white						11.1	36.3
13.4	44.0	5		I	silty						10.8	35.3
13.7	45.0				coarse						10.5	34.3
14.0	46.0				sand						10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0										9.5	31.3
14.9	49.0	5		J							9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0										8.6	28.3
15.8	52.0				dark olive						8.3	27.3
16.2	53.0				sandy						8.0	26.3
16.5	54.0	3		K	clay						7.7	25.3
16.8	55.0										7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0										6.2	20.3
18.3	60.0										5.9	19.3

Geosyntec Consultants **Boring Log** **Page 1 of 2**

Project No.: FW0400 **Location: SPT-6** Coordinates: 1355211 North
Project Name: Oak Hammok Disposal Facility **Date: 5-Dec-2001** 624613 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood Ground Elevation: (m) 24.6 (ft.) 80.8
Method: Bentonite Circulation Logger: S. Iravani
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0				white						23.6	77.3
0.9	3.0				medium						23.3	76.3
1.2	4.0	3		A	sand						23.0	75.3
1.5	5.0										22.6	74.3
1.8	6.0										22.3	73.3
2.1	7.0				brown						22.0	72.3
2.4	8.0				silty						21.7	71.3
2.7	9.0	11		B	medium						21.4	70.3
3.0	10.0				sand						21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0										20.2	66.3
4.3	14.0	10		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0										19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0										18.7	61.3
5.8	19.0	9		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0				white						17.8	58.3
6.7	22.0				medium to coarse						17.5	57.3
7.0	23.0				sand						17.2	56.3
7.3	24.0	6		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0										15.9	52.3
8.5	28.0										15.6	51.3
8.8	29.0	9		F							15.3	50.3
9.1	30.0										15.0	49.3

Geosyntec Consultants **Boring Log** **Page 2 of 2**

Project No.: **FW0400** **Location:** **SPT-6** Coordinates: 1355211 North
Project Name: **Oak Hammok Disposal Facility** **Date:** **5-Dec-2001** 624613 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood Ground Elevation: (m) (ft.)
Method: Bentonite Circulation Logger: S. Iravani 24.6 80.8
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0				white						14.1	46.3
10.4	34.0	12		G	medium to coarse						13.8	45.3
10.7	35.0				sand						13.5	44.3
11.0	36.0										13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0	10		H							12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0										11.1	36.3
13.4	44.0	7		I							10.8	35.3
13.7	45.0										10.5	34.3
14.0	46.0				dark olive						10.1	33.3
14.3	47.0				silty						9.8	32.3
14.6	48.0				medium						9.5	31.3
14.9	49.0	6		J	sand						9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0										8.6	28.3
15.8	52.0										8.3	27.3
16.2	53.0										8.0	26.3
16.5	54.0	5		K							7.7	25.3
16.8	55.0										7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0				dark olive						6.5	21.3
18.0	59.0	5		L	silty and sandy						6.2	20.3
18.3	60.0				clay						5.9	19.3

Geosyntec Consultants **Boring Log** **Page 1 of 2**

Project No.: FW0400 **Location: SPT-7**
Project Name: Oak Hammok Disposal Facility **Date: 4-Dec-2001**

Coordinates:
1356067 North
624448 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Ground Elevation:
(m) 24.5 (ft.) 80.4

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0				dark brown						23.3	76.3
1.2	4.0	3		A	silty						23.0	75.3
1.5	5.0				medium to coarse						22.6	74.3
1.8	6.0				sand						22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	9		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0										20.2	66.3
4.3	14.0	10		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0				white						19.3	63.3
5.2	17.0				silty						19.0	62.3
5.5	18.0				medium to coarse						18.7	61.3
5.8	19.0	7		D	sand						18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	4		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0				dark brown						15.9	52.3
8.5	28.0				silty						15.6	51.3
8.8	29.0	2		F	medium to coarse						15.3	50.3
9.1	30.0				sand						15.0	49.3

Geosyntec Consultants | Boring Log | Page 2 of 2

Project No.: FW0400 | Location: SPT-7 | Coordinates: 1356067 North
Project Name: Oak Hammok Disposal Facility | Date: 4-Dec-2001 | 624448 East

Drilling Co.(Rig): U.S. Drilling (CME-45) | Driller: K. Claprood | Ground Elevation: (m) 24.5 (ft.) 80.4
Method: Bentonite Circulation | Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone | Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0				dark brown						14.1	46.3
10.4	34.0	6		G	silty						13.8	45.3
10.7	35.0				medium to coarse						13.5	44.3
11.0	36.0				sand						13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0	6		H							12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0				white						11.1	36.3
13.4	44.0	15		I	silty						10.8	35.3
13.7	45.0				medium to coarse						10.5	34.3
14.0	46.0				sand						10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0										9.5	31.3
14.9	49.0	4		J							9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0										8.6	28.3
15.8	52.0										8.3	27.3
16.2	53.0										8.0	26.3
16.5	54.0										7.7	25.3
16.8	55.0										7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0										6.2	20.3
18.3	60.0										5.9	19.3

Geosyntec Consultants **Boring Log** **Page 1 of 2**

Project No.: FW0400 **Location: SPT-8** Coordinates:
Project Name: Oak Hammok Disposal Facility **Date: 4-Dec-2001** 1356792 North
624996 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffett Ground Elevation:
Method: Bentonite Circulation Logger: S. Dapp (m) (ft.)
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp 24.4 80.1

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0				dark brown						23.3	76.3
1.2	4.0	2		A	silty						23.0	75.3
1.5	5.0				medium to coarse						22.6	74.3
1.8	6.0				sand						22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	20		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0				dark brown						20.8	68.3
3.7	12.0				silty						20.5	67.3
4.0	13.0				medium to coarse						20.2	66.3
4.3	14.0	15		C	sand						19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0										19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0										18.7	61.3
5.8	19.0	11		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0				white						17.2	56.3
7.3	24.0	23		E	silty						16.9	55.3
7.6	25.0				medium						16.6	54.3
7.9	26.0				sand						16.2	53.3
8.2	27.0										15.9	52.3
8.5	28.0										15.6	51.3
8.8	29.0	5		F							15.3	50.3
9.1	30.0										15.0	49.3

Geosyntec Consultants **Boring Log** **Page 2 of 2**

Project No.: FW0400 **Location:** SPT-8 Coordinates: 1356792 North
Project Name: Oak Hammok Disposal Facility **Date:** 4-Dec-2001 624996 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffett Ground Elevation: (m) 24.4 (ft.) 80.1
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0										14.1	46.3
10.4	34.0	6		G							13.8	45.3
10.7	35.0										13.5	44.3
11.0	36.0										13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0	12		H							12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0				dark brown silty medium to coarse sand						11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0										11.1	36.3
13.4	44.0	21		I							10.8	35.3
13.7	45.0										10.5	34.3
14.0	46.0										10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0										9.5	31.3
14.9	49.0	6		J							9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0										8.6	28.3
15.8	52.0										8.3	27.3
16.2	53.0										8.0	26.3
16.5	54.0	8		K							7.7	25.3
16.8	55.0										7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0				white silty medium to coarse sand						6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0	4		L							6.2	20.3
18.3	60.0										5.9	19.3

Geosyntec Consultants **Boring Log** **Page 1 of 3**

Project No.: FW0400 **Location:** SPT-9 Coordinates: 1356781 North
Project Name: Oak Hammok Disposal Facility **Date:** 4-Dec-2001 624156 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Ground Elevation: (m) 24.8 (ft.) 81.5

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0				white						23.6	77.3
0.9	3.0				silty						23.3	76.3
1.2	4.0	6		A	medium						23.0	75.3
1.5	5.0				sand						22.6	74.3
1.8	6.0										22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	31		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0										20.2	66.3
4.3	14.0	40		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0				brown			•			19.3	63.3
5.2	17.0				silty						19.0	62.3
5.5	18.0				medium						18.7	61.3
5.8	19.0	11		D	sand						18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	4		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0				dark brown						15.9	52.3
8.5	28.0				silty						15.6	51.3
8.8	29.0	3		F	medium to coarse						15.3	50.3
9.1	30.0				sand						15.0	49.3

Geosyntec Consultants **Boring Log**

Project No.: FW0400 **Location:** SPT-9 Coordinates: 1356781 North
Project Name: Oak Hammok Disposal Facility **Date:** 4-Dec-2001 624156 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood Ground Elevation: (m) 24.8 (ft.) 81.5
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests: -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0				dark brown						14.1	46.3
10.4	34.0				silty						13.8	45.3
10.7	35.0	10		G	medium to coarse						13.5	44.3
11.0	36.0				sand						13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0										12.3	40.3
12.2	40.0	16		H							12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0										11.1	36.3
13.4	44.0										10.8	35.3
13.7	45.0	6		I							10.5	34.3
14.0	46.0										10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0				brown						9.5	31.3
14.9	49.0				silty						9.2	30.3
15.2	50.0	9		J	medium to coarse						8.9	29.3
15.5	51.0				sand						8.6	28.3
15.8	52.0										8.3	27.3
16.2	53.0										8.0	26.3
16.5	54.0										7.7	25.3
16.8	55.0	5		K							7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0										6.2	20.3
18.3	60.0	3		L							5.9	19.3

Geosyntec Consultants **Boring Log** **Page 3 of 3**

Project No.: FW0400 **Location:** SPT-9 Coordinates:
Project Name: Oak Hammok Disposal Facility **Date:** 4-Dec-2001 1356781 North
624156 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood Ground Elevation:
Method: Bentonite Circulation Logger: S. Dapp (m) (ft.)
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp 24.8 81.5

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
18.6	61.0										5.6	18.3
18.9	62.0				dark olive						5.3	17.3
19.2	63.0				silty and sandy						5.0	16.3
19.5	64.0				clay						4.7	15.3
19.8	65.0	7		M							4.4	14.3
20.1	66.0										4.1	13.3
20.4	67.0										3.7	12.3
20.7	68.0										3.4	11.3
21.0	69.0										3.1	10.3
21.3	70.0	13		N							2.8	9.3
21.6	71.0				Light grey						2.5	8.3
21.9	72.0				silty shelly						2.2	7.3
22.3	73.0				medium to coarse						1.9	6.3
22.6	74.0				sand						1.6	5.3
22.9	75.0	7		O							1.3	4.3
23.2	76.0										1.0	3.3
23.5	77.0										0.7	2.3
23.8	78.0										0.4	1.3
24.1	79.0										0.1	0.3
24.4	80.0										-0.2	-0.7
24.7	81.0										-0.5	-1.7
25.0	82.0										-0.8	-2.7
25.3	83.0										-1.1	-3.7
25.6	84.0										-1.4	-4.7
25.9	85.0										-1.7	-5.7
26.2	86.0										-2.0	-6.7
26.5	87.0										-2.3	-7.7
26.8	88.0										-2.7	-8.7
27.1	89.0										-3.0	-9.7
27.4	90.0										-3.3	-10.7

Geosyntec Consultants | **Boring Log** | **Page 1 of 3**

Project No.: FW0400 | **Location: SPT-10** | Coordinates: 1357317 North
Project Name: Oak Hammok Disposal Facility | **Date: 4-Dec-2001** | 624503 East

Drilling Co.(Rig): U.S. Drilling (CME-45) | Driller: K. Claprood | Ground Elevation: (m) 24.7 (ft.) 81.0
Method: Bentonite Circulation | Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone | Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0										23.3	76.3
1.2	4.0	18		A							23.0	75.3
1.5	5.0										22.6	74.3
1.8	6.0				dark brown silty medium to coarse sand						22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	20		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0				dark brown silty medium to coarse sand						20.2	66.3
4.3	14.0	26		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0										19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0										18.7	61.3
5.8	19.0	21		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0				white silty medium sand						17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	15		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0				brown silty medium to coarse sand						15.9	52.3
8.5	28.0										15.6	51.3
8.8	29.0	5		F							15.3	50.3
9.1	30.0										15.0	49.3

Geosyntec Consultants **Boring Log** **Page 2 of 3**

Project No.: **FW0400** **Location:** **SPT-10** Coordinates: 1357317 North
Project Name: **Oak Hammok Disposal Facility** **Date:** **4-Dec-2001** 624503 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood Ground Elevation: (m) 24.7 (ft.) 81.0
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0										14.1	46.3
10.4	34.0	8		G							13.8	45.3
10.7	35.0										13.5	44.3
11.0	36.0				dark brown						13.2	43.3
11.3	37.0				silty						12.9	42.3
11.6	38.0				medium to coarse						12.6	41.3
11.9	39.0	16		H	sand						12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0										11.1	36.3
13.4	44.0	20		I							10.8	35.3
13.7	45.0										10.5	34.3
14.0	46.0										10.1	33.3
14.3	47.0										9.8	32.3
14.6	48.0										9.5	31.3
14.9	49.0	19		J							9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0				brown						8.6	28.3
15.8	52.0				silty						8.3	27.3
16.2	53.0				medium						8.0	26.3
16.5	54.0	7		K	sand						7.7	25.3
16.8	55.0										7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0	18		L							6.2	20.3
18.3	60.0										5.9	19.3

Geosyntec Consultants **Boring Log** **Page 3 of 3**

Project No.: **FW0400** **Location:** **SPT-10** Coordinates: 1357317 North
Project Name: **Oak Hammok Disposal Facility** **Date:** **4-Dec-2001** 624503 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood Ground Elevation: (m) 24.7 (ft.) 81.0
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
18.6	61.0										5.6	18.3
18.9	62.0										5.3	17.3
19.2	63.0										5.0	16.3
19.5	64.0										4.7	15.3
19.8	65.0	55		M							4.4	14.3
20.1	66.0				brown						4.1	13.3
20.4	67.0				silty						3.7	12.3
20.7	68.0				medium						3.4	11.3
21.0	69.0	50 for			sand						3.1	10.3
21.3	70.0	4 inch		N							2.8	9.3
21.6	71.0										2.5	8.3
21.9	72.0										2.2	7.3
22.3	73.0				dark olive						1.9	6.3
22.6	74.0	0		O	silty and sandy						1.6	5.3
22.9	75.0				clay						1.3	4.3
23.2	76.0										1.0	3.3
23.5	77.0										0.7	2.3
23.8	78.0										0.4	1.3
24.1	79.0	10		P							0.1	0.3
24.4	80.0				light grey						-0.2	-0.7
24.7	81.0				silty sandy						-0.5	-1.7
25.0	82.0				medium to coarse						-0.8	-2.7
25.3	83.0				sand						-1.1	-3.7
25.6	84.0	0		Q							-1.4	-4.7
25.9	85.0										-1.7	-5.7
26.2	86.0										-2.0	-6.7
26.5	87.0										-2.3	-7.7
26.8	88.0										-2.7	-8.7
27.1	89.0										-3.0	-9.7
27.4	90.0										-3.3	-10.7

Geosyntec Consultants **Boring Log** **Page 1 of 1**

Project No.: FW0400 **Location:** SPT-11 Coordinates: 1351994 North
Project Name: Oak Hammok Disposal Facility **Date:** 6-Dec-2001 624604 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood Ground Elevation: (m) 24.6 (ft.) 80.7
Method: Bentonite Circulation Logger: S. Iravani
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests: -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0										23.3	76.3
1.2	4.0	1		A							23.0	75.3
1.5	5.0										22.6	74.3
1.8	6.0				brown silty medium to coarse sand						22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	7		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0				light olive silty medium to coarse sand						20.2	66.3
4.3	14.0	9		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0										19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0				white silty medium to coarse sand						18.7	61.3
5.8	19.0	9		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	11		E	grey silty medium to coarse sand						16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0										15.9	52.3
8.5	28.0										15.6	51.3
8.8	29.0	17		F							15.3	50.3
9.1	30.0										15.0	49.3

Geosyntec Consultants **Boring Log** **Page 1 of 2**

Project No.: FW0400 **Location:** SPT-12 Coordinates:
Project Name: Oak Hammok Disposal Facility **Date:** 6-Dec-2001 1351602 North 625635 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffett
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Ground Elevation: (m) 24.5 (ft.) 80.4

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0				dark brown						23.3	76.3
1.2	4.0				silty						23.0	75.3
1.5	5.0	3			fine to medium						22.6	74.3
1.8	6.0				sand						22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0				brown						21.7	71.3
2.7	9.0				silty						21.4	70.3
3.0	10.0	21			fine to medium						21.1	69.3
3.4	11.0				sand						20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0				white						20.2	66.3
4.3	14.0				silty						19.9	65.3
4.6	15.0	12			fine to medium						19.6	64.3
4.9	16.0				sand						19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0										18.7	61.3
5.8	19.0										18.4	60.3
6.1	20.0	8									18.1	59.3
6.4	21.0				dark olive						17.8	58.3
6.7	22.0				silty						17.5	57.3
7.0	23.0				fine to medium						17.2	56.3
7.3	24.0				sand						16.9	55.3
7.6	25.0	7									16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0				dark brown						15.9	52.3
8.5	28.0				silty						15.6	51.3
8.8	29.0				medium						15.3	50.3
9.1	30.0	11			sand						15.0	49.3

Geosyntec Consultants **Boring Log** **Page 2 of 2**

Project No.: FW0400 **Location:** SPT-12 Coordinates: 1351602 North
Project Name: Oak Hammok Disposal Facility **Date:** 6-Dec-2001 625635 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffett Ground Elevation: (m) 24.5 (ft.) 80.4
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sample	Soil Description	Lab Tests: -200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
9.4	31.0										14.7	48.3
9.8	32.0										14.4	47.3
10.1	33.0				brown						14.1	46.3
10.4	34.0	13		G	silty						13.8	45.3
10.7	35.0				medium						13.5	44.3
11.0	36.0				sand						13.2	43.3
11.3	37.0										12.9	42.3
11.6	38.0										12.6	41.3
11.9	39.0	15		H							12.3	40.3
12.2	40.0										12.0	39.3
12.5	41.0										11.7	38.3
12.8	42.0										11.4	37.3
13.1	43.0										11.1	36.3
13.4	44.0	5		I							10.8	35.3
13.7	45.0										10.5	34.3
14.0	46.0				light brown						10.1	33.3
14.3	47.0				silty						9.8	32.3
14.6	48.0				medium						9.5	31.3
14.9	49.0	5		J	sand						9.2	30.3
15.2	50.0										8.9	29.3
15.5	51.0										8.6	28.3
15.8	52.0										8.3	27.3
16.2	53.0										8.0	26.3
16.5	54.0	0		K							7.7	25.3
16.8	55.0										7.4	24.3
17.1	56.0										7.1	23.3
17.4	57.0										6.8	22.3
17.7	58.0										6.5	21.3
18.0	59.0										6.2	20.3
18.3	60.0										5.9	19.3

Geosyntec Consultants **Boring Log** **Page 1 of 1**

Project No.: FW0400 **Location: SPT-13** Coordinates: 1351240 North
Project Name: Oak Hammok Disposal Facility **Date: 6-Dec-2001** 626443 East

Drilling Co.(Rig): U.S. Drilling (CME-55) Driller: J.C. Maffett
Method: Bentonite Circulation Logger: S. Dapp
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Ground Elevation: (m) 24.7 (ft.) 81.1

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0										23.3	76.3
1.2	4.0	9		A							23.0	75.3
1.5	5.0										22.6	74.3
1.8	6.0				dark brown silty fine to medium sand						22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0										21.7	71.3
2.7	9.0	28		B							21.4	70.3
3.0	10.0										21.1	69.3
3.4	11.0										20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0										20.2	66.3
4.3	14.0	28		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0				light brown silty medium sand						19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0										18.7	61.3
5.8	19.0	21		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0				white silty medium to coarse sand						17.2	56.3
7.3	24.0	12		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0				brown silty medium to coarse sand						15.9	52.3
8.5	28.0										15.6	51.3
8.8	29.0	13		F							15.3	50.3
9.1	30.0										15.0	49.3

Geosyntec Consultants **Boring Log** **Page 1 of 1**

			Coordinates:
Project No.:	**FW0400**	**Location:** **SPT-14**	1350398 North
Project Name:	**Oak Hammok Disposal Facility**	**Date:** **6-Dec-2001**	626102 East

				Ground Elevation:	
Drilling Co.(Rig):	U.S. Drilling (CME-45)	Driller:	K. Claprood	(m)	(ft.)
Method:	Bentonite Circulation	Logger:	S. Iravani	24.7	81.0
tooling:	2.5 in. Diam. tri-cone	Reviewer:	S. Dapp		

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	Lab Tests -200 US (%)	Lab Tests w (%)	Lab Tests LL (%)	Lab Tests PI	Lab Tests G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0				white						23.3	76.3
1.2	4.0	13		A	coarse						23.0	75.3
1.5	5.0				sand						22.6	74.3
1.8	6.0										22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0				brown						21.7	71.3
2.7	9.0	10		B	silty						21.4	70.3
3.0	10.0				medium to coarse						21.1	69.3
3.4	11.0				sand						20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0										20.2	66.3
4.3	14.0	14		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0				white						19.3	63.3
5.2	17.0				medium to coarse						19.0	62.3
5.5	18.0				sand						18.7	61.3
5.8	19.0	10		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0										17.8	58.3
6.7	22.0										17.5	57.3
7.0	23.0										17.2	56.3
7.3	24.0	8		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0				white						16.2	53.3
8.2	27.0				silty						15.9	52.3
8.5	28.0				medium to coarse						15.6	51.3
8.8	29.0				sand						15.3	50.3
9.1	30.0	14		F							15.0	49.3

Geosyntec Consultants **Boring Log** **Page 1 of 1**

Project No.: FW0400 **Location: SPT-15** Coordinates: 1349802 North
Project Name: Oak Hammok Disposal Facility **Date: 6-Dec-2001** 625707 East

Drilling Co.(Rig): U.S. Drilling (CME-45) Driller: K. Claprood
Method: Bentonite Circulation Logger: S. Iravani
tooling: 2.5 in. Diam. tri-cone Reviewer: S. Dapp

Ground Elevation: (m) 24.6 (ft.) 80.7

Depth (m)	Depth (ft.)	Un-Corrected SPT "N" (blows/ft)	Graphic Log	Sampl	Soil Description	-200 US (%)	w (%)	LL (%)	PI	G	Boring Elevation (m)	Boring Elevation (ft.)
0.3	1.0										23.9	78.3
0.6	2.0										23.6	77.3
0.9	3.0				white						23.3	76.3
1.2	4.0	21		A	silty						23.0	75.3
1.5	5.0				medium						22.6	74.3
1.8	6.0				sand						22.3	73.3
2.1	7.0										22.0	72.3
2.4	8.0				white						21.7	71.3
2.7	9.0	39		B	silty						21.4	70.3
3.0	10.0				fine						21.1	69.3
3.4	11.0				sand						20.8	68.3
3.7	12.0										20.5	67.3
4.0	13.0										20.2	66.3
4.3	14.0	14		C							19.9	65.3
4.6	15.0										19.6	64.3
4.9	16.0										19.3	63.3
5.2	17.0										19.0	62.3
5.5	18.0										18.7	61.3
5.8	19.0	7		D							18.4	60.3
6.1	20.0										18.1	59.3
6.4	21.0				white						17.8	58.3
6.7	22.0				coarse						17.5	57.3
7.0	23.0				sand						17.2	56.3
7.3	24.0	11		E							16.9	55.3
7.6	25.0										16.6	54.3
7.9	26.0										16.2	53.3
8.2	27.0										15.9	52.3
8.5	28.0										15.6	51.3
8.8	29.0	10		F							15.3	50.3
9.1	30.0										15.0	49.3

Attachment 2

Rotosonic Boring Logs

(SB-1 through SB-3)

Kubal-Furr & Associates
-Environmental Consultants-

LOG OF BORING SB-1

(Page 1 of 2)

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/2/01	Company Rep.	: K. Smith
Date Completed	: 11/3/01	Northing Coord.	: 1356401.00
Hole Diameter	: 4 inches	Easting Coord.	: 624799.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 80.00	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
0	80		SILTY SAND, Olive Black to Brown, well sorted, fine grained	1	
5	75			2	
10	70		SAND, Moderate Yellowish Brown, well sorted, fine grained with minor silt	3	
15	65			4	
20	60			5	
25	55		SILTY SAND, Dark Yellowish Brown to Gray to Dark Gray to Grayish Black, medium-fine grained, sub-angular quartz grains, becoming more Silty 40-47ft	6	
30	50			7	
35	45			8	
40	40			9	
45	35			10	
50	30		SILTY SAND, Light Olive Gray to Grayish Olive, with minor dark minerals (5%-10%), well sorted, fine grained, DISTURBED SAMPLE- 55'-65'	11	
55	25			12	
60	20			13	
65	15		DISTURBED SAMPLE-65'-75'	14	
70	10		CLAYEY SAND, Grayish Olive with minor shell fragments	15	
75	5		SANDY SHELLY CLAY, Light Olive Gray to Light Olive	16	
80	0			17	
85	-5		SHELL HASH with minor clay, Yellowish Gray, Some whole shells, fragments from 2mm-50mm	18	
90					

02-26-2002 C:\Program Files\mtech2002\OMNI Logs\SB-1.boi

Kubal-Furr & Associates
-Environmental Consultants-

LOG OF BORING SB-1

(Page 2 of 2)

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/2/01	Company Rep.	: K. Smith
Date Completed	: 11/3/01	Northing Coord.	: 1356401.00
Hole Diameter	: 4 inches	Easting Coord.	: 624799.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman

Depth in Feet	Surf. Elev. 80.00	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
90	-10		SHELLY SILTY SAND with Partially Cemented Shells, Grayish Olive	19	
95	-15			20	
100	-20		SILTY SAND with minor Shell fragments, Light Olive Gray, fine grained	21	
105	-25		CLAYEY SAND/SANDY CLAY with minor Shell fragments, Light Olive Gray to Grayish Olive, fine grained	22	
110	-30			23	
115	-35			24	
120	-40			25	
125	-45			26	
130	-50			27	
135	-55		SILTY SAND with Shell fragments (2mm-25mm), and minor Dark Minerals, Grayish Olive, well sorted, fine grained	28	
140	-60			29	
145	-65			30	
150	-70			31	
155	-75		CLAYEY SAND with Shell fragments, Grayish Olive, fine grained	32	
160	-80			33	
165	-85		CALCAREOUS SAND with Shell fragments, Grayish Olive, fine grained	34	
170	-90		CLAY, STIFF, PLASTIC, with fine Phosphatic nodules, Olive Gray (Top of Hawthorn Group)	35	
175	-95			36	175-177'
180					

02 C:\Program Files\vmtech2002\OMNI Logs\SB-1.boi

Kubal-Furr & Associates
-Environmental Consultants-

LOG OF BORING SB-2

(Page 1 of 2)

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 10/31/01	Company Rep.	: K. Smith
Date Completed	: 11/01/01	Northing Coord.	: 1353191.00
Hole Diameter	: 4 inches	Easting Coord.	: 624139.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman / J. Furr

Depth in Feet	Surf. Elev. 82.00	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
0	82		SILTY SAND, Gray	1	
5	77		SILT,Dark Black, Organic Rich at top grading less organic to Dark Brown SILT	2	
10	72				
15	67		SAND, PaleYellowish Brown, well sorted, sub-angular quartz grains, fine grained with minor silt	3 4	
20	62		SILTY SAND, Dark Brown to Olive Gray to Dusky Yellowish Green, fine grained, less Silty 25-35ft.	5	
25	57			6	
30	52			7	
35	47			8	
40	42			9	
45	37			10	
50	32			11	
55	27		DISTURBED SAMPLE-55-65' CLAY with Shell fragments (1mm-2mm), Grayish Green	12	
60	22			13	
65	17		SHELL HASH with Shell fragments 2mm-50mm, Fragments included complete Gastopods, Bivalves, Yellowish Gray, Poorly Sorted	14	
70	12			15	
75					

02-... C:\Program Files\mtech2002\OMNI Logs\SB-2.boi

Kubal-Furr & Associates
-Environmental Consultants-

LOG OF BORING SB-2

(Page 2 of 2)

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 10/31/01	Company Rep.	: K. Smith
Date Completed	: 11/01/01	Northing Coord.	: 1353191.00
Hole Diameter	: 4 inches	Easting Coord.	: 624139.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman / J. Furr

Depth in Feet	Surf. Elev. 82.00	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
75	7				
80	2		CLAYEY SAND to SANDY CLAY, medium to fine grained, Large Oyster Shell fragments (2mm-50mm), and Dark Minerals (10%) 90-115ft., Grayish Green to Dark Grayish Green	16	
85	-3			17	
90	-8			18	
95	-13			19	
100	-18			20	
105	-23			21	
110	-28			22	
115	-33			23	
120	-38			24	
			CALCAREOUS SAND with Shell fragments, Grayish Olive, fine grained	25	
125	-43		CLAYEY SAND with Shell fragments, Olive Gray	26	
130	-48		CLAY with Shell fragments, Olive Gray,		
			SANDY CLAY with SHARKS TOOTH, 2mm-50mm PHOSPHATE NODULES and minor Shell fragments, Gray, (Top of Hawthorn Group)	27	
135	-53		CLAY, STIFF, PLASTIC with fine Phosphatic Nodules, fine sand stringers 143-145ft., Olive Gray	28	
140	-58			29	
145	-63			30	145-147'
150					

02 C:\Program Files\mtech2002\OMNI Logs\SB-2.bor

Kubal-Furr & Associates
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LOG OF BORING SB-3

(Page 1 of 2)

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/01/01	Company Rep.	: K. Smith
Date Completed	: 11/02/01	Northing Coord.	: 1353810.00
Hole Diameter	: 4 inches	Easting Coord.	: 626532.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman / J. Furr

Depth in Feet	Surf. Elev. 79.20	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
0	79		SILTY SAND, Black, Organic-rich	1	
5	74		SILTY SAND, Pale Yellowish Brown	2	
10	69			3	
15	64		SAND, PaleYellowish Brown, fine grained, clean quartz sand		
20	59		SILTY SAND, Dark Yellowish Brown to Grayish Brown to Grayish Olive, Medium to fine grained	4	
25	54			5	
30	49			6	
35	44			7	
40	39			8	
45	34			9	
50	29			10	
55	24			11	
60	19		SANDY SILTY CLAY with large (1-mm-50mm) fragments, Grayish Olive Green	12	
65	14			13	
70	9		SHELLY SAND with large Shell fragments (1-mm-50mm), Yellowish Gray, some whole shells	14	
75	4		SHELL HASH with CLAY, Shell fragments from 5mm-50mm, Yellowish Gray	15	
80			SHELLY SAND with fragments from 5mm-25mm, Yellowish Gray to Pale Greenish Yellow	16	

02-26-2002 C:\Program Files\mtech2002\OMNI Logs\SB-3.bor

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LOG OF BORING SB-3

(Page 2 of 2)

OMNI Waste
Oak Hammock
Site Investigation
Holopaw, FL
Project # 48OH01

Date Started	: 11/01/01	Company Rep.	: K. Smith
Date Completed	: 11/02/01	Northing Coord.	: 1353810.00
Hole Diameter	: 4 inches	Easting Coord.	: 626532.00
Drilling Method	: Rotosonic	Survey By	: Johnston's Surveying
Sampling Method	: Rotosonic	Logged By	: G. Kinsman / J. Furr

Depth in Feet	Surf. Elev. 79.20	GRAPHIC	DESCRIPTION	Samples	Shelby Tube Sample
80	-1			17	
85	-6			18	
90	-11		CLAYEY SAND, Pale Olive to Grayish Olive, well sorted, fine grained, mixed with minor Shell fragments 95-146ft.	19	
95	-16			20	
100	-21			21	
105	-26			22	
110	-31			23	
115	-36			24	
120	-41			25	
125	-46			26	
130	-51			27	
135	-56			28	
140	-61			29	
145	-66			30	
150	-71		SANDY CLAY with PHOSPHATE NODULES and Shell fragments, Olive Gray, (Top of Hawthorn Group)	31	
155	-76		CLAY, STIFF, PLASTIC, with fine Phosphatic Nodules, Olive Gray, (Hawthorn Group)	32	155-157'
160					

02- C:\Program Files\mtech2002\OMNI Logs\SB-3.bo

Attachment 3

Laboratory Test Results

Grain Size Analyses

Specific Gravity Determination

Maximum and Minimum Index Density Determination

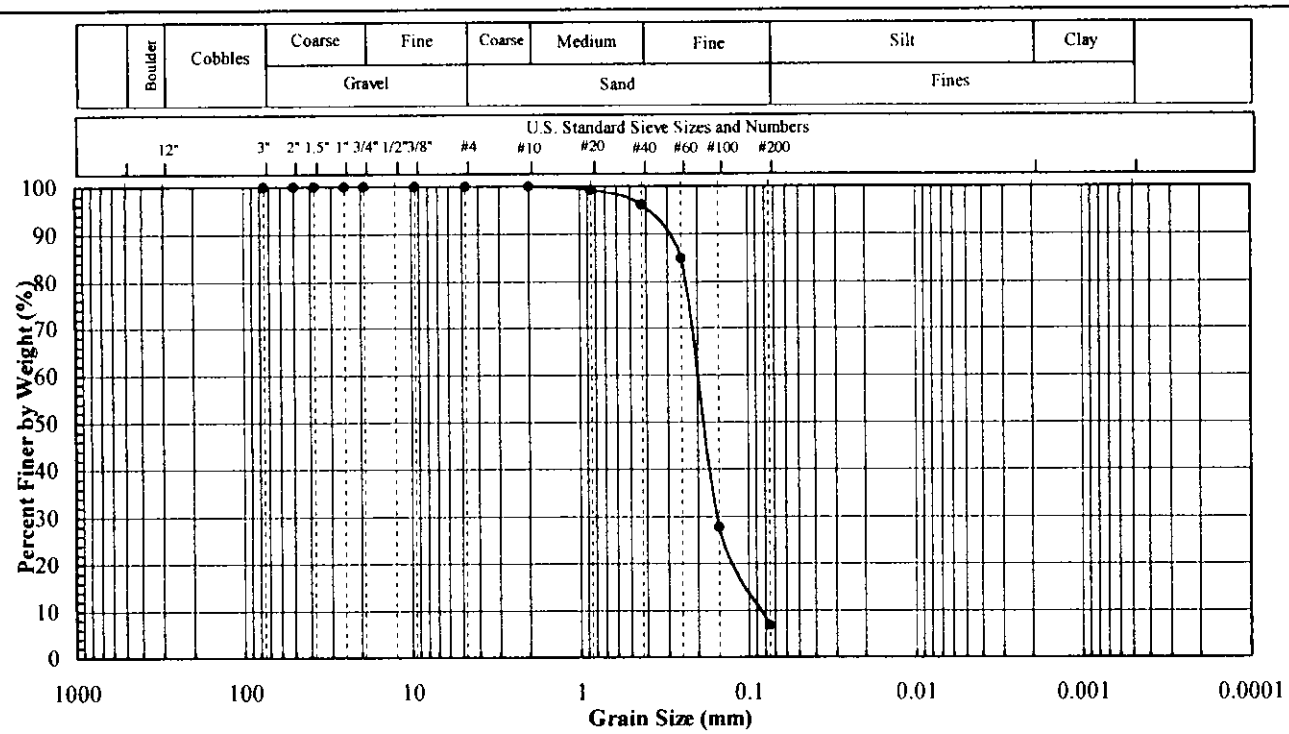
Excel Geotechnical Testing
"Excellence In Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 1666

Project Name:	Oak Hammock SWD Facility
Project No:	33
Client Sample ID:	B
Lab Sample No:	A27

ASTM D 2216, D 5140, D 422, C 136, D 4318, D 2487

SOIL INDEX PROPERTIES

Moisture Content, Grain Size, Atterberg Limits, Classification

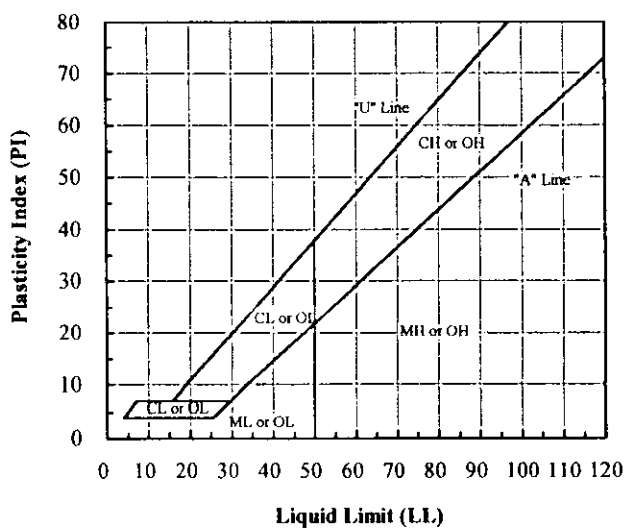


Sieve No.	Size (mm)	% Finer
3"	75	100
2"	50	100
1.5"	37.5	100
1"	25	100
3/4"	19	100
3/8"	9.5	100
#4	4.75	100
#10	2.00	100
#20	0.850	99
#40	0.425	96
#60	0.250	85
#100	0.150	28
#200	0.075	7

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	
Sand (%):	93.3
Fines (%):	6.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (%)	Atterberg Limits PL (%)	Atterberg Limits PI (-)	Engineering Classification
B	A27	19.6	6.7				

Note(s):

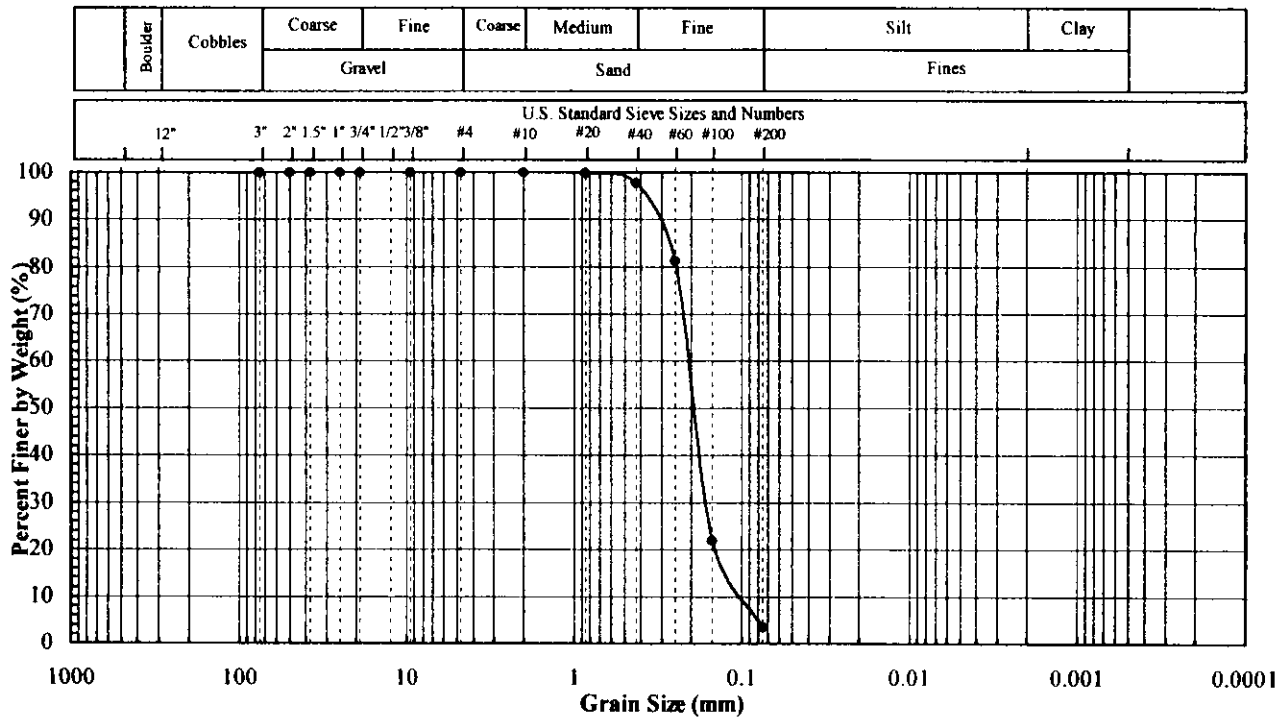
Excel Geotechnical Testing
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 1666

Project Name:	Oak Hammock SWD Facility
Project No:	33
Client Sample ID:	BR-A
Lab Sample No:	A29

ASTM D 2216, D 1140, D 422, C 136, D 4318, D 2487

SOIL INDEX PROPERTIES

Moisture Content, Grain Size, Atterberg Limits, Classification

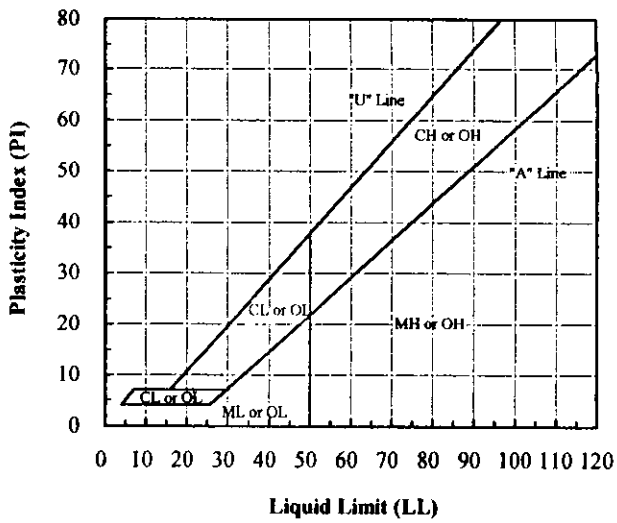


Sieve No.	Size (mm)	% Finer
3"	75	100
2"	50	100
1.5"	37.5	100
1"	25	100
3/4"	19	100
3/8"	9.5	100
#4	4.75	100
#10	2.00	100
#20	0.850	100
#40	0.425	98
#60	0.250	81
#100	0.150	22
#200	0.075	3

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	
Sand (%):	96.5
Fines (%):	3.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (%)	Atterberg Limits PL (%)	Atterberg Limits PI (-)	Engineering Classification
BR-A	A29	19.7	3.5				

Note(s):

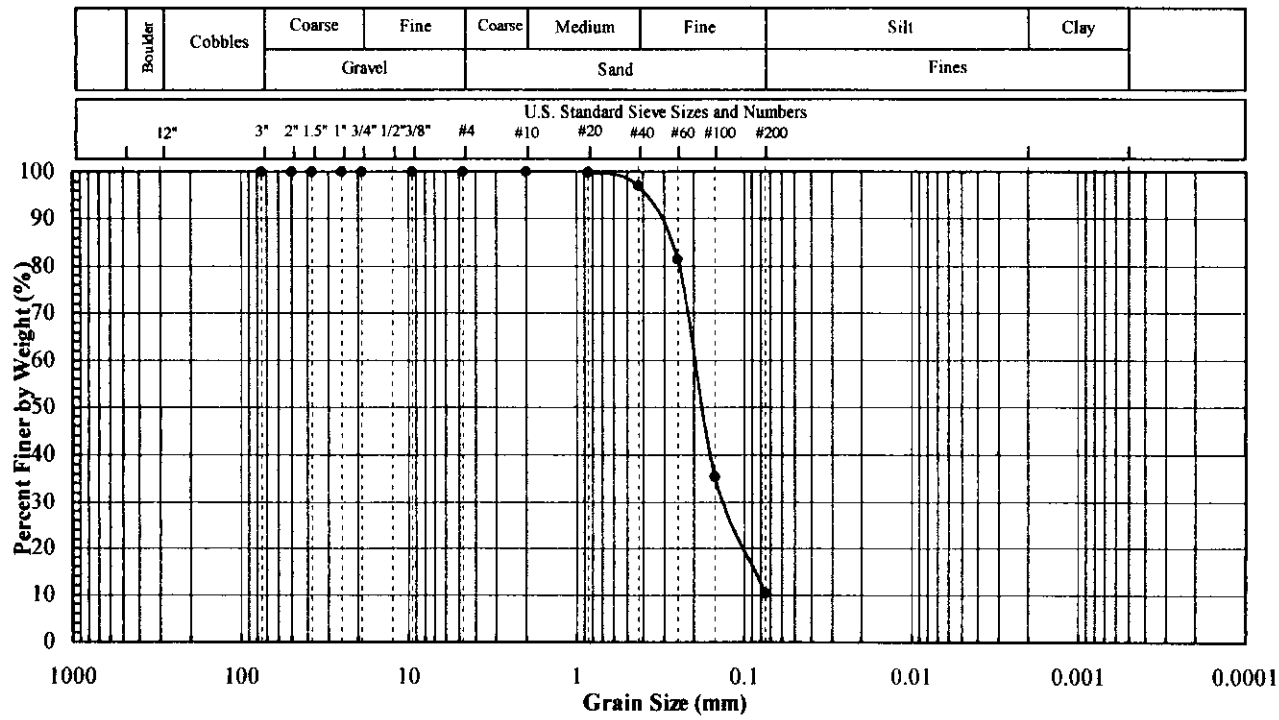
Excel Geotechnical Testing
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 1666

Project Name:	Oak Hammock SWD Facility
Project No:	33
Client Sample ID:	BR-B
Lab Sample No:	A30

ASTM D 2216, D 1140, D 422, C 136, D 4318, D 2487

SOIL INDEX PROPERTIES

Moisture Content, Grain Size, Atterberg Limits, Classification

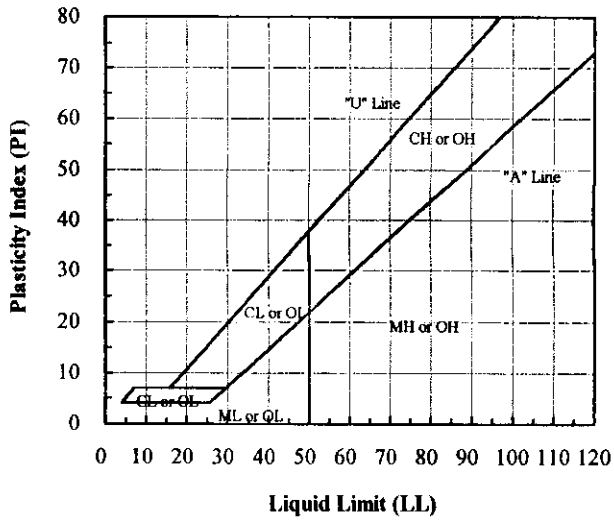


Sieve No.	Size (mm)	% Finer
3"	75	100
2"	50	100
1.5"	37.5	100
1"	25	100
3/4"	19	100
3/8"	9.5	100
#4	4.75	100
#10	2.00	100
#20	0.850	100
#40	0.425	97
#60	0.250	81
#100	0.150	35
#200	0.075	10

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	
Sand (%):	89.6
Fines (%):	10.4
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (%)	Atterberg Limits PL (%)	Atterberg Limits PI (-)	Engineering Classification
BR-B	A30	22.7	10.4				

Note(s):

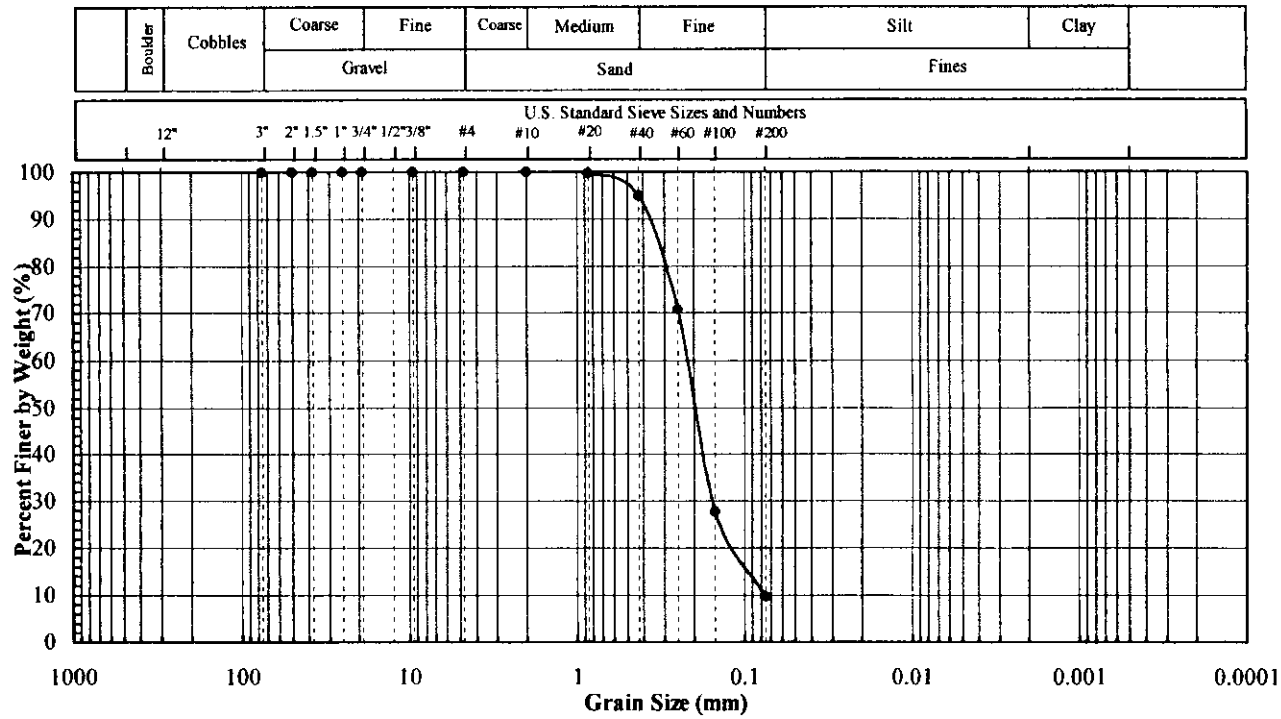
Excel Geotechnical Testing
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 1666

Project Name:	Oak Hammock SWD Facility
Project No:	33
Client Sample ID:	BR-C
Lab Sample No:	A31

ASTM D 2216, D 1140, D 422, C 136, D 4318, D 2487

SOIL INDEX PROPERTIES

Moisture Content, Grain Size, Atterberg Limits, Classification

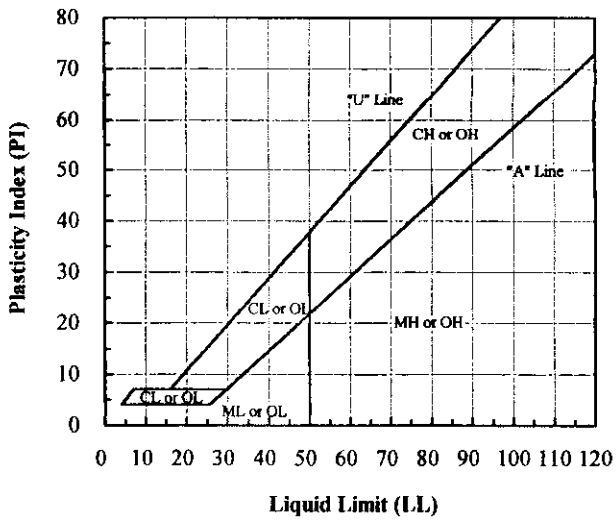


Sieve No.	Size (mm)	% Finer
3"	75	100
2"	50	100
1.5"	37.5	100
1"	25	100
3/4"	19	100
3/8"	9.5	100
#4	4.75	100
#10	2.00	100
#20	0.850	100
#40	0.425	95
#60	0.250	71
#100	0.150	28
#200	0.075	10

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	
Sand (%):	90.4
Fines (%):	9.6
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (%)	Atterberg Limits PL (%)	Atterberg Limits PI (-)	Engineering Classification
BR-C	A31	21.7	9.6				

Note(s):

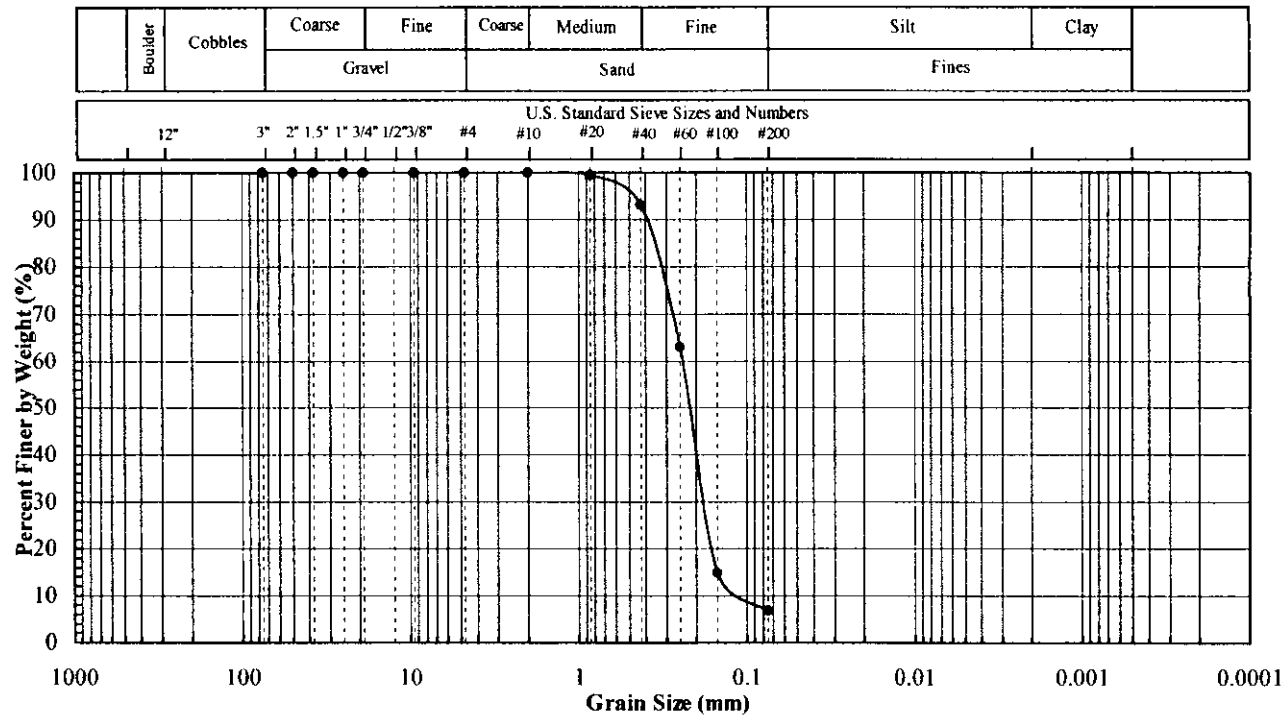
Excel Geotechnical Testing
"Excellence In Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 1666

Project Name:	Oak Hammock SWD Facility
Project No:	33
Client Sample ID:	BR-D
Lab Sample No:	A32

ASTM D 2216, D 1140, D 422, C 136, D 4318, D 2487

SOIL INDEX PROPERTIES

Moisture Content, Grain Size, Atterberg Limits, Classification

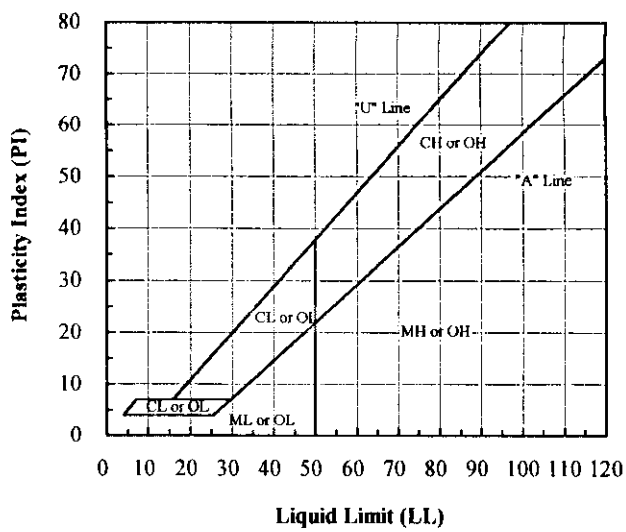


Sieve No.	Size (mm)	% Finer
3"	75	100
2"	50	100
1.5"	37.5	100
1"	25	100
3/4"	19	100
3/8"	9.5	100
#4	4.75	100
#10	2.00	100
#20	0.850	99
#40	0.425	93
#60	0.250	63
#100	0.150	15
#200	0.075	7

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	
Sand (%):	93.2
Fines (%):	6.8
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (%)	Atterberg Limits PL (%)	Atterberg Limits PI (-)	Engineering Classification
BR-D	A32	22.0	6.8				

Note(s):

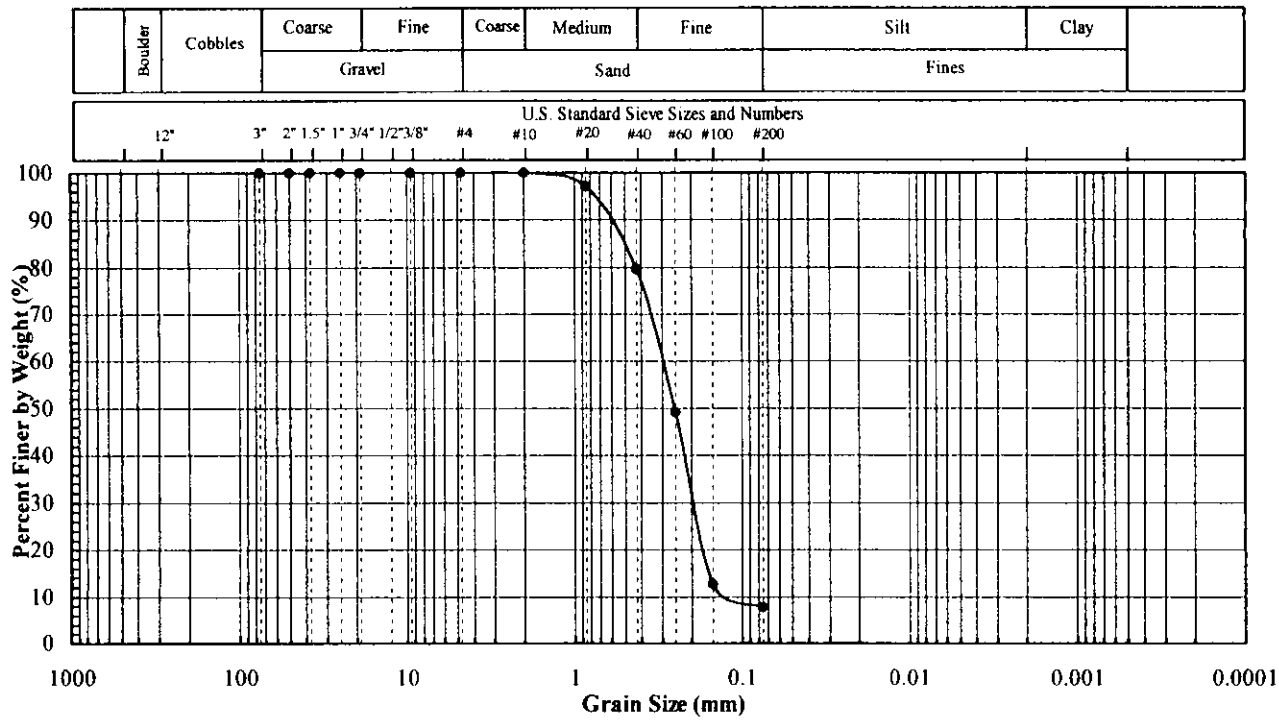
Excel Geotechnical Testing
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 1666

Project Name:	Oak Hammock SWD Facility
Project No:	33
Client Sample ID:	BR-E
Lab Sample No:	A33

ASTM D 2216, D 1140, D 422, C 136, D 4318, D 2487

SOIL INDEX PROPERTIES

Moisture Content, Grain Size, Atterberg Limits, Classification

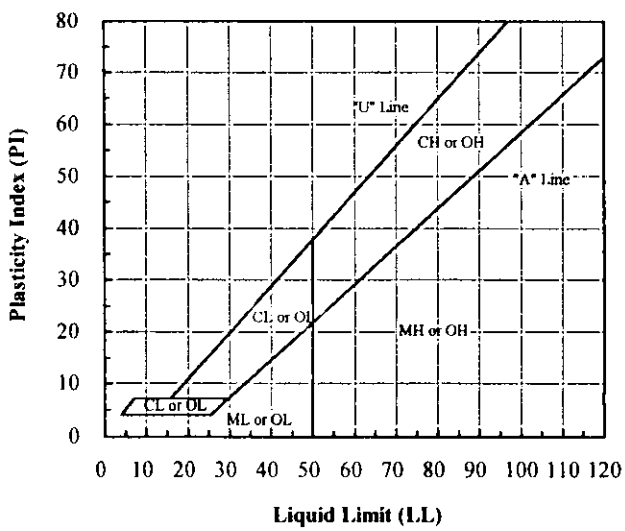


Sieve No.	Size (mm)	% Finer
3"	75	100
2"	50	100
1.5"	37.5	100
1"	25	100
3/4"	19	100
3/8"	9.5	100
#4	4.75	100
#10	2.00	100
#20	0.850	97
#40	0.425	80
#60	0.250	49
#100	0.150	13
#200	0.075	8

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	
Sand (%):	92.3
Fines (%):	7.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (%)	Atterberg Limits PL (%)	Atterberg Limits PI (-)	Engineering Classification
BR-E	A33	21.4	7.7				

Note(s):

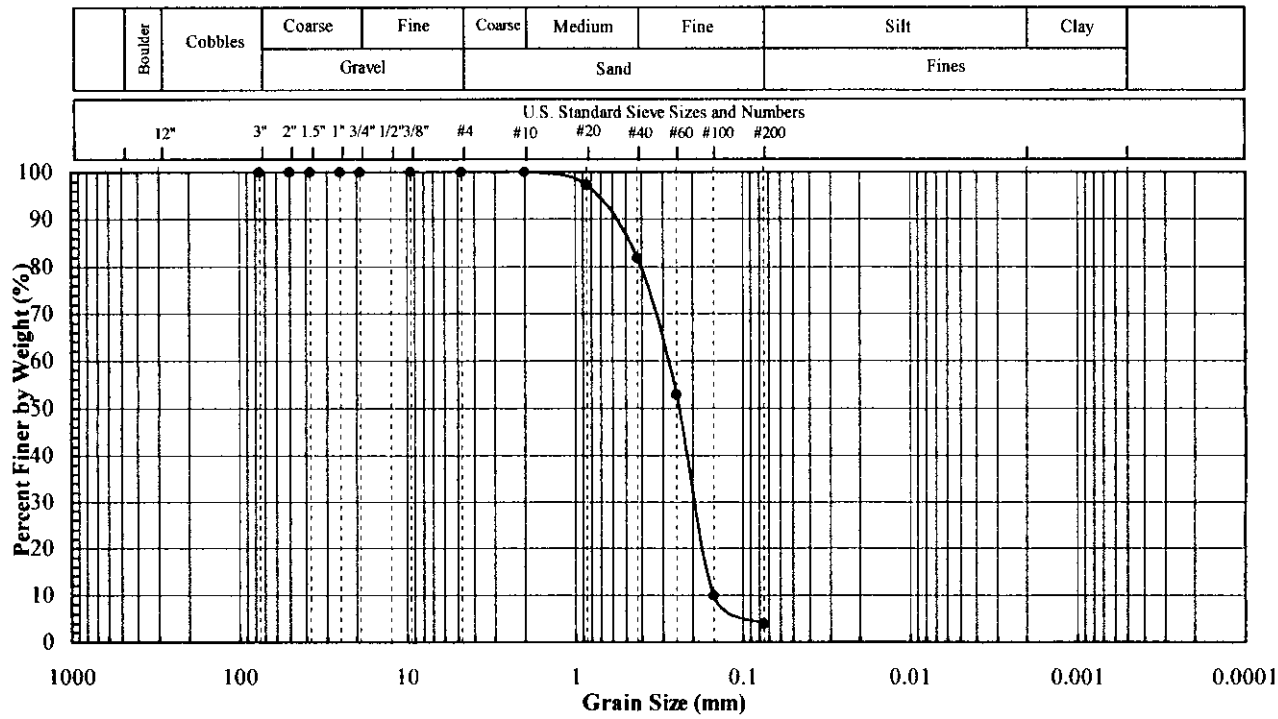
Excel Geotechnical Testing
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 1666

Project Name:	Oak Hammock SWD Facility
Project No:	33
Client Sample ID:	BR-F
Lab Sample No:	A34

ASTM D 2216, D 1140, D 422, C 136, D 4318, D 2487

SOIL INDEX PROPERTIES

Moisture Content, Grain Size, Atterberg Limits, Classification

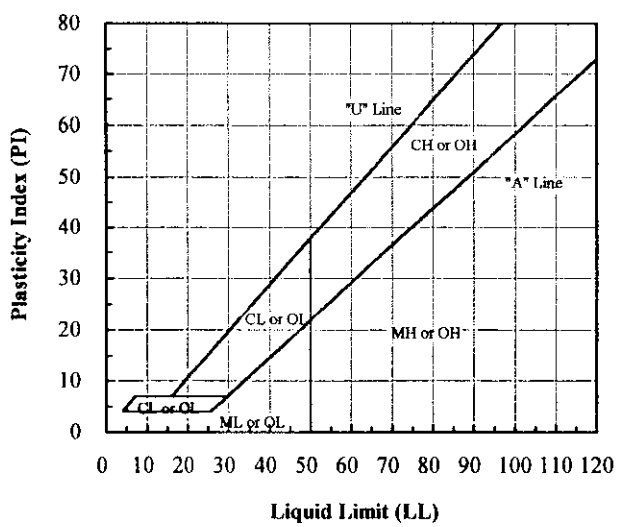


Sieve No.	Size (mm)	% Finer
3"	75	100
2"	50	100
1.5"	37.5	100
1"	25	100
3/4"	19	100
3/8"	9.5	100
#4	4.75	100
#10	2.00	100
#20	0.850	97
#40	0.425	82
#60	0.250	53
#100	0.150	10
#200	0.075	4

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	
Sand (%):	96.1
Fines (%):	3.9
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (%)	Atterberg Limits PL (%)	Atterberg Limits PI (-)	Engineering Classification
BR-F	A34	20.7	3.9				

Note(s):

Excel Geotechnical Testing
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 1666

Test Results Summary

Project Name: Oak Hammock SWD Facility

Project No.: 33

Index Density Test Results

Sample Info.		Test Information								Remarks
Site ID	Lab No.	Moisture Content ASTM D 2216	Fines Content ASTM D 1140	Specific Gravity ASTM D 854	Min Index Density ASTM D 4254 (Method) (gr/cm^3)			Max Index Density ASTM D 4253 (gr/cm^3)		
					A	B	C	Standard [1]	EGT [2]	
(-)	(-)	(%)	(%)	(%)						
B	A27	0.3	NA	2.678	1.25	1.22	1.21	1.59	1.54	Unwashed

Notes:

1 - Test performed at Geotesting Express of Georgia.

2 - Test performed at Excel Geotechnical Testing using a 4 in. Proctor Compaction mold tapped vigorously at the side with a 5.5 in. wide steel fork under a surcharge of 17.2 lb.

BEARING CAPACITY ANALYSIS

1. INTRODUCTION

1.1 Project Description
1.2 Purpose of Analysis
1.3 Method of Analysis

2. ANALYSIS PARAMETERS

2.1 Geometry
2.2 Foundation Soils
2.3 Vertical Load

3. BEARING CAPACITY CALCULATION

4. SUMMARY AND CONCLUSIONS

REFERENCES

LIST OF FIGURES

1. Overall Bearing Capacity, from Das (1990).
2. Modes of Foundation Failure in Sand, from Vesic (1973).
3. Modified Bearing Capacity Factors, from Das (1990).

1. INTRODUCTION

1.1 Project Description

The Oak Hammock Disposal (OHD) landfill footprint is approximately 264 acres encompassing an area approximately 6,000 feet in the north-south direction and with about 3,000 feet in the north east-west direction. The maximum landfill height is approximately 95 feet above existing ground surface. the landfill sideslopes are 4 horizontal to 1 vertical (4H:1V).

1.2 Purpose of Analysis

The overall bearing capacity was checked for the proposed OHD facility. A worst-case loading scenario was assumed to ensure that an adequate safety factor exists against bearing capacity failure.

1.3 Method of Analysis

The ultimate bearing capacity was calculated according the method first proposed by Terzaghi (1943) using modified bearing capacity factors for a local shear failure mode proposed by Vesic (1973). The overall bearing failure planes were calculated to be at a depth greater than the thickness of the soil layers above the Ocala Group, using relationships proposed by Vesic (1973). Therefore, the average soil properties were conservatively assumed throughout the entire zone of the bearing capacity failure plane. The dimension for the landfill width was estimated for a worst-case loading scenario during construction of Phase 1, and the maximum load calculated for the entire landfill was conservatively assumed to act across the landfill width in the analysis.

2. ANALYSIS PARAMETERS

2.1 Geometry

A minimum landfill width (B_{MIN}) of approximately 400 ft was used, as this would be the minimal width of the landfill in a North-South direction during the critical portion of construction of Phase 1. This is the minimum width that the fill would be placed, as shown in the permit drawing Sheet 26 of 50. Since the bearing capacity is directly proportional to the width of the loaded area, use of a minimum width is conservative as the safety factor would increase with a larger width.

2.2 Foundation Soils

The stratigraphy underlying the proposed OHD facility consists of three major divisions: The post-Hawthorn undifferentiated formation (to a depth of 155 ft), the Hawthorn Group (from a depth of 155 ft to 300 ft), and the Ocala Group (below a depth of 300 ft). A detailed discussion of the statigraphy underlying the proposed OHD facility was presented in the calculation package entitled *Geotechnical Investigation Report.*

The post-Hawthorn undifferentiated formation consists of two distinct layers: a surficial silty sand to a depth of approximately 70 ft and a shelly sand layer from a depth of approximately 70 ft to 155 ft. The calculation package titled *Geotechnical Investigation Report* has shown that the effective friction angle (ϕ') of these soils to be an average of 30° from empirical correlations applied to the standard penetration test (SPT) that was conducted on site.

The Hawthorn Group consists of two distinct formations: the Peace River formation which approximately comprised the top 77 ft of the Hawthorn Group, and the Arcadia formation which approximately comprised the bottom 68 ft of the Hawthorn Group. Below the Hawthorn Group is the Ocala Group, which consists principally of limestone.

2.3 Vertical Load

The vertical load imparted to the foundation soils from the subgrade fill and waste were calculated in the package entitled *Settlement Analysis*, and are shown in the cited package as Figures 7 and 8, respectively. The vertical load imposed upon the foundation soil, during the critical stage of construction of Phase 1, can be conservatively estimated as the combination of the greatest load from the waste summed with the greatest load from the subgrade fill from the entire landfill area. Assuming 95 ft of waste at 70 pcf and 11.5 ft of subgrade at 120 pcf, this yields a maximum load (q_{max}) of 8,030 psf.

3. BEARING CAPACITY CALCULATION

A comprehensive theory for evaluation of the ultimate bearing capacity was first presented by Terzaghi (1943). Figure 1 is taken from Das (1990), and annotated to show the relative dimensions of the proposed OHD facility and depth to the Ocala Group. Note that a minimum landfill width (B_{MIN}) of approximately 400 ft was used, as this would be the width of the landfill in a North-South direction during the critical construction stage during Phase 1. The depth of the soil wedge (H_{MIN}) mobilized by the landfill load, is calculated by the trigonometric relationship with the angle that this soil wedge makes with respect to the horizontal (α). Vesic (1973) presented the relationship between this angle (α) and the effective friction angle of the soil (ϕ') as shown below in Equation 2. Note

that the calculation package titled *Geotechnical Investigation Report* has shown that the effective friction angle of the soil (ϕ') of the foundation soils to be an average of 30°.

$$\alpha = 45^\circ + \frac{\phi'}{2} \quad \text{and} \quad H_{MIN} = \left(\frac{B_{MIN}}{2} \right) \tan(\alpha) \qquad \text{Equation 2}$$

Where: α = angle of soil wedge with respect to horizontal (degrees)
ϕ' = effective friction angle of soil = 30°
H_{MIN} = Minimum depth of soil wedge (ft.)
B_{MIN} = Minimum width of landfill = 400 ft.

The above relationship yields a minimum depth of the soil wedge (H_{MIN}) to be approximately 350 ft. This is slightly greater than the depth of the soil layers at the proposed OHD facility (the undifferentiated sand layers and the Hawthorn Group), as the Ocala Group starts at a depth of approximately 300 ft. Therefore, a significant portion of the bearing capacity failure surface would be contained within the Ocala Group (see Figure 1). In an effort to quantify the lower bound for the factor of safety, the following analysis makes the conservative assumption that the foundation soil continues beyond the bearing capacity failure surface (i.e., the Ocala Group is replaced by soil with ϕ' = 30°). The limestone of the Ocala Group is expected to actually have an effective friction angle much greater than 30°.

The mode of bearing capacity failure in sand was shown by Vesic (1973) to be a function of the relative density of the soil (D_r) and the ratio of the depth of the foundation measured from the ground surface (D_f) to the modified footing width (B^*). This relationship is shown graphically in Figure 2. Since the bottom of the landfill is at existing ground (D_f = 0), the ratio (D_f / B^*) is equal to 0. Also, the average relative density (D_r) was shown in the calculation package entitled *Geotechnical Investigation Report* to be approximately equal to 50 percent (0.5). This identifies the bearing capacity failure mode as that of local shear failure, as is shown in Figure 2.

The general equation for ultimate bearing capacity was presented by Terzaghi (1943), and is shown as Equation 3 for the assumed case of a continuous strip footing. Note that the buoyant unit weight was used as the assumption of the water table at existing ground level is conservative. The modified bearing capacity factors (N_c', N_q', N_γ') are used for the local shear failure mode.

$$q_{ult} = cN_c' + qN_q' + \frac{1}{2}(\gamma - \gamma_w) B_{MIN} N_\gamma' \qquad \text{Equation 3}$$

Where: q_{ult} = ultimate bearing capacity of the foundation soil (psf).

c = cohesion of the foundation soil = 0.

q = overburden pressure at top of existing grade = 0.

γ = total unit weight of foundation soils = 120 pcf.

γ_w = unit weight of water = 62.4 pcf.

B_{MIN} = Minimum width of landfill = 400 ft.

N_c', N_q', N_γ' modified bearing capacity factor for local shear failure mode.

The modified bearing capacity factor (N_γ') is a function of the effective friction angle of the soil (ϕ') of the foundation soils, which was estimated in the calculation package entitled *Geotechnical Investigation Report* to be an average of 30°. This relationship is shown graphically in Figure 3, taken from Das (1990), and was used to calculate the modified bearing capacity factor (N_γ') equal to 5.6. Thus, Equation 3 yields an ultimate bearing capacity (q_{ult}) of 64,500 psf.

The vertical load from the subgrade fill and the waste were calculated in the package entitled *Settlement Analysis*, and is shown in the cited calculation package as Figures 7 and 8, respectively. The vertical load imposed upon the foundation soil, during the critical stage of construction for Phase 1, can be conservatively estimated as the combination of the greatest load from the waste summed with the greatest load from the sub-grade fill from the entire landfill area. This yields a maximum load (q_{max}) of 6,700 psf. Conservatively assuming that this load acts across the entire width (B_{MIN}) of 400 ft, a safety factor (SF) greater than 8.0 is obtained as the ratio of the ultimate bearing capacity to the maximum load (SF= q_{ult} / q_{max}). The actual factor of safety would be considerable greater than that calculated due to the conservative assumptions made in the analysis.

Potential failure surfaces within the soils at the proposed OHD facility would be due to deep-seated slope stability failure mechanisms. Slope stability analysis for the proposed OHD facility in presented in the calculation package entitled *Slope Stability Analyses*.

4. SUMMARY AND CONCLUSIONS

The maximum total pressure (due to subgrade fill plus waste), q_{max}, exerted upon the foundation soil was calculated as 6,700 psf, well below the calculated ultimate bearing capacity, q_{ult}, of the foundation soil of 64,500 psf. Therefore the factor of safety

$\left(SF = \frac{q_{max}}{q_{ult}} \right)$ is greater than 9.5. This calculation is very conservative since the potential bearing capacity failure surface extends into the Ocala Group, which was assumed to be soil rather than limestone.

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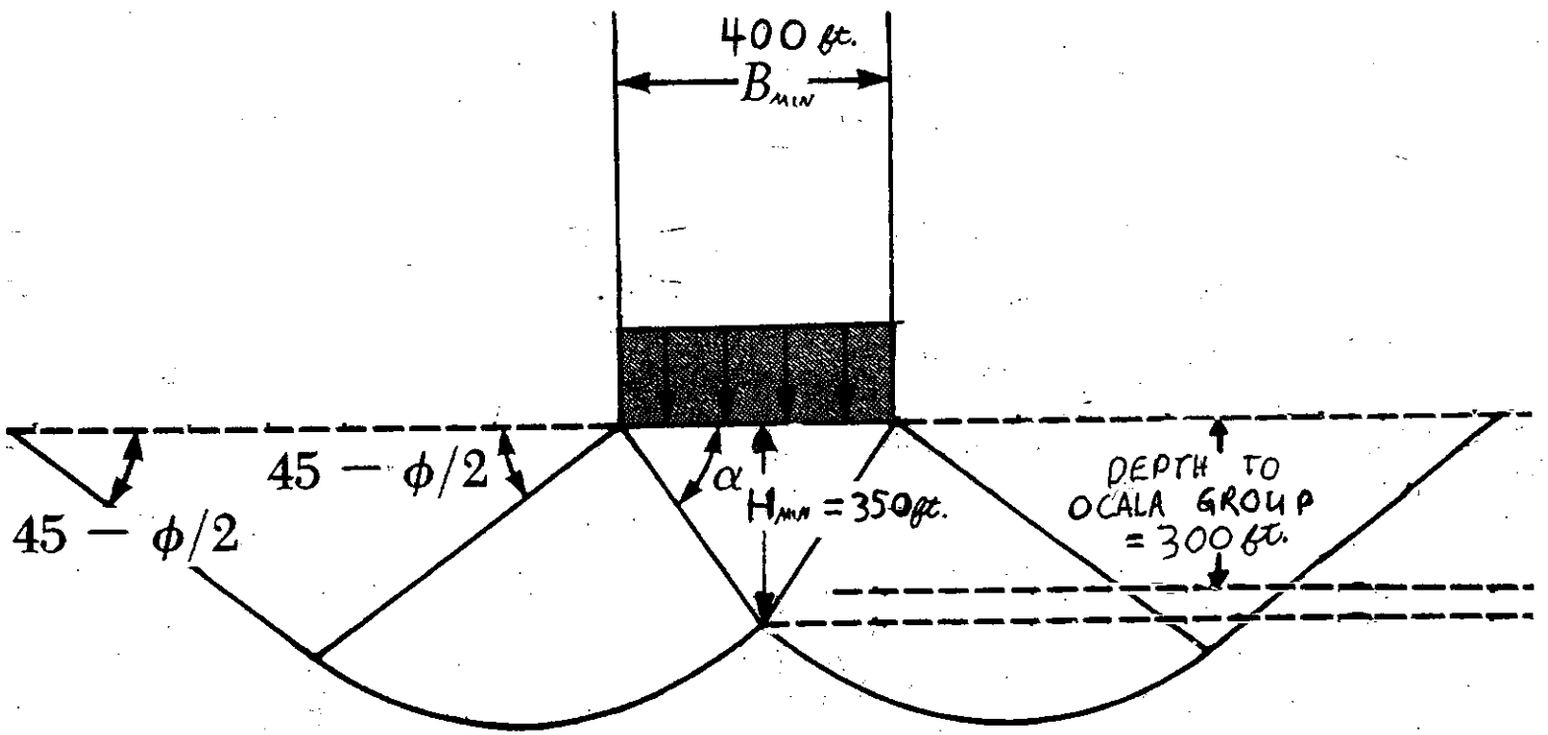


Figure 1. Overall Bearing Capacity, from Das (1990).

D_r = relative density of sand

D_f = depth of foundation

$$B^* = \frac{2BL}{B + L}$$

B = width of foundation

L = length of foundation

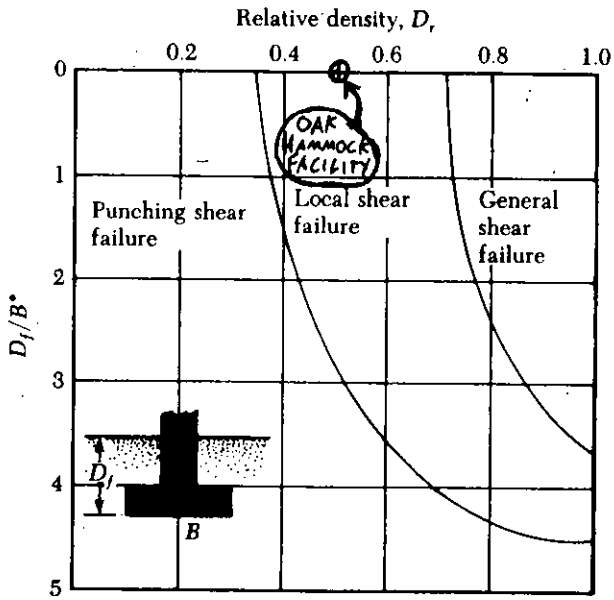


Figure 2. Modes of Foundation Failure in Sand, from Vesic (1973).

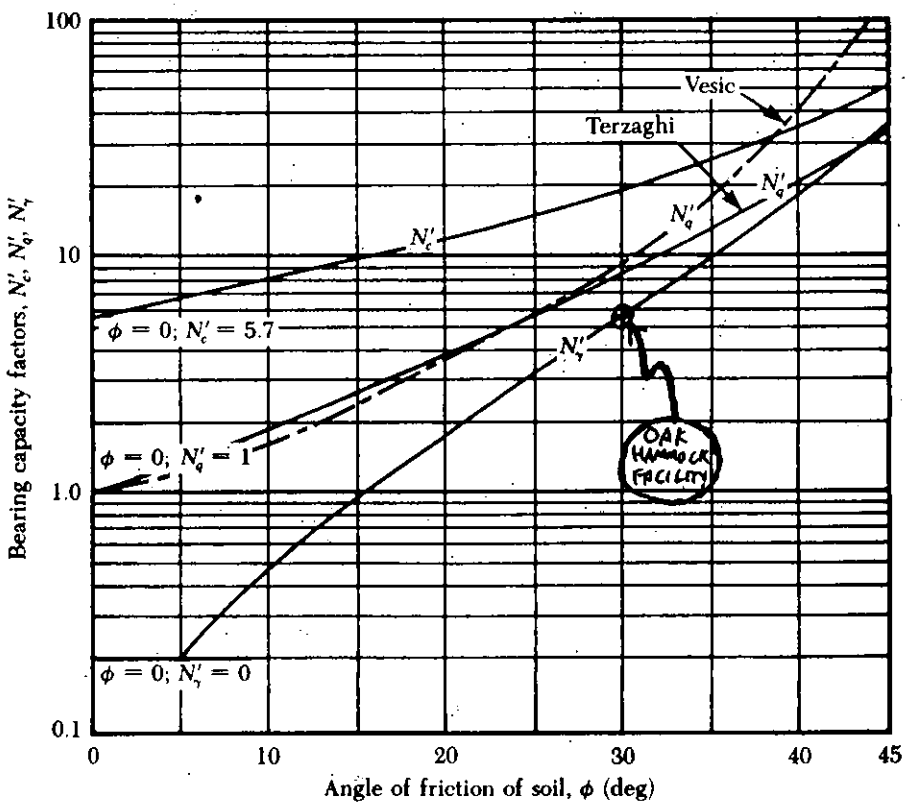


Figure 3. Modified Bearing Capacity Factors, from Das (1990).

SLOPE STABILITY ANALYSES

1. INTRODUCTION
   - 1.1 General
   - 1.2 Purpose of Analyses
   - 1.3 Method of Analyses

2. INPUT PARAMETERS
   - 2.1 Geometry
     - 2.1.1 Subsurface Stratigraphy
     - 2.1.2 Liner System Geometry
     - 2.1.3 Final Configuration Geometry
     - 2.1.2 Perimeter Berm Geometry
     - 2.1.2 Interim Configuration Geometry
   - 2.2 Material Properties
     - 2.2.1 Soil Properties
     - 2.2.2 Geosynthetic Material Properties
     - 2.2.3 Waste Material Properties
   - 2.3 Slope Stability Cases

3. ANALYSIS RESULTS
   - 3.1 Case 1 - Final Configuration Circular Shear Surfaces
   - 3.2 Case 2 - Final Configuration Non-Circular Shear Surfaces
   - 3.3 Case 3 - Perimeter Berm Stability
   - 3.4 Case 4 - Interim Configuration Shear Surfaces

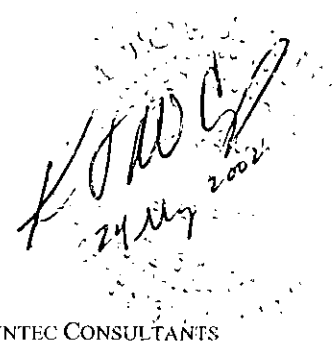
4. SUMMARY AND CONCLUSION

REFERENCES

FIGURES

ATTACHMENTS

Attachment 1: Case 1 UTEXAS3 Computer Data Files
Attachment 2: Case 2 UTEXAS3 Computer Data Files
Attachment 3: Case 3 UTEXAS3 Computer Data Files
Attachment 4: Case 4 UTEXAS3 Computer Data Files



List of Figures

Figure 1 - Liner System Components

Figure 2 - Final Configuration Geometry

Figure 3 - Unreinforced GCL Shear Strength Envelope

Figure 4 - MSW Unit Weight Versus Depth Relationship

Figure 5 - MSW Shear Strength Envelope

Figure 6 - Final Configuration Circular Shear Surfaces

Figure 7 - Final Configuration Non-Circular Shear Surfaces

Figure 8 - Perimeter Berm Circular Shear Surface

Figure 9 - Interim Configuration Shear Surfaces

1. INTRODUCTION

1.1 General

The Oak Hammock Disposal (OHD) facility will involve construction of a landfill approximately 264 acres in site on currently undeveloped land. A double-composite liner system will be utilized in the proposed landfill. Issues related to slope stability are evaluated in this calculation package. Potential slip surfaces may pass through the waste mass, the liner system, or the foundation soils.

1.2 Purpose of the Analysis

The purpose of the analysis is to evaluate the slope stability of the proposed OHD landfill with respect to circular and non-circular shear surfaces. The final waste configuration was evaluated for circular failure surfaces passing through the waste and lower soils and non-circular failure surfaces through the waste and along the liner system interfaces. The outer perimeter berm of the landfill and interim waste slopes were also evaluated for circular shear surfaces. A factor of safety of 1.50 for all permanent slopes and 1.30 for all temporary slopes has been established as minimum criteria in accordance with current state-of-practice for landfill design. The analysis of the final cover system (veneer) slope stability is not included in this section and is presented in a separate calculation package entitled "*Final Cover System Slope Stability Analysis*".

1.3 Method of Analysis

Two-dimensional effective stress stability analyses were performed using the method of slices and the computer program University of Texas Analysis of Slopes, Version 3 (UTEXAS3) [Wright, 1995]. A generalized method that satisfies both force and moment equilibrium and incorporates the parallel side force assumption described by Spencer [Spencer, 1967] is used by the program. UTEXAS3 includes automatic search routines that systematically modify the initial trial shear surface until convergence on the critical surface is achieved.

2. INPUT PARAMETERS

2.1 Geometry

The maximum height of the proposed landfill is approximately 98 feet. The side slopes of the proposed landfill will be 4H:1V. The ground water table is conservatively assumed to be at the ground surface for the analyses.

2.1.1 Subsurface Stratigraphy

A simplified subsurface statigraphy, based on the calculation package entitled "*Geotechnical Investigation Report*" was used for the stability analyses. The simplified subsurface is composed of (from top to bottom):

- loose to medium density, silty sands to approximately 160 feet in depth; and
- an underlying formation, referred to as the Hawthorn Group, consisting primarily of undifferentiated sands, silty sands, and clayey sands with dolomite cementation.

2.1.2 Liner System Geometry

The proposed landfill consists of a double-composite liner system over a compacted subgrade above the foundation soils. A typical cross-section of the liner system is presented in Figure 1. As shown above the compacted subgrade, the liner system consists of, from bottom to top: (i) the secondary geosynthetic clay liner (GCL); (ii) the secondary 60-mil HDPE textured geomembrane; (iii) the secondary geocomposite drainage layer; (iv) the primary GCL; (v) the primary 60-mil HDPE textured geomembrane; (vi) the primary geocomposite drainage layer; and (vi) a liner protective layer. Because the maximum head on the primary geomembrane will be less than 12 inches, a phreatic surface within the landfill was not considered. A perched phreatic surface within the waste was not considered likely to occur due to the sandy nature of initial cover soils and also was not considered.

2.1.3 Final Configuration Geometry

The typical cross-sectional geometry for the final configuration (i.e., after closure) of the OHD facility is shown in Figure 2. As shown, the cross-section consists of, from bottom to top: (i) foundation soils; (ii) a compacted subgrade; (iii) the double-composite liner system; (iv) municipal solid waste (MSW); and (v) the final cover system. The critical cross-section is one in which the slope reaches the full height of 98 feet. The maximum slope at the top of the proposed landfill is 5 percent. It is planned that the facility will reach its maximum height with a 4H:1V sideslope.

2.1.4 Perimeter Berm Geometry

As shown in Figure 2, the perimeter berm is 16 feet high with 3H:1V sideslopes and a 32-foot wide crest. The analysis for the perimeter berm considered the presence of the full height (i.e., 98 feet total height) of material behind the berm.

2.1.5 Interim Configuration Geometry

The interim configuration stability analysis of the landfill evaluated the stability of the MSW during operation. The interim waste slopes are expected to have a maximum slope of 3H:1V. The double-composite liner system has a maximum slope of 2 percent. The total height of the slope was evaluated for 95 feet (instead of 98 feet) because the analysis considered the operation condition (i.e., without the final cover system). Since the location of the landfill interim waste slope varies resulting in a variable subgrade thickness, the soil immediately under the double-composite liner system was conservatively defined as loose to medium density, silty sand.

2.2 Material Properties

2.2.1 Soil Properties

Soil properties used for the stability analyses were selected using the results of the site characterization program as described in the calculation package entitled "*Geotechnical Investigation Report*". For the Hawthorn Group, a unit weight of 115 lb/ft^3 and a peak drained friction angle of 30 degrees were selected, disregarding any possible soil cohesion. For the loose to medium density silty sand layer above the Hawthorn, a unit weight of 115 lb/ft^3 and a peak drained friction angle of 25 degrees were selected. For the outer perimeter berm and the compacted subgrade, a unit weight of 120 lb/ft^3 and a peak drained friction angle of 35 degrees were used. This is consistent with values for compacted silty sand. For the liner protective layer, a unit weight of 100 lb/ft^3 and a peak drained friction angle of 30 degrees were used. As a possible construction alternative, shredded tire chips may be incorporated into the liner protective layer. This possibility is not considered to have an effect on stability calculations because the shear strength of shredded tire chips is comparable to that of MSW [GeoSyntec, 1998]. MSW generally has a peak drained friction angle greater than 30 degrees. Therefore, significant reduction in shear strength parameters was not considered for the liner protective layer. For the final cover system, a unit weight of 120 lb/ft^3 and a peak drained friction angle of 35 degrees were used.

The soil properties are summarized in the following table.

Material	Unit Weight (lb/ft^3)	Cohesion (lb/ft^2)	Friction Angle (degrees)
Hawthorne Formation	115	0	30
Silty Sand	115	0	25
Berm/Compacted Subgrade	120	0	35
Liner Protective Layer	110	0	30
Final Cover System	120	0	35

2.2.2 Geosynthetic Material Properties

The weakest component of the double-composite liner system is the potentially hydrated GCL. Based on the study by Bonaparte et al. (1996) on hydrated unreinforced GCL, the following Mohr-Coulomb strength envelope, shown in Figure 3, was used and is summarized in the following table.

what about other interfaces?

Normal Stress (lb/ft^2)	Shear Stress (lb/ft^2)
0	0
2005	429
5013	787
10025	1143
15038	1594
18000	1908

As shown, the shear strength envelope varies almost linearly with a shear stress range of 429 lb/ft^2 to 1,908 lb/ft^2 at a corresponding normal stress range of 2,005 lb/ft^2 to 18,000 lb/ft^2. Although reinforced GCL is typically used for construction, the shear strength envelope for unreinforced GCL was used in the analyses due to unavailability of strength characteristics for reinforced GCL. This is conservative because reinforced GCL has greater shear strength characteristics.

2.2.3 Waste Material Properties

The waste material which will be disposed in the proposed landfill will primarily consist of MSW. Figure 4 presents the unit weight versus depth relationship used for the analyses [Kavazanjian, 1995]. The unit weight of MSW is a function of the overburden and therefore varies with depth (i.e., the unit weight of MSW increases with depth). As shown, the unit weight varies linearly with depth from 0 to 115 feet (35 meters) with a unit weight variation of 41.4 lb/ft^3 (6.5 kN/m^3) to 66.9 lb/ft^3 (10.5 kN/m^3), respectively. It

varies asymptotically between 115 feet (35 meters) and 328 feet (100 meters) to a unit weight of approximately 83.4 lb/ft^3 (13.1 kN/m^3).

For the slope stability analysis of the final configuration slope geometry, the MSW was divided into sublayers. Each sublayer was given a unit weight corresponding to its midpoint depth. For the slope stability analysis of the interim configuration slope geometry, the MSW was given an overall unit weight value of 54.8 lb/ft^3 (8.6 kN/m^3). This value corresponds to the lower limit of the average range indicated on Figure 4 and was selected because the MSW would be recently placed (i.e., unconsolidated).

The shear strength of the MSW was modeled using a truncated linear Mohr-Coulomb envelope presented in Figure 5 [Kavazanjian, 1995]. As shown, the shear strength envelope has a constant value for shear stress of 500 lb/ft^2 (24 kPa) in the normal stress range of 0 to 625 lb/ft^2 (30 kPa) and transitions to a linear relationship corresponding to drained friction angle of 33 degrees.

2.3 Slope Stability Cases

The following cases of slope stability were considered:

- Case 1 - Final Configuration Circular Shear Surfaces: Circular shear surfaces that pass through the final cover system, the retained MSW, the double-composite liner system, and/or the foundation soils of the final configuration of the proposed landfill.

- Case 2 - Final Configuration Non-Circular Shear Surfaces: Non-circular shear surfaces that pass through the final cover system, the retained MSW, and along the double-composite liner system of the final configuration of the proposed OHD facility.

- Case 3 - Perimeter Berm Stability: Circular shear surfaces that pass through the slope of the perimeter berm.

- Case 4 - Interim Configuration Shear Surfaces: Circular and non-circular shear surfaces that pass through the MSW and/or the double-composite liner system on the 3H:1V interim waste slopes.

3. ANALYSES RESULTS

The results for the circular and non-circular shear surface stability analyses for the final configuration of the proposed landfill are presented in Figures 6 and 7, respectively.

Figure 8 shows the results of the circular shear surface stability analysis for the perimeter berm and Figure 10 shows the results considering the interim waste configuration slope stability. Input data files and results of computations by UTEXAS3 are included as Attachments 1, 2, 3, and 4 for Cases 1, 2, 3, and 4, respectively. The corresponding factors of safety are summarized below:

CASE	SHEAR SURFACE	FACTOR OF SAFETY
1	1-A	3.97
	1-B	3.63
	1-C	4.18
2	2-A	2.17
	2-B	1.89
	2-C	2.07
3	3-A	2.04
4	4-A	2.02
	4-B	1.38

3.1 Case 1 - Final Configuration Circular Shear Surfaces

Figure 6 shows circular shear surfaces through the final configuration of the proposed landfill side slope which illustrate the factors of safety at different positions along the slope. Surface 1-A is a deep-seated circular shear surface originating to the right of the slope crest and exiting at the toe. Surface 1-B is a circular shear surface through the MSW starting near the crest and exiting on the face of the perimeter berm. Surface 1-C is a circular shear surface originating on the slope and terminating near the crest of the perimeter berm. As indicated, all circular shear surfaces have factors of safety greater than 1.50.

3.2 Case 2 - Final Configuration Non-Circular Shear Surfaces

Figure 7 shows non-circular shear surfaces though the double-composite liner system. Surface 2-A is a non-circular shear surface through the double-composite liner system originating on the face of slope. Surface 2-B is a non-circular shear surface through the double-composite liner system originating near the slope crest. Surface 2-C is a non-circular shear surface originating to the right of the slope crest. The most critical non-circular shear surface was the shear surface through the double-composite liner system originating near the slope crest (surface 2-B). As shown, all surfaces have a factor of safety greater than 1.50.

3.3 Case 3 - Perimeter Berm Stability

The perimeter berm of the proposed landfill was analyzed considering the presence of the full height of MSW (i.e., 98 feet total height). Figure 8 shows the most critical shear surface for the berm. The factor of safety is 2.04.

3.4 Case 4 - Interim Configuration Shear Surfaces

Figure 9 shows the most critical circular and non-circular shear surfaces for the interim configuration of the proposed landfill. Surface 4-A is the most critical circular shear surface which originates near the slope crest, passes through the MSW into the foundation silty sand, and terminates left of the slope toe. Surface 4-B is the most critical non-circular shear surface through the liner system originating near the slope crest and exiting at the toe of the slope. As shown, surface 4-B has a factor of safety greater than 1.30. This is a temporary slope maintained during operation and the indicated factor of safety is satisfactory for an interim condition. In addition, waste progression generally proceeds by maintaining benches at an approximate 30-foot height increment. Therefore, the interim overall average slopes during operation are generally much shallower than 3H:1V.

4. SUMMARY AND CONCLUSION

The slope stability analyses showed that the most critical shear surface for the final configuration of the proposed landfill slopes was a non-linear surface through the liner system originating near the crest (surface 2-B). This surface has a calculated factor of safety of 1.89 which is greater than the required minimum factor of safety of 1.50. The stability analysis for the perimeter berm indicated that the critical shear surface (surface 3-A) has a calculated factor of safety of 2.04 which is greater than 1.50. The stability analysis for the interim configuration of the proposed landfill slopes indicated that the calculated factor of safety for the critical shear surface (surface 4-B) is 1.38. This is considered satisfactory because the interim configuration case is a temporary operational consideration and a factor of safety greater than 1.30 is acceptable. In addition, as previously stated, waste progression generally proceeds by maintaining benches and the actual interim average slopes will be shallower than 3H:1V.

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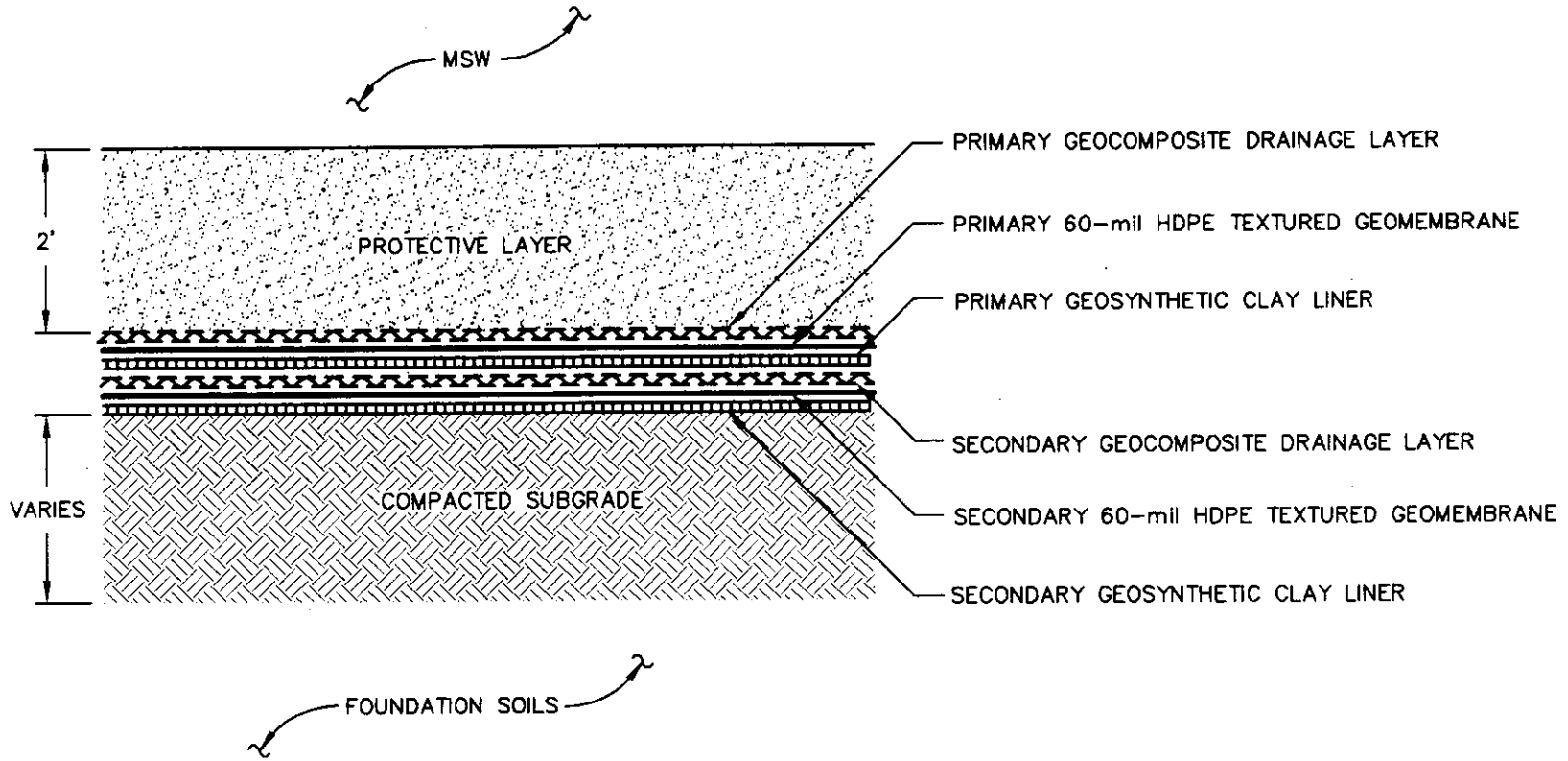
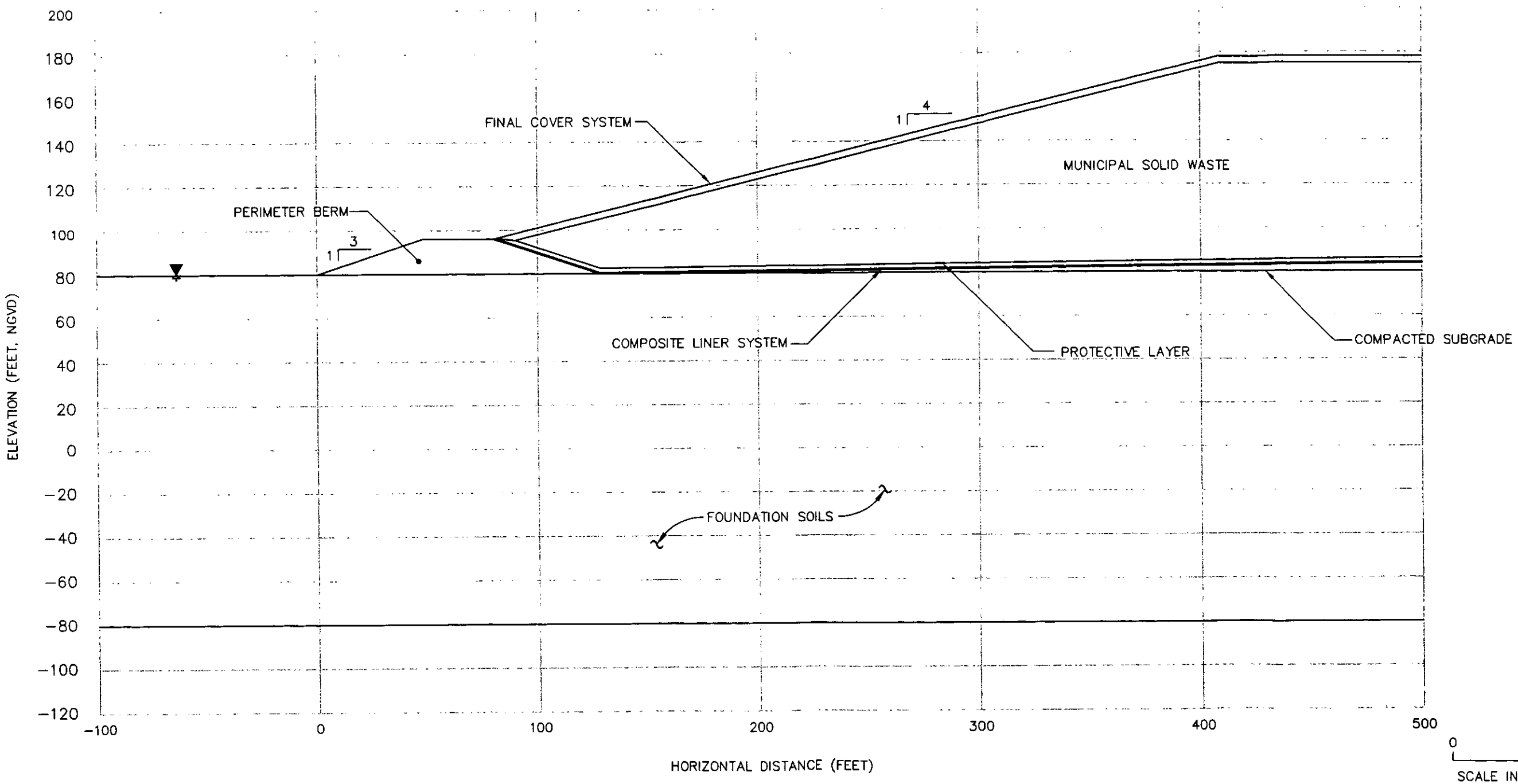


Project: OAK HAMMOCK SOLID WASTE DISPOSAL FACILITY PERMIT APPLICATION			
Figure Title: **LINER SYSTEM COMPONENTS**			
Project Number: FW0400	Date: MARCH 02	File No.: 0400FA018	Figure No.: 1

Consultant / Engineer: GeoSyntec Consultants
14055 RIVEREDGE DRIVE, SUITE 300 · TAMPA, FLORIDA 33637 USA
TEL: (813) 558-0990 · FAX (813) 558-9726



Project	OAK HAMMOCK SOLID WASTE DISPOSAL FACILITY PERMIT APPLICATION
Figure Title	**FINAL CONFIGURATION GEOMETRY**

Project Number	Date	File No.	Figure No.
FW0400	MARCH 02	0400FA030	2

Consultant / Engineer

GeoSyntec Consultants
14055 RIVEREDGE DRIVE, SUITE 300 • TAMPA, FLORIDA 33637 USA
TEL: (813) 558-0900 • FAX: (813) 558-9726

I:\FW0400\FIGURES\0400FA030.dwg, Model, 05/17/2002 10:36:06 AM, rlowry, GeoSyntec Consultants, Tampa

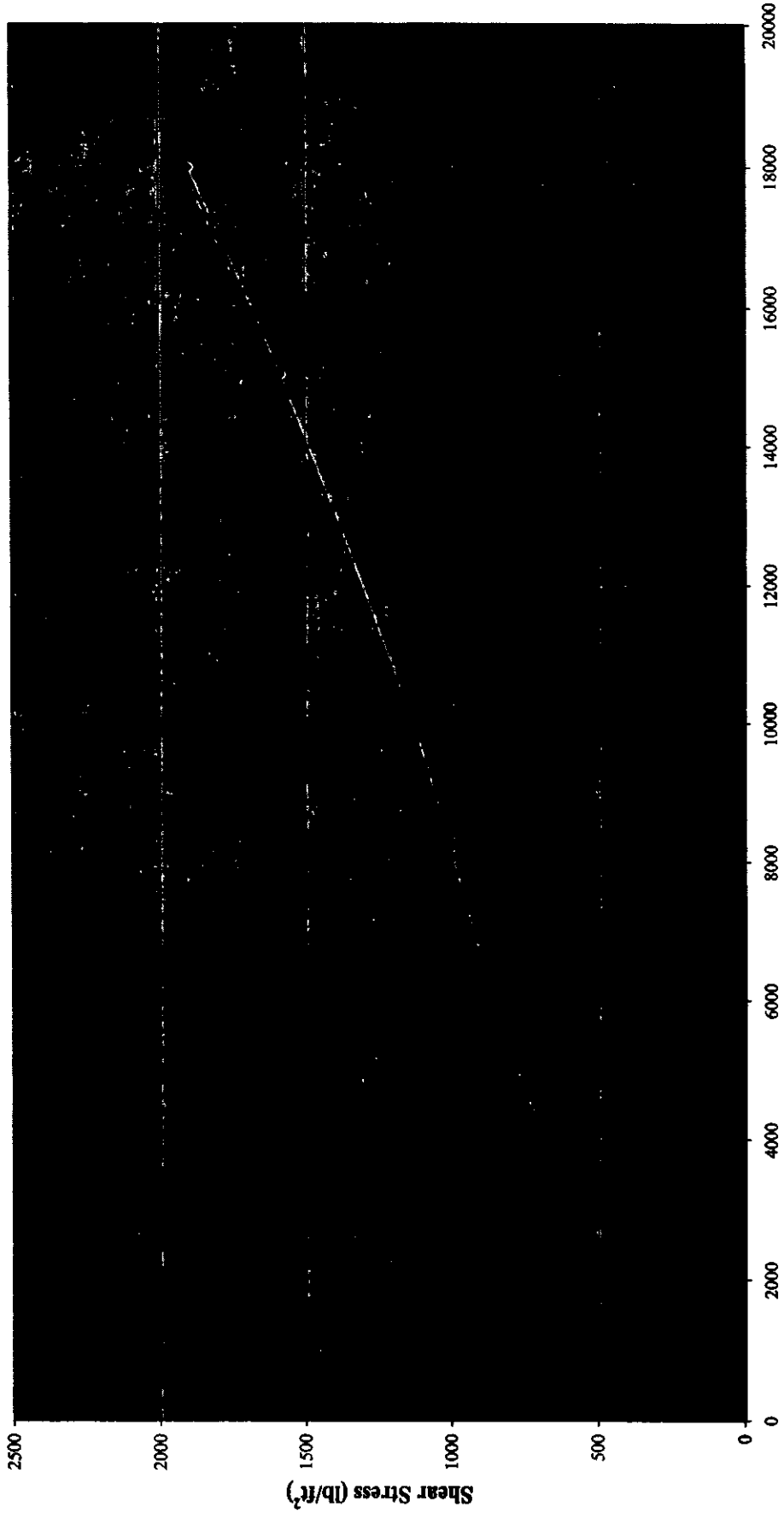


Figure 3
Unreinforced GCL Shear Strength Envelope
[Bonaparte et. al., 1996]

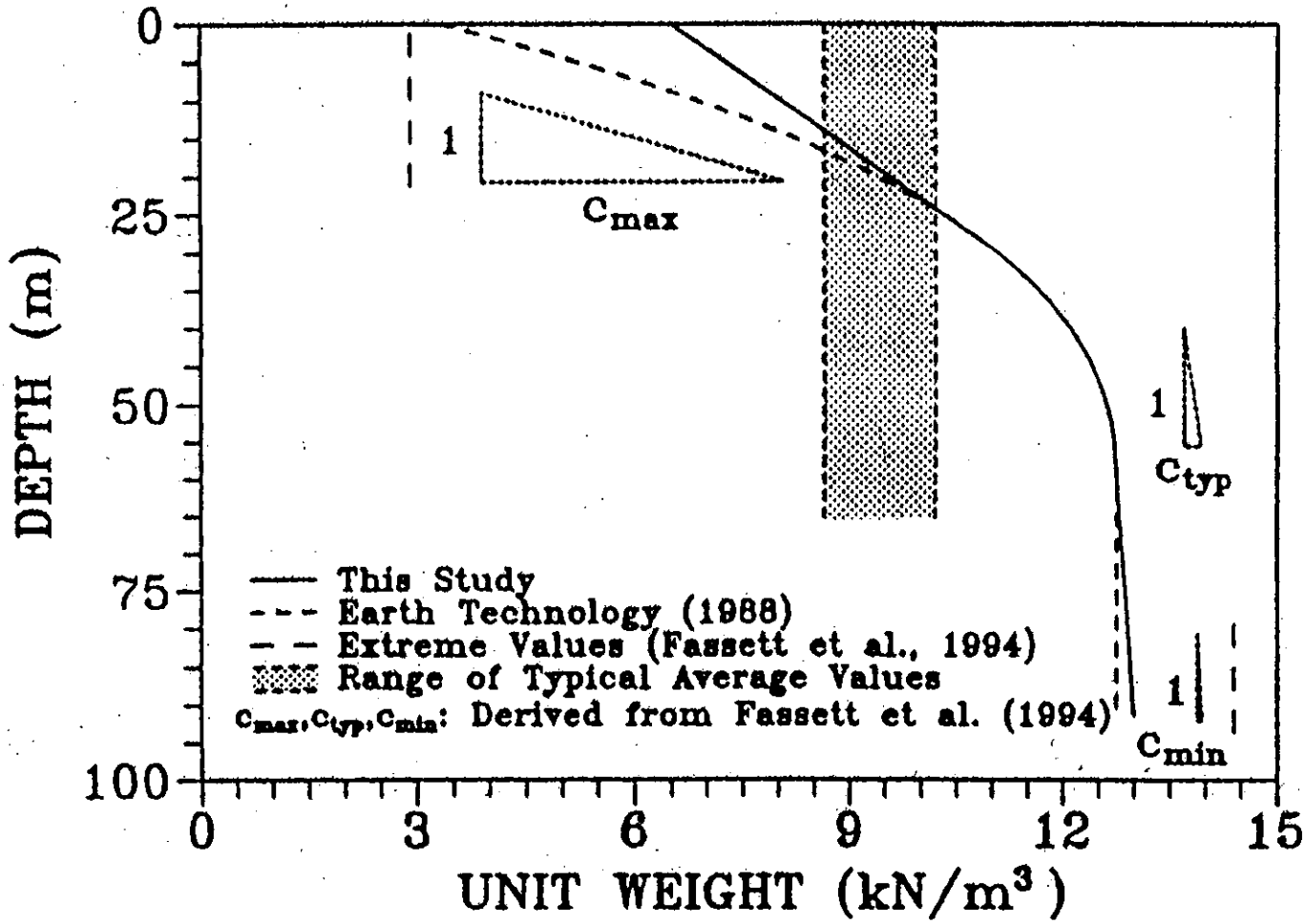


Figure 4 - MSW Unit Weight Versus Depth Relationship [Kavazanjian, 1995]

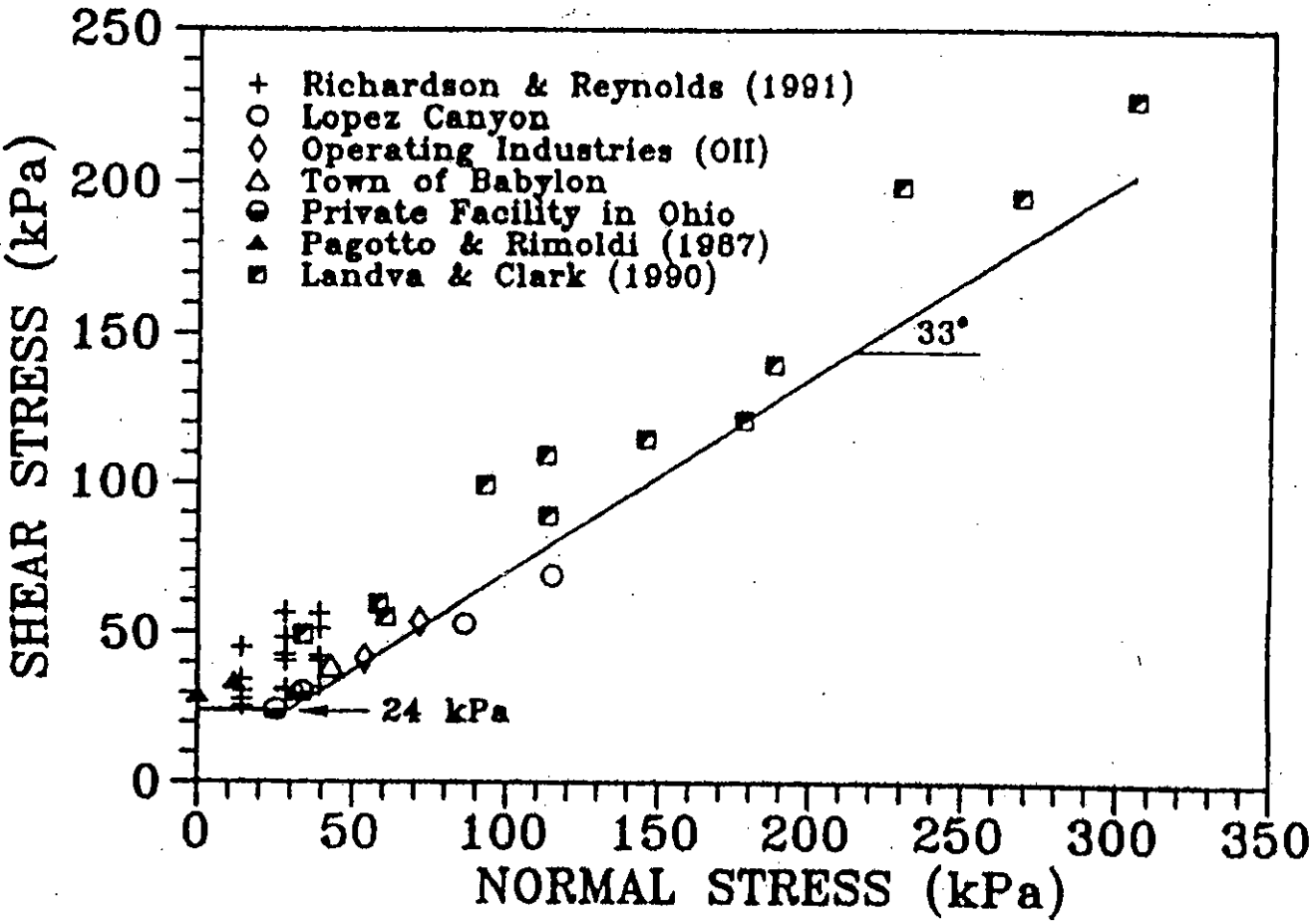
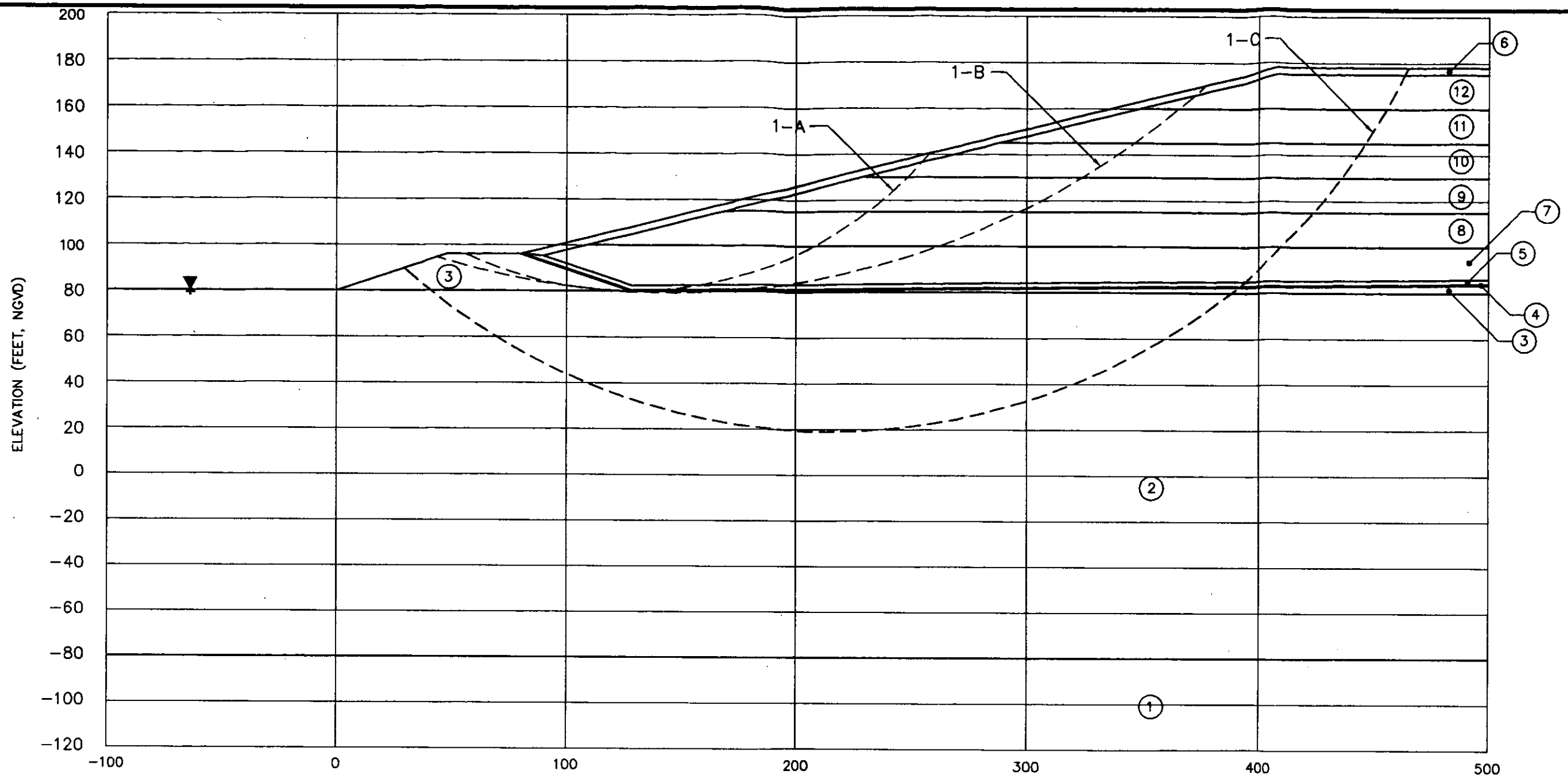


Figure 5 - MSW Shear Strength Envelope [Kavazanjian, 1995]



Layer Number	Total Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (degrees)
1	115	0	30
2	115	0	25
3	120	0	35
4	110	GCL NON-LINEAR ENVELOPE	
5	110	0	35
6	100	0	35
7	67.5	MSW NON-LINEAR ENVELOPE	
8	63.1		
9	58.5		
10	53.4		
11	48.1		
12	22.6		

SURFACE	FACTOR OF SAFETY
1-A	3.97
1-B	3.63
1-C	4.18

STABILITY ANALYSIS – CASE 1

0 50
SCALE IN FEET

Project: OAK HAMMOCK
SOLID WASTE DISPOSAL FACILITY
PERMIT APPLICATION

Figure Title: **FINAL CONFIGURATION CIRCULAR SHEAR SURFACES**

Project Number	Date	File No.	Figure No.
FW0400	MARCH 02	0400FA031	6

Consultant / Engineer
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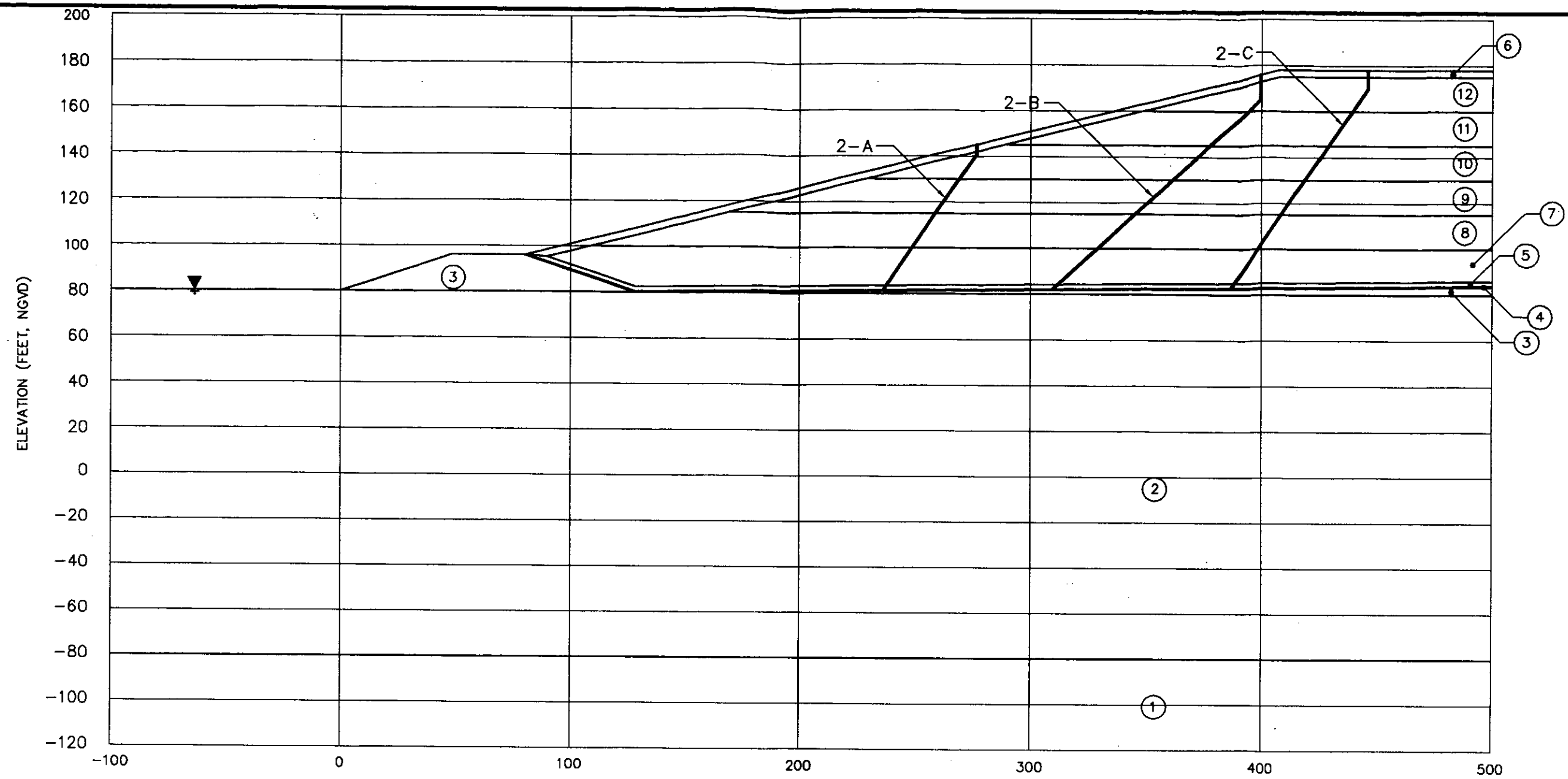


Layer Number	Total Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (degrees)
1	115	0	30
2	115	0	25
3	120	0	35
4	110	GCL NON-LINEAR ENVELOPE	
5	110	0	35
6	100	0	35
7	67.5	MSW NON-LINEAR ENVELOPE	
8	63.1		
9	58.5		
10	53.4		
11	48.1		
12	22.6		

SURFACE	FACTOR OF SAFETY
2−A	2.17
2−B	1.89
2−C	2.07

STABILITY ANALYSIS – CASE 2

0 50
SCALE IN FEET

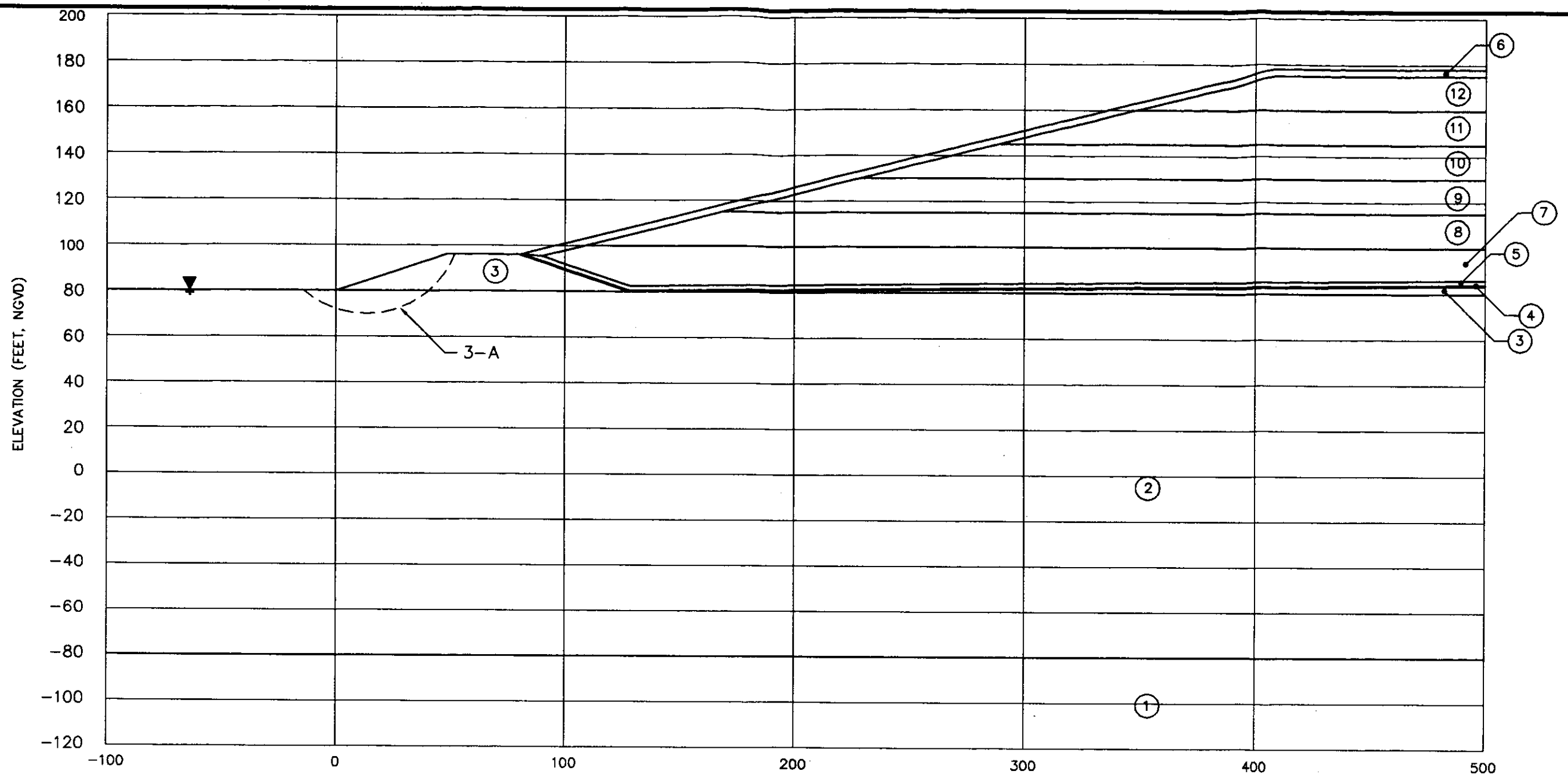
Project: OAK HAMMOCK
SOLID WASTE DISPOSAL FACILITY
PERMIT APPLICATION

Figure Title: **FINAL CONFIGURATION NON-CIRCULAR SHEAR SURFACES**

Project Number	Date	File No.	Figure No.
FW0400	MARCH 02	0400FA032	7

Consultant / Engineer: GeoSyntec Consultants
14055 RIVERDALE DRIVE, SUITE 300 • TAMPA, FLORIDA 33637 USA
TEL: (813) 558-0990 • FAX: (813) 558-9726

J:\Speed,GeoSyntec Consultants, Tampa



Layer Number	Total Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (degrees)
1	115	0	30
2	115	0	25
3	120	0	35
4	110	GCL NON-LINEAR ENVELOPE	
5	110	0	35
6	100	0	35
7	67.5	MSW NON-LINEAR ENVELOPE	
8	63.1		
9	58.5		
10	53.4		
11	48.1		
12	22.6		

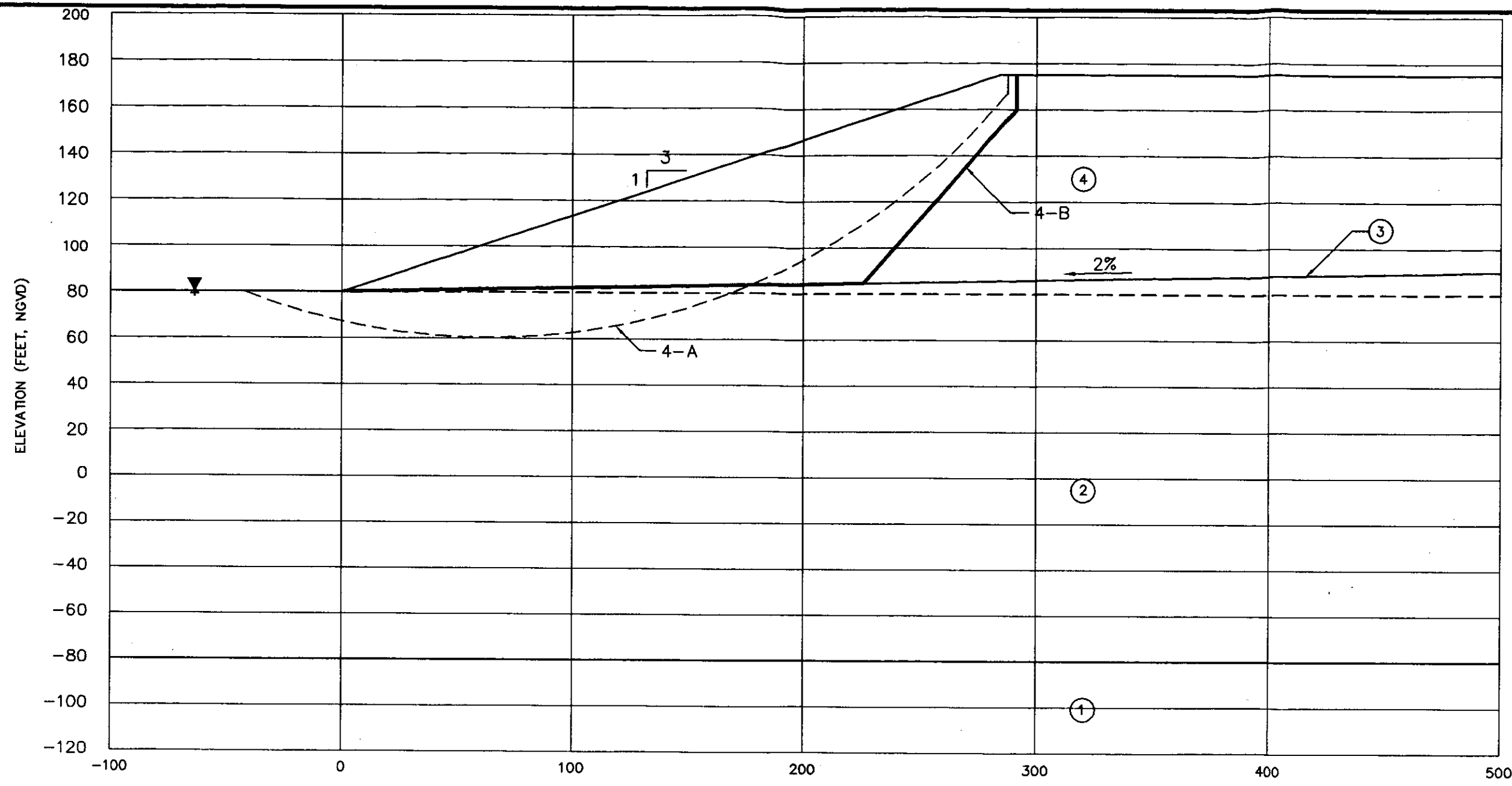
SURFACE	FACTOR OF SAFETY
3-A	2.04

STABILITY ANALYSIS – CASE 3

0 50
SCALE IN FEET

Project: OAK HAMMOCK SOLID WASTE DISPOSAL FACILITY PERMIT APPLICATION			
Figure Title: PERIMETER BERM CIRCULAR SHEAR SURFACE			
Project Number: FW0400	Date: MARCH 02	File No.: 0400FA033	Figure No.: 8
Consultant / Engineer: GeoSyntec Consultants, 14055 Riveredge Drive, Suite 300 • Tampa, Florida 33637 USA, Tel: (813) 558-0990 • Fax: (813) 558-9726			

d: \Speed\GeoSyntec Consultants, Tampa



STABILITY ANALYSIS – CASE 4

Layer Number	Total Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (degrees)
1	115	0	30
2	115	0	25
3	110	GCL NON-LINEAR ENVELOPE	
4	54.8	MSW NON-LINEAR ENVELOPE	

SURFACE	FACTOR OF SAFETY
4-A	2.02
4-B	1.38

0 50

SCALE IN FEET

Project: OAK HAMMOCK SOLID WASTE DISPOSAL FACILITY PERMIT APPLICATION			
Figure Title: **INTERIM CONFIGURATION SHEAR SURFACES**			
Project Number: FW0400	Date: MARCH 02	File No.: 0400FA034	Figure No.: **9**
Consultant / Engineer: GeoSyntec Consultants, 14055 RIVEREDGE DRIVE, SUITE 300 · TAMPA, FLORIDA 33637 USA, TEL: (813) 558-0990 · FAX: (813) 558-9726			

Attachment 1

CASE 1

UTEXAS3 Computer Data Files

Final Configuration Circular Shear Surfaces

- Surface 1-A: File A_CIR.DAT
- Surface 1-B: File B_CIR.DAT
- Surface 1-C: File C_CIR.DAT

A_CIR.DAT

```
HEADING
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
1200 -80

2  2  SAND - MAT. 2
-500 80
1200 80

3  3  BERM - MAT. 3
0 80
48 96
80 96
128 80
1200 80.880

4  4  LINER - MAT. 4
80 96
80.904 96.226
128.079 80.501
1200 91.380

5  5  PROTECTIVE LAYER - MAT. 5
80.904 96.226
85.819 95.362
129.394 82.504
1200 91.380

6  6  FINAL COVER - MAT. 6
80.904 96.226
408.369 178
1200 178

7  7  MSW A - MAT. 7
85.819 95.362
108.369 100
1200 100

8  8  MSW B - MAT. 8
108.369 100
148.369 115
1200 115

9  9  MSW C - MAT. 9
148.369 115
228.369 130
1200 130

10  10  MSW D - MAT. 10
228.369 130
288.369 145
1200 145

11  11  MSW E - MAT. 11
288.369 145
348.369 160
1200 160

12  12  MSW F - MAT. 12
348.369 160
408.369 175
1200 175


MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
2 SAND - MAT. 2
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
3 BERM - MAT. 3
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
4 LINER - MAT. 4
    110
    Nonlinear Mohr-Coulomb
    -1000 0
    0 0
    2005 629
    5013 787
    10025 1143
    15038 1594
    18000 1908

    Piezometric Line
    1
5  PROTECTIVE LAYER - MAT. 5
    110
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
6 FINAL COVER - MAT. 6
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
7 MSW A - MAT. 7
    67.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -1 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
8 MSW B - MAT. 8
    63.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
9 MSW C - MAT. 9
    58.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
10 MSW D - MAT. 10
    53.4
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
11 MSW E - MAT. 11
    48.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
12 MSW F - MAT. 12
    22.6
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1

PIEZOMETRIC LINE DATA
1 62.4 PHREATIC
-500 80
1000 80


ANAlysis/computation data follow -
Circle
127.986 250.156 170.047
PROCEDURE
SPENCER
FACTOR OF SAFETY
3.0
ITE
100
SHORT

Plot
COMpute
```

A_CIR.OUT

```
1       UTEXAS3 - VER. 1.20( -  6/ 4/96 - (C) 1985-1996 S. G. WRIGHT
        One (1) copy licensed to Geosyntec Consultants, Atlanta, GA
        Date:  3:27:2002    Time: 15:54: 1   Input file: a_CIR.DAT


        TABLE NO. 1
        ***************************************
        * COMPUTER PROGRAM DESIGNATION - UTEXAS3 *
        * Originally Coded By Stephen G. Wright  *
        * Version No. 1.20(                      *
        * Last Revision Date  6/ 4/96            *
        * (C) Copyright 1985-1996 S. G. Wright   *
        * All Rights Reserved                    *
        ***************************************

        ********************************************************
        *                                                      *
        *      RESULTS OF COMPUTATIONS PERFORMED USING THIS COMPUTER *
        * PROGRAM SHOULD NOT BE USED FOR DESIGN PURPOSES UNLESS THEY *
        * HAVE BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL *
        * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE *
        * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER *
        * PROGRAM AND MUST HAVE READ ALL DOCUMENTATION FOR THIS *
        * PROGRAM BEFORE ATTEMPTING ITS USE.                   *
        *                                                      *
        *      NEITHER SHINOAK SOFTWARE NOR STEPHEN G. WRIGHT *
        * MAKE OR ASSUME LIABILITY FOR ANY WARRANTIES, EXPRESSED OR *
        * IMPLIED, CONCERNING THE ACCURACY, RELIABILITY, USEFULNESS *
        * OR ADAPTABILITY OF THIS COMPUTER PROGRAM.            *
        *                                                      *
        ********************************************************

1       UTEXAS3 - VER. 1.20( -  6/ 4/96 - (C) 1985-1996 S. G. WRIGHT
        One (1) copy licensed to Geosyntec Consultants, Atlanta, GA
        Date:  3:27:2002    Time: 15:54: 1   Input file: a_CIR.DAT
        OAK HAMMOCK DISPOSAL FACILITY
        STABILITY ANALYSES - 90 FEET
        CIRCULAR; RS 03/18/2002

        TABLE NO. 2
        ************************
        * NEW PROFILE LINE DATA *
        ************************

        PROFILE LINE  1 - MATERIAL TYPE =  1
        HAWTHORNE - MAT. 1

             Point       X             Y

               1      -500.000       -80.000
               2      1200.000       -80.000

        PROFILE LINE  2 - MATERIAL TYPE =  2
        SAND - MAT. 2

             Point       X             Y

               1      -500.000        80.000
               2      1200.000        80.000

        PROFILE LINE  3 - MATERIAL TYPE =  3
        BERM - MAT. 3

             Point       X             Y

               1         .000        80.000
               2        48.000        96.000
               3        80.000        96.000
               4       128.000        80.000
               5      1200.000        80.880

        PROFILE LINE  4 - MATERIAL TYPE =  4
        LINER - MAT. 4

             Point       X             Y

               1        80.000        96.000
               2        80.904        96.226
               3       128.079        80.501
               4      1200.000        81.380

        PROFILE LINE  5 - MATERIAL TYPE =  5
        PROTECTIVE LAYER - MAT. 5

             Point       X             Y

               1        80.904        96.226
               2        88.819        95.362
               3       128.396        82.504
               4      1200.000        83.380

        PROFILE LINE  6 - MATERIAL TYPE =  6
        FINAL COVER - MAT. 6

             Point       X             Y

               1        80.904        96.226
               2       408.369       178.000
               3      1200.000       178.000

        PROFILE LINE  7 - MATERIAL TYPE =  7
        MSW A - MAT. 7

             Point       X             Y

               1        88.819        95.362
               2       108.369       100.000
               3      1200.000       100.000

        PROFILE LINE  8 - MATERIAL TYPE =  8
        MSW B - MAT. 8

             Point       X             Y

               1       108.369       100.000
               2       148.369       115.000
               3      1200.000       115.000

        PROFILE LINE  9 - MATERIAL TYPE =  9
        MSW C - MAT. 9

             Point       X             Y

               1       148.369       115.000
               2       228.369       130.000
               3      1200.000       130.000

        PROFILE LINE 10 - MATERIAL TYPE = 10
        MSW D - MAT. 10

             Point       X             Y

               1       228.369       130.000
               2       288.369       145.000
               3      1200.000       145.000

        PROFILE LINE 11 - MATERIAL TYPE = 11
        MSW E - MAT. 11

             Point       X             Y

               1       288.369       145.000
               2       348.369       160.000
               3      1200.000       160.000

        PROFILE LINE 12 - MATERIAL TYPE = 12
        MSW F - MAT. 12

             Point       X             Y

               1       348.369       160.000
               2       408.369       175.000
               3      1200.000       175.000

        All new profile lines defined - No old lines retained
1       UTEXAS3 - VER. 1.20( -  6/ 4/96 - (C) 1985-1996 S. G. WRIGHT
        One (1) copy licensed to Geosyntec Consultants, Atlanta, GA
        Date:  3:27:2002    Time: 15:54: 1   Input file: a_CIR.DAT
        OAK HAMMOCK DISPOSAL FACILITY
        STABILITY ANALYSES - 90 FEET
        CIRCULAR; RS 03/18/2002

        TABLE NO. 3
        ********************************************************************
        * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ********************************************************************

        DATA FOR MATERIAL TYPE  1
        HAWTHORNE - MAT. 1

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  2
        SAND - MAT. 2

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  3
        BERM - MAT. 3

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  4
        LINER - MAT. 4

             Unit weight of material =  110.000

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point     Normal Stress      Shear Stress

               1          -1000.000              .000
               2               .000              .000
               3            2905.000           425.000
               4            5913.000           747.000
               5           10025.000          1143.000
               6           15038.000          1594.000
               7           18000.000          1908.000

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  5
        PROTECTIVE LAYER - MAT. 5

             Unit weight of material =  110.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  6
        FINAL COVER - MAT. 6

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  7
        MSW A - MAT. 7

             Unit weight of material =   67.500

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point     Normal Stress      Shear Stress

               1          -1000.000              .000
               2             -1.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
               7            835.400           636.867
               8           5221.250          3685.038

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  8
        MSW B - MAT. 8

             Unit weight of material =   65.100

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point     Normal Stress      Shear Stress

               1          -1000.000              .000
               2           -100.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
```

A_CIR.OUT

```
     7          835.400         636.867
     8         5221.250        3485.038

     Pore water pressures defined by piezometric line
     Number of the piezometric line used =  1
     Negative pore pressures set to zero

DATA FOR MATERIAL TYPE  9
MSW C - MAT. 9

     Unit weight of material =    58.500

     ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
     Point      Normal Stress      Shear Stress

       1          -1000.000            .000
       2           -100.000            .000
       3               .000         501.240
       4            208.850         501.240
       5            417.700         501.240
       6            626.550         501.240
       7            835.400         636.867
       8           5221.250        3485.038

     Pore water pressures defined by piezometric line
     Number of the piezometric line used =  1
     Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 10
MSW D - MAT. 10

     Unit weight of material =    53.400

     ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
     Point      Normal Stress      Shear Stress

       1          -1000.000            .000
       2           -100.000            .000
       3               .000         501.240
       4            208.850         501.240
       5            417.700         501.240
       6            626.550         501.240
       7            835.400         636.867
       8           5221.250        3485.038

     Pore water pressures defined by piezometric line
     Number of the piezometric line used =  1
     Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 11
MSW E - MAT. 11

     Unit weight of material =    48.100

     ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
     Point      Normal Stress      Shear Stress

       1          -1000.000            .000
       2           -100.000            .000
       3               .000         501.240
       4            208.850         501.240
       5            417.700         501.240
       6            626.550         501.240
       7            835.400         636.867
       8           5221.250        3485.038

     Pore water pressures defined by piezometric line
     Number of the piezometric line used =  1
     Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 12
MSW F - MAT. 12

     Unit weight of material =    22.600

     ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
     Point      Normal Stress      Shear Stress

       1          -1000.000            .000
       2           -100.000            .000
       3               .000         501.240
       4            208.850         501.240
       5            417.700         501.240
       6            626.550         501.240
       7            835.400         636.867
       8           5221.250        3485.038

     Pore water pressures defined by piezometric line
     Number of the piezometric line used =  1
     Negative pore pressures set to zero

All new material properties defined - No old data retained
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO.  5
*******************************************************************
* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
*******************************************************************

Line
 No.    Point       X            Y

  1 - Unit weight of water =   62.40   PHREATIC
  1        1    -500.000      80.000   PHREATIC
  1        2    1000.000      80.000   PHREATIC

All new piezometric lines defined - No old lines retained
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 15
********************************
* NEW ANALYSIS/COMPUTATION DATA *
********************************

Circular Shear Surface(s)

Computations Performed for Single Shear Surface

Center Coordinates for Center of Circle -
                                          X =      127.986
                                          Y =      250.156
                                          Radius =      170.047

Procedure used to compute the factor of safety: SPENCER

Initial trial estimate for the factor of safety =   3.000

Maximum number of iterations allowed for
calculating the factor of safety =  100

Short form of output will be used for search

-------------------------------------------------------------------

THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

Initial trial estimate for side force inclination =  15.000 degrees
(Applicable to Spencer's procedure only)

Allowed force imbalance for convergence =      100.000

Allowed moment imbalance for convergence =      100.000

Maximum subtended angle to be used for subdivision of the
circle into slices =   3.00 degrees

Depth of crack =          .000

Depth of water in crack =          .000

Unit weight of water in crack =    62.400

Seismic coefficient =   .000

Conventional (single-stage) computations to be performed
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 16
***************************
* NEW SLOPE GEOMETRY DATA *
***************************

NOTE - NO DATA WERE INPUT, SLOPE GEOMETRY DATA
WERE GENERATED BY THE PROGRAM

Slope Coordinates -

     Point        X            Y

        1    -500.000       80.000
        2        .000       80.000
        3      48.000       96.000
        4      80.000       96.000
        5      80.904       96.226
        6     408.369      178.000
        7    1200.000      178.000
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 26
*************************************************************
*  Coordinate, Weight, Strength and Pore Water Pressure     *
*  Information for Individual Slices for Conventional       *
*  Computations or First Stage of Multi-Stage Computations. *
*  (Information is for the Critical Shear Surface in the    *
*  Case of an Automatic Search.)                            *
*************************************************************

Slice                     Slice   Matl.              Friction    Pore
 No.      X        Y      Weight  Type   Cohesion     Angle    Pressure

         56.2     96.0
   1     60.3     94.2    1737.1    3        .00      35.00         .0
         64.4     92.5
   2     68.5     90.9    5106.2    3        .00      35.00         .0
         72.7     89.3
   3     76.4     88.2    6034.6    3        .00      35.00         .0
         80.0     87.0
   4     80.5     86.9     598.1    3        .00      35.00         .0
         80.9     86.8
   5     85.2     85.6   11927.7    3        .00      35.00         .0
         89.5     84.5
   6     89.7     84.5     491.9    3        .00      35.00         .0
         89.8     84.4
   7     94.2     83.6   15334.3    3        .00      35.00         .0
         98.5     82.7
   8    102.9     82.0   17053.4    3        .00      35.00         .0
        107.3     81.4
   9    107.9     81.3    2059.1    3        .00      35.00         .0
        108.4     81.2
  10    112.8     80.8   18321.7    3        .00      35.00         .0
        117.2     80.4
  11    121.7     80.3   18844.3    3        .00      35.00         .0
        126.1     80.1
  12    126.9     80.1    3278.3    3        .00      35.00         .0
        127.7     80.1
  13    127.8     80.1     664.3    4  NONLINEAR ENVELOPE         .0
        128.0     80.1
  14    128.0     80.1      29.6    4  NONLINEAR ENVELOPE         .0
        128.0     80.1
  15    128.0     80.1     168.2    4  NONLINEAR ENVELOPE         .0
        128.1     80.1
  16    128.2     80.1     670.8    4  NONLINEAR ENVELOPE         .0
        128.4     80.1
  17    132.8     80.2   19468.3    4  NONLINEAR ENVELOPE         .0
        137.3     80.4
  18    139.3     80.5    9207.3    4  NONLINEAR ENVELOPE         .0
        141.4     80.6
  19    145.8     81.1   20379.9    5        .00      35.00         .0
        150.2     81.6
  20    154.2     82.2   18400.9    5        .00      35.00         .0
        158.2     82.8
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 26
*************************************************************
*  Coordinate, Weight, Strength and Pore Water Pressure     *
*  Information for Individual Slices for Conventional       *
*  Computations or First Stage of Multi-Stage Computations. *
*  (Information is for the Critical Shear Surface in the    *
*  Case of an Automatic Search.)                            *
*************************************************************

Slice                     Slice   Matl.              Friction    Pore
 No.      X        Y      Weight  Type   Cohesion     Angle    Pressure

        158.2     82.8
  21    162.5     83.7   20240.7    7  NONLINEAR ENVELOPE         .0
        166.9     84.6
  22    167.6     84.8    3494.7    7  NONLINEAR ENVELOPE         .0
        168.4     85.0
  23    172.7     86.1   19864.3    7  NONLINEAR ENVELOPE         .0
        177.0     87.3
  24    181.2     88.7   19142.5    7  NONLINEAR ENVELOPE         .0
        185.4     90.1
  25    189.6     91.7   18116.9    7  NONLINEAR ENVELOPE         .0
        193.7     93.3
  26    197.8     95.2   16810.9    7  NONLINEAR ENVELOPE         .0
        201.8     97.0
  27    204.8     98.5   11617.9    7  NONLINEAR ENVELOPE         .0
        207.8    100.0
  28    211.7    102.2   14011.5    8  NONLINEAR ENVELOPE         .0
        215.5    104.4
```

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29	219.9	106.8	12242.2	8	NONLINEAR ENVELOPE		.0
	223.1	109.2					
30	225.7	111.0	7737.5	8	NONLINEAR ENVELOPE		.0
	228.4	112.9					
31	229.8	113.9	3733.5	8	NONLINEAR ENVELOPE		.0
	231.2	115.0					
32	234.6	117.8	8067.4	9	NONLINEAR ENVELOPE		.0
	238.1	120.6					
33	241.4	123.6	6079.3	9	NONLINEAR ENVELOPE		.0
	244.7	126.5					
34	246.5	128.3	2533.6	9	NONLINEAR ENVELOPE		.0
	248.3	130.0					
35	251.4	133.2	3061.1	10	NONLINEAR ENVELOPE		.0
	254.4	136.5					
36	254.5	136.5	23.3	10	NONLINEAR ENVELOPE		.0
	254.5	136.5					
37	256.2	138.5	618.6	6	.00	35.00	.0
	257.9	140.4					

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 27
****
* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
1	60.3	0.	95.1	0.	0.	.0	.0
2	68.5	0.	93.4	0.	0.	.0	.0
3	76.4	0.	92.1	0.	0.	.0	.0
4	80.5	0.	91.5	0.	0.	.0	.0
5	85.2	0.	91.4	0.	0.	.0	.0
6	89.7	0.	91.4	0.	0.	.0	.0
7	94.2	0.	91.3	0.	0.	.0	.0
8	102.9	0.	91.3	0.	0.	.0	.0
9	107.9	0.	91.5	0.	0.	.0	.0
10	112.8	0.	91.9	0.	0.	.0	.0
11	121.7	0.	93.1	0.	0.	.0	.0
12	126.9	0.	94.0	0.	0.	.0	.0
13	127.8	0.	94.2	0.	0.	.0	.0
14	128.0	0.	94.3	0.	0.	.0	.0
15	128.0	0.	94.3	0.	0.	.0	.0
16	128.2	0.	94.3	0.	0.	.0	.0
17	132.8	0.	95.0	0.	0.	.0	.0
18	139.3	0.	95.9	0.	0.	.0	.0
19	145.8	0.	97.2	0.	0.	.0	.0
20	154.2	0.	99.0	0.	0.	.0	.0
21	162.5	0.	101.0	0.	0.	.0	.0
22	167.6	0.	102.3	0.	0.	.0	.0
23	172.7	0.	103.5	0.	0.	.0	.0
24	181.2	0.	105.8	0.	0.	.0	.0
25	189.6	0.	108.4	0.	0.	.0	.0
26	197.8	0.	111.2	0.	0.	.0	.0
27	204.8	0.	113.8	0.	0.	.0	.0
28	211.7	0.	116.5	0.	0.	.0	.0
29	219.3	0.	119.8	0.	0.	.0	.0
30	225.7	0.	122.8	0.	0.	.0	.0
31	229.8	0.	124.8	0.	0.	.0	.0
32	234.6	0.	127.3	0.	0.	.0	.0
33	241.4	0.	130.9	0.	0.	.0	.0
34	246.5	0.	133.8	0.	0.	.0	.0
35	251.4	0.	136.5	0.	0.	.0	.0
36	254.5	0.	138.0	0.	0.	.0	.0
37	256.2	0.	138.2	0.	0.	.0	.0

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	25.0000	-.2360E+05	.1850E+07		
First-order corrections to F and THETA					.335E+00	-.169E+02
Values factored by .500E+00 - Deltas too large					.170E+00	-.859E+01
2	3.17049	6.4056	-.1238E+05	.5919E+06		
First-order corrections to F and THETA					.724E+00	.722E+01
Values factored by .690E+00 - Deltas too large					.500E+00	.498E+01
3	3.67849	11.3884	-.5578E+04	.4110E+06		
First-order corrections to F and THETA					.263E+00	-.113E+01
Second-order correction - Iteration 1					.288E+00	-.113E+01
Second-order correction - Iteration 2					.288E+00	-.113E+01
4	3.95887	10.2609	.3783E+02	-.1045E+05		
First-order corrections to F and THETA					.832E-02	.201E+00
Second-order correction - Iteration 1					.834E-02	.201E+00
Second-order correction - Iteration 2					.834E-02	.201E+00
5	3.96421	10.4623	.1440E-01	-.3620E+01		
First-order corrections to F and THETA					.170E-06	.282E-04

For trial number 2 with a nonlinear strength envelope the maximum
percent change in shear strength was 9.709 - at slice 33
Material: 9 Normal stress: 709.550
Strength from previous trial: 501.240
Estimated strength for new trial: 555.140

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.96421	10.4623	-.1269E+03	.1001E+05		
First-order corrections to F and THETA					.732E-02	-.235E-01
Second-order correction - Iteration 1					.733E-02	-.234E-01
Second-order correction - Iteration 2					.734E-02	-.234E-01
3	3.97154	10.4390	.2686E-02	-.7143E-01		
First-order corrections to F and THETA					-.211E-06	-.105E-05

For trial number 3 with a nonlinear strength envelope the maximum
percent change in shear strength was .000 - at slice 33
Material: 9 Normal stress: 702.308
Strength from previous trial: 550.437
Estimated strength for new trial: 550.437

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.97154	10.4390	.2686E-02	-.7143E-01		
First-order corrections to F and THETA					-.211E-06	-.105E-05

Factor of Safety - - - - - - - - - 3.972
Side Force Inclination - - - - - - 10.44
Number of Iterations - - - - - - - 1

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 36
****
* Final Results for Stresses Along the Shear Surface *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 3.972 Side Force Inclination = 10.44 Degrees

VALUES AT CENTER OF BASE OF SLICE

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
1	60.3	94.2	262.3	262.3	46.2
2	68.5	90.9	735.0	735.0	129.6
3	76.4	88.2	1100.5	1100.5	194.0
4	80.5	86.9	1280.3	1280.3	225.7
5	85.2	85.6	1584.3	1584.3	279.3
6	89.7	84.5	1861.6	1861.6	328.2
7	94.2	83.6	1965.2	1965.2	346.5
8	102.9	82.0	2119.3	2119.3	373.6
9	107.9	81.3	2184.2	2184.2	385.1
10	112.8	80.8	2209.5	2209.5	389.5
11	121.7	80.3	2220.0	2220.0	391.4
12	126.9	80.1	2206.1	2206.1	389.0
13	127.8	80.1	2150.1	2150.1	379.1
14	128.0	80.1	2149.9	2149.9	379.1
15	128.0	80.1	2149.8	2149.8	379.1
16	128.2	80.1	2149.5	2149.5	379.0
17	132.8	80.2	2193.8	2193.8	386.7
18	139.3	80.5	2249.4	2249.4	396.5
19	145.8	81.1	2289.3	2289.3	403.6
20	154.2	82.2	2264.5	2264.5	399.2
21	162.5	83.7	2227.8	2227.8	392.8
22	167.6	84.8	2210.3	2210.3	389.7
23	172.7	86.1	2170.3	2170.3	382.6
24	181.2	88.7	2084.4	2084.4	367.4
25	189.6	91.7	1971.4	1971.4	346.1
26	197.8	95.2	1832.8	1832.8	321.4
27	204.8	98.5	1693.4	1693.4	300.6
28	211.7	102.2	1562.2	1562.2	275.9
29	219.3	106.8	1359.4	1359.4	244.0
30	225.7	111.0	1188.4	1188.4	215.1
31	229.8	113.9	1069.5	1069.5	198.6
32	234.6	117.8	939.1	939.1	174.0
33	241.4	123.6	702.3	702.3	134.6
34	246.5	128.3	517.3	517.3	126.2
35	251.4	133.2	326.5	326.5	126.2
36	254.5	136.5	207.0	207.0	126.2
37	256.2	138.5	133.2	133.2	23.9

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .01 (= .105E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .02 (= .210E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = .64 (= .641E+00)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .262E-02)
SHOULD NOT EXCEED .100E+03

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 39
****
* Final Results for Side Forces and Stresses Between Slices. *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 3.972 Side Force Inclination = 10.44 Degrees

VALUES AT RIGHT SIDE OF SLICE

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	64.4	1330.	95.0	.712	838.4	-100.7
2	72.7	4755.	93.0	.583	926.9	479.7
3	80.0	8790.	91.6	.536	1171.0	756.3
4	80.9	9340.	91.7	.522	1100.9	859.2
5	89.5	15396.	90.6	.438	688.4	1496.3
6	89.8	15627.	90.6	.436	677.8	1517.0
7	98.5	22238.	89.8	.399	482.2	1954.1
8	107.3	28810.	89.6	.383	390.1	2213.3
9	108.4	29079.	89.6	.382	382.5	2236.3
10	117.2	34378.	89.7	.374	333.7	2387.4
11	126.1	38663.	90.2	.370	302.1	2473.2
12	127.7	39294.	90.4	.369	297.5	2483.0
13	128.0	39331.	90.4	.370	302.8	2472.5
14	128.0	39332.	90.4	.370	303.1	2472.0
15	128.1	39341.	90.4	.370	304.4	2469.4
16	128.4	39376.	90.5	.371	309.6	2458.9
17	137.3	39835.	92.0	.388	431.0	2188.8
18	141.4	39693.	92.8	.396	476.7	2067.4
19	150.2	41156.	94.0	.388	414.7	2117.6
20	158.2	41528.	95.3	.383	368.6	2128.5
21	166.9	40871.	97.1	.378	327.0	2103.2
22	169.4	40651.	97.5	.378	320.5	2095.6
23	177.0	38794.	99.6	.374	285.7	2033.7
24	185.4	36033.	102.1	.372	255.3	1963.5
25	193.7	32479.	104.8	.370	230.5	1827.5
26	201.6	28238.	107.9	.369	206.2	1680.8
27	207.8	24960.	110.3	.369	186.9	1571.9
28	215.5	20261.	113.8	.368	164.8	1400.2
29	223.1	15530.	117.5	.369	145.0	1209.1
30	228.4	12195.	120.6	.371	133.1	1057.3
31	231.2	10479.	122.0	.372	128.1	971.1

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32	238.1	6485.	126.2	.379	116.5	739.7
33	244.7	3177.	130.9	.409	133.5	455.1
34	248.3	1805.	133.7	.446	174.4	266.6
35	254.4	445.	138.1	.537	174.6	110.6
36	254.5	442.	138.2	.536	173.8	112.2
37	257.9	0.	247.2	ABOVE	.0	.0

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .01 (= .105E-01)
SHOULD NOT EXCEED .100E+00)
SUM OF FORCES IN HORIZONTAL DIRECTION = .02 (= .210E-01)
SHOULD NOT EXCEED .10CE-01
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = .44 (= .441E-00)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .262E-02)
SHOULD NOT EXCEED .100E+01

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED

B_CIR.DAT

```
HEADING
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/28/2002
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
1200 -80

2  2  SAND - MAT. 2
-500 80
1200 80

3  3  BERM - MAT. 3
0 80
48 96
60 96
128 80
1200 90.880

4  4  LINER - MAT. 4
80 96
80.904 96.226
128.079 80.501
1200 91.380

5  5  PROTECTIVE LAYER - MAT. 5
80.904 96.226
89.819 95.362
128.394 82.504
1200 93.380

6  6  FINAL COVER - MAT. 6
80.904 96.226
408.369 176
1200 176

7  7  MSW A - MAT. 7
89.819 95.362
168.369 100
1200 100

8  8  MSW B - MAT. 8
108.369 100
168.369 135
1200 115

9  9  MSW C - MAT. 9
168.369 115
228.369 130
1200 130

10  10  MSW D - MAT. 10
228.369 130
288.369 145
1200 145

11  11  MSW E - MAT. 11
288.369 145
348.369 160
1200 160

12  12  MSW F - MAT. 12
348.369 160
408.369 175
1200 175


MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
2 SAND - MAT. 2
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
3 BERM - MAT. 3
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
4 LINER - MAT. 4
    110
    Nonlinear Mohr-Coulomb
    -1000 0
    0 0
    2005 429
    5013 787
    10025 1143
    15038 1584
    18000 1908

    Piezometric Line
    1
5  PROTECTIVE LAYER - MAT. 5
    110
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
6 FINAL COVER - MAT. 6
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
7 MSW A - MAT. 7
    67.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -1 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
8 MSW B - MAT. 8
    63.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
9 MSW C - MAT. 9
    58.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
10 MSW D - MAT. 10
    53.4
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
11 MSW E - MAT. 11
    48.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
12 MSW F - MAT. 12
    22.6
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1

PIEZOMETRIC LINE DATA
1 62.4 PHREATIC
-500 80
1000 80


Analysis/computation data follow -
Circle
144.579 422.318 343.868
PROCEDURE
SPENCER
FACTOR OF SAFETY
3.0
ITE
100
SHORT

Plot
COMpute
```

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```
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        TABLE NO. 1
        ****************************************
        * COMPUTER PROGRAM DESIGNATION - UTEXAS3 *
        * Originally Coded By Stephen G. Wright  *
        * Version No. 1.206                      *
        * Last Revision Date  6/ 4/96            *
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        * All Rights Reserved                    *
        ****************************************


        ************************************************************
        *                                                          *
        *      RESULTS OF COMPUTATIONS PERFORMED USING THIS COMPUTER *
        * PROGRAM SHOULD NOT BE USED FOR DESIGN PURPOSES UNLESS THEY *
        * HAVE BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL   *
        * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE   *
        * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER  *
        * PROGRAM AND MUST HAVE READ ALL DOCUMENTATION FOR THIS      *
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        *                                                          *
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        *                                                          *
        ************************************************************

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        STABILITY ANALYSES - 98 FEET
        CIRCULAR; RS 03/18/2002

        TABLE NO. 2
        ************************
        * NEW PROFILE LINE DATA *
        ************************

        PROFILE LINE  1 - MATERIAL TYPE =  1
        HAWTHORNE - MAT. 1

             Point       X             Y

               1      -500.000       -80.000
               2      1200.000       -80.000

        PROFILE LINE  2 - MATERIAL TYPE =  2
        SAND - MAT. 2

             Point       X             Y

               1      -500.000        80.000
               2      1200.000        80.000

        PROFILE LINE  3 - MATERIAL TYPE =  3
        BERM - MAT. 3

             Point       X             Y

               1          .000        80.000
               2        48.000        96.000
               3        80.000        96.000
               4       128.000        80.000
               5      1200.000        50.880

        PROFILE LINE  4 - MATERIAL TYPE =  4
        LINER - MAT. 4

             Point       X             Y

               1        80.000        96.000
               2        80.904        96.226
               3       128.079        80.501
               4      1200.000        91.380

        PROFILE LINE  5 - MATERIAL TYPE =  5
        PROTECTIVE LAYER - MAT. 5

             Point       X             Y

               1        80.904        96.226
               2        99.819        95.362
               3       128.394        83.504
               4      1200.000        93.380

        PROFILE LINE  6 - MATERIAL TYPE =  6
        FINAL COVER - MAT. 6

             Point       X             Y

               1        80.904        96.226
               2       408.369       178.000
               3      1200.000       178.000

        PROFILE LINE  7 - MATERIAL TYPE =  7
        MSW A - MAT. 7

             Point       X             Y

               1        99.819        95.362
               2       108.369       100.000
               3      1200.000       100.000

        PROFILE LINE  8 - MATERIAL TYPE =  8
        MSW B - MAT. 8

             Point       X             Y

               1       108.369       100.000
               2       168.369       115.000
               3      1200.000       115.000

        PROFILE LINE  9 - MATERIAL TYPE =  9
        MSW C - MAT. 9

             Point       X             Y

               1       168.369       115.000
               2       228.369       130.000
               3      1200.000       130.000

        PROFILE LINE 10 - MATERIAL TYPE = 10
        MSW D - MAT. 10

             Point       X             Y

               1       228.369       130.000
               2       288.369       145.000
               3      1200.000       145.000

        PROFILE LINE 11 - MATERIAL TYPE = 11
        MSW E - MAT. 11

             Point       X             Y

               1       288.369       145.000
               2       348.369       160.000
               3      1200.000       160.000

        PROFILE LINE 12 - MATERIAL TYPE = 12
        MSW F - MAT. 12

             Point       X             Y

               1       348.369       160.000
               2       408.369       175.000
               3      1200.000       175.000

        All new profile lines defined - No old lines retained
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        STABILITY ANALYSES - 98 FEET
        CIRCULAR; RS 03/18/2002

        TABLE NO. 3
        ************************************************************
        * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ************************************************************

        DATA FOR MATERIAL TYPE  1
        HAWTHORNE - MAT. 1

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  2
        SAND - MAT. 2

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  3
        BERM - MAT. 3

             Unit weight of material =  130.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  4
        LINER - MAT. 4

             Unit weight of material =  110.000

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2              .000               .000
               3           2005.000            429.000
               4           5017.000            787.000
               5          10025.000           1143.000
               6          15038.000           1594.000
               7          18000.000           1508.000

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  5
        PROTECTIVE LAYER - MAT. 5

             Unit weight of material =  110.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  6
        FINAL COVER - MAT. 6

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  7
        MSW A - MAT. 7

             Unit weight of material =   67.500

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2             -1.000              .000
               3               .000            501.240
               4            208.850            501.240
               5            417.700            501.240
               6            626.550            501.240
               7            835.400            636.867
               8           5221.250           3485.038

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  8
        MSW B - MAT. 8

             Unit weight of material =   63.100

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2           -100.000              .000
               3               .000            501.240
               4            208.850            501.240
               5            417.700            501.240
               6            626.550            501.240
```

B_CIR.OUT

7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 9
MSW C - MAT. 9

Unit weight of material = 58.500

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 10
MSW D - MAT. 10

Unit weight of material = 53.400

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 11
MSW E - MAT. 11

Unit weight of material = 48.100

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 12
MSW F - MAT. 12

Unit weight of material = 22.600

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

All new material properties defined - No old data retained
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 5
****
* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
****

Line No.	Point	X	Y	
1 - Unit weight of water =			62.40	PHREATIC
1	1	-500.000	80.000	PHREATIC
1	2	1000.000	80.000	PHREATIC

All new piezometric lines defined - No old lines retained
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CIRCULAR; RS 03/18/2002

TABLE NO. 15
****
* NEW ANALYSIS/COMPUTATION DATA *
****

Circular Shear Surface(s)

Computations Performed for Single Shear Surface

Center Coordinates for Center of Circle -
X = 144.579
Y = 422.318
Radius = 342.868

Procedure used to compute the factor of safety: SPENCER

Initial trial estimate for the factor of safety = 3.000

Maximum number of iterations allowed for
calculating the factor of safety = 100

Short form of output will be used for search

THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

Initial trial estimate for side force inclination = 15.000 degrees
(Applicable to Spencer's procedure only)

Allowed force imbalance for convergence = 100.000

Allowed moment imbalance for convergence = 100.000

Maximum subtended angle to be used for subdivision of the
circle into slices = 3.00 degrees

Depth of crack = .000

Depth of water in crack = .000

Unit weight of water in crack = 62.400

Seismic coefficient = .000

Conventional (single-stage) computations to be performed
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 16
****
* NEW SLOPE GEOMETRY DATA *
****

NOTE - NO DATA WERE INPUT, SLOPE GEOMETRY DATA
WERE GENERATED BY THE PROGRAM

Slope Coordinates -

Point	X	Y
1	-500.000	80.000
2	.000	80.000
3	44.000	96.000
4	80.000	96.000
5	80.904	96.226
6	408.369	178.000
7	1200.000	178.000

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	43.8	94.6					
1	45.9	94.0	673.2	3	.00	35.00	.0
	48.0	93.3					
2	56.7	91.0	10344.7	3	.00	35.00	.0
	65.4	88.7					
3	72.7	87.2	15544.0	3	.00	35.00	.0
	80.0	85.6					
4	80.5	85.5	1148.9	3	.00	35.00	.0
	80.9	85.4					
5	85.4	84.6	13452.2	3	.00	35.00	.0
	89.8	83.9					
6	98.7	82.7	33155.4	3	.00	35.00	.0
	107.6	81.4					
7	108.0	81.4	1527.2	3	.00	35.00	.0
	108.4	81.4					
8	116.8	80.7	34918.7	3	.00	35.00	.0
	125.2	80.0					
9	126.6	79.9	6095.4	2	.00	30.00	4.6
	128.0	79.9					
10	128.0	79.8	170.5	2	.00	30.00	9.4
	128.1	79.8					
11	128.2	79.8	680.4	2	.00	30.00	10.0
	128.4	79.8					
12	136.5	79.6	37464.9	2	.00	30.00	23.4
	144.6	79.4					
13	153.6	79.7	46430.3	2	.00	30.00	19.7
	162.5	79.9					
14	163.3	80.0	3945.7	2	.00	30.00	3.5
	164.0	80.0					
15	166.2	80.1	11993.8	3	.00	35.00	.0
	168.4	80.3					
16	169.4	80.4	5900.0	3	.00	35.00	.0
	170.5	80.4					
17	173.8	80.7	18508.3	4	NONLINEAR ENVELOPE		.0
	177.1	81.0					
18	186.0	82.1	50328.1	5	.00	35.00	.0
	195.0	83.2					
19	195.0	83.2	188.0	5	.00	35.00	.0
	195.0	83.2					
20	203.9	84.7	50617.6	7	NONLINEAR ENVELOPE		.0
	212.7	86.3					

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CIRCULAR; RS 03/18/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	212.7	86.3					
21	220.5	88.1	45155.8	7	NONLINEAR ENVELOPE		.0
	228.4	89.8					
22	237.0	92.1	48869.3	7	NONLINEAR ENVELOPE		.0
	245.7	94.7					
23	253.6	97.3	42852.4	7	NONLINEAR ENVELOPE		.0
	261.5	100.0					
24	269.9	103.3	42364.1	8	NONLINEAR ENVELOPE		.0
	278.2	106.6					
25	283.3	108.8	24044.1	8	NONLINEAR ENVELOPE		.0
	288.4	111.1					
26	292.5	113.0	18270.1	8	NONLINEAR ENVELOPE		.0
	296.6	115.0					
27	304.6	119.2	31616.4	9	NONLINEAR ENVELOPE		.0
	312.5	123.4					
28	318.1	126.7	19352.2	9	NONLINEAR ENVELOPE		.0
	323.8	130.0					

B_CIR.OUT

29	331.1	134.9	21355.8	10	NONLINEAR ENVELOPE	.0
	338.8	139.8				
30	342.5	142.4	4512.1	10	NONLINEAR ENVELOPE	.0
	346.2	145.0				
31	347.3	145.8	2233.7	11	NONLINEAR ENVELOPE	.0
	348.4	146.6				
32	355.4	152.1	11057.7	11	NONLINEAR ENVELOPE	.0
	362.5	157.6				
33	363.9	158.6	1442.3	11	NONLINEAR ENVELOPE	.0
	365.4	160.0				
34	366.8	163.0	2830.0	12	NONLINEAR ENVELOPE	.0
	372.3	166.0				
35	374.6	168.1	830.2	6	.00 35.00	.0
	376.9	170.1				

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 27
****
* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
1	45.9	0.	94.6	0.	0.	.0	.0
2	56.7	0.	93.5	0.	0.	.0	.0
3	72.7	0.	91.6	0.	0.	.0	.0
4	80.5	0.	90.8	0.	0.	.0	.0
5	85.4	0.	90.9	0.	0.	.0	.0
6	98.7	0.	91.2	0.	0.	.0	.0
7	108.0	0.	91.6	0.	0.	.0	.0
8	116.8	0.	92.5	0.	0.	.0	.0
9	126.6	0.	93.8	0.	0.	.0	.0
10	128.0	0.	94.1	0.	0.	.0	.0
11	128.2	0.	94.1	0.	0.	.0	.0
12	136.5	0.	95.0	0.	0.	.0	.0
13	153.6	0.	97.0	0.	0.	.0	.0
14	163.3	0.	98.4	0.	0.	.0	.0
15	166.2	0.	98.9	0.	0.	.0	.0
16	169.4	0.	99.4	0.	0.	.0	.0
17	173.8	0.	100.2	0.	0.	.0	.0
18	186.0	0.	102.7	0.	0.	.0	.0
19	195.0	0.	104.6	0.	0.	.0	.0
20	203.9	0.	106.5	0.	0.	.0	.0
21	220.5	0.	110.3	0.	0.	.0	.0
22	237.0	0.	114.4	0.	0.	.0	.0
23	253.6	0.	119.1	0.	0.	.0	.0
24	269.9	0.	124.2	0.	0.	.0	.0
25	283.3	0.	128.7	0.	0.	.0	.0
26	292.5	0.	132.1	0.	0.	.0	.0
27	304.6	0.	136.7	0.	0.	.0	.0
28	316.1	0.	142.3	0.	0.	.0	.0
29	331.3	0.	148.2	0.	0.	.0	.0
30	342.5	0.	153.4	0.	0.	.0	.0
31	347.3	0.	155.7	0.	0.	.0	.0
32	355.4	0.	159.6	0.	0.	.0	.0
33	363.9	0.	164.1	0.	0.	.0	.0
34	366.8	0.	166.3	0.	0.	.0	.0
35	374.6	0.	168.8	0.	0.	.0	.0

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	15.0000	-.3057E+05	.2119E+07		
First-order corrections to F and THETA					.429E+00	-.802E+01
Second-order correction - Iteration 1					.595E+00	-.802E+01
Second-order correction - Iteration 2					.613E+00	-.802E+01
Second-order correction - Iteration 3					.613E+00	-.802E+01
Values factored by .815E+00 - Delta= too large					.500E+00	-.654E+01
2	3.38000	8.4599	-.2858E+04	-.3639E+06		
First-order corrections to F and THETA					.124E+00	.265E+01
Second-order correction - Iteration 1					.130E+00	.265E+01
Second-order correction - Iteration 2					.130E+00	.265E+01
3	3.63021	11.1125	.6558E+01	.2327E+05		
First-order corrections to F and THETA					-.327E-02	-.152E+00
Second-order correction - Iteration 1					-.327E-02	-.152E+00
4	3.62695	10.9606	-.1373E-02	.2455E+02		
First-order corrections to F and THETA					-.220E-05	-.111E-03

For trial number 2 with a nonlinear strength envelope the maximum percent change in shear strength was .000 - at slice 31
Material: 11 Normal stress: 822.235
Strength from previous trial: 628.321
Estimated strength for new trial: 628.321

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.62695	10.9606	-.1373E-02	.2455E+02		
First-order corrections to F and THETA					-.220E-05	-.111E-03

Factor of Safety - - - - - - - - 3.627
Side Force Inclination - - - - - 10.96
Number of Iterations - - - - - - 1

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 38
****
* Final Results for Stresses Along the Shear Surface *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 3.627 Side Force Inclination = 10.96 Degrees

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
1	45.9	94.0	189.0	189.0	36.5
2	56.7	91.0	693.3	693.3	133.8
3	72.7	87.2	1206.2	1206.2	232.9
4	80.5	85.5	1429.6	1429.6	276.0
5	85.4	84.6	1686.4	1686.4	325.6
6	98.7	82.7	2047.5	2047.5	395.3
7	108.0	81.4	2178.8	2178.8	420.6
8	116.8	80.7	2232.6	2232.6	431.0
9	126.6	79.9	2263.8	2259.2	359.6
10	128.0	79.8	2266.7	2257.3	359.3
11	128.2	79.8	2267.7	2257.7	359.4
12	136.5	79.6	2408.3	2385.9	379.8
13	153.6	79.7	2644.0	2624.4	417.8
14	163.3	80.0	2745.5	2743.0	436.6
15	166.2	80.1	2776.2	2776.2	536.0
16	169.4	80.4	2791.9	2791.9	539.0
17	173.8	80.7	2761.2	2761.2	143.1
18	186.0	82.1	2797.2	2797.2	540.6
19	195.0	83.2	2783.0	2783.0	537.3
20	203.9	84.7	2778.0	2778.0	523.4
21	220.5	88.1	2743.3	2743.3	517.2
22	237.0	92.3	2640.9	2640.9	498.9
23	253.6	97.3	2477.6	2477.6	469.6
24	269.9	103.3	2276.1	2276.1	433.6
25	283.3	108.9	2087.2	2087.2	399.7
26	292.5	113.0	1931.6	1931.6	371.9
27	304.6	119.2	1706.4	1706.4	331.5
28	316.1	126.7	1440.2	1440.2	283.9
29	331.3	134.9	1165.1	1165.1	234.4
30	342.5	142.4	927.2	927.2	192.0
31	347.3	145.8	822.2	822.2	173.2
32	355.4	152.1	608.4	608.4	138.2
33	363.9	158.8	360.2	360.2	138.2
34	366.8	163.0	271.2	271.2	138.2
35	374.6	168.1	137.6	137.6	26.6

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .02 (= .177E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .02 (= .301E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -25.49 (= -.255E+02)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .474E-02)
SHOULD NOT EXCEED .100E+03

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 39
****
* Final Results for Side Forces and Stresses Between Slices. *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 3.627 Side Force Inclination = 10.96 Degrees

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	48.0	400.	96.4	.390	49.9	244.5
2	65.4	6016.	93.0	.594	1268.6	356.3
3	80.0	13353.	91.9	.603	2036.7	479.6
4	80.8	13857.	91.8	.591	1968.4	568.1
5	89.8	19499.	91.2	.504	1942.0	1280.2
6	107.6	31671.	90.7	.431	853.9	2045.8
7	108.4	32178.	90.7	.430	849.4	2067.8
8	125.2	42662.	91.1	.407	675.6	2395.2
9	128.0	44044.	91.3	.406	673.2	2400.6
10	128.1	44082.	91.3	.406	673.1	2400.7
11	128.4	44232.	91.3	.406	672.8	2401.2
12	144.6	51431.	93.4	.402	636.5	2491.9
13	162.5	57801.	94.5	.396	583.0	2510.5
14	164.0	58230.	94.6	.396	578.5	3513.8
15	168.4	59834.	95.1	.392	843.9	2565.1
16	170.5	60568.	95.3	.390	526.0	2587.8
17	177.1	58959.	96.8	.401	611.7	2386.2
18	195.0	63583.	99.3	.388	489.9	2514.5
19	195.0	63861.	99.3	.389	489.5	2514.8
20	212.7	64302.	102.5	.379	407.0	2534.7
21	228.4	62808.	106.0	.374	348.5	2492.3
22	245.7	58269.	110.5	.370	295.8	2384.9
23	261.5	52434.	115.2	.367	254.9	2236.9
24	276.2	44607.	120.8	.366	217.3	2032.2
25	288.4	39104.	124.6	.365	196.0	1882.8
26	296.6	34550.	127.4	.365	183.1	1750.1
27	312.5	29338.	134.6	.365	152.5	1476.0
28	323.8	18897.	139.8	.365	131.7	1249.1
29	338.8	10880.	147.4	.366	101.6	923.7
30	346.2	7403.	151.6	.375	104.1	727.7
31	348.4	6457.	152.8	.382	110.7	660.9
32	362.5	1605.	163.0	.486	163.3	191.0
33	365.4	1137.	163.9	.542	192.3	115.6
34	372.3	458.	167.7	.560	203.7	95.3
35	376.9	0.	16417.4	ABOVE	.0	.0

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .02 (= .177E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .02 (= .201E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -25.49 (= -.255E+02)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .474E-02)
SHOULD NOT EXCEED .100E+01

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED

C_CIR.DAT

```
HEADING
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
CIRCULAR; RE 03/18/2002
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
1200 -80

2  2  SAND - MAT. 2
-500 80
1200 80

3  3  BERM - MAT. 3
0 80
48 96
80 96
128 80
1200 50.880

4  4  LINER - MAT. 4
80 96
80.904 96.226
128.079 80.501
1200 91.380

5  5  PROTECTIVE LAYER - MAT. 5
80.904 96.226
89.619 95.362
128.394 82.504
1200 93.380

6  6  FINAL COVER - MAT. 6
80.904 96.226
408.369 179
1200 178

7  7  MSW A - MAT. 7
89.619 95.362
108.369 100
1200 100

8  8  MSW B - MAT. 8
108.369 100
168.369 115
1200 115

9  9  MSW C - MAT. 9
168.369 115
228.369 130
1200 130

10  10  MSW D - MAT. 10
228.369 130
288.369 145
1200 145

11  11  MSW E - MAT. 11
288.369 145
348.369 160
1200 160

12  12  MSW F - MAT. 12
348.369 160
408.369 175
1200 175


MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
2 SAND - MAT. 2
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
3 BERM - MAT. 3
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
4 LINER - MAT. 4
    110
    Nonlinear Mohr-Coulomb
    -1000 0
    0 0
    2005 429
    5013 787
    10025 1143
    15038 1894
    19000 1908

    Piezometric Line
    1
5  PROTECTIVE LAYER - MAT. 5
    110
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
6 FINAL COVER - MAT. 6
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
7 MSW A - MAT. 7
    47.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -1 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
8 MSW B - MAT. 8
    63.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
9 MSW C - MAT. 9
    58.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
10 MSW D - MAT. 10
    53.4
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
11 MSW E - MAT. 11
    48.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
12 MSW F - MAT. 12
    22.6
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1

PIEZOMETRIC LINE DATA
1 42.4 PHREATIC
-500 80
1000 80


Analysis/computation data follow -
Circle
214.324 296.218 277.114
PROCEDURE
SPENCER
FACTOR OF SAFETY
3.0
ITE
100
SHORT

Plot
COMpute
```

C_CIR.OUT

```
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        TABLE NO. 1
        ***************************************
        * COMPUTER PROGRAM DESIGNATION - UTEXAS3 *
        * Originally Coded By Stephen G. Wright  *
        * Version No. 1.206                      *
        * Last Revision Date  6/ 4/96            *
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        ***************************************

        ************************************************************
        *                                                          *
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        * HAVE BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL   *
        * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE   *
        * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER  *
        * PROGRAM AND MUST HAVE READ ALL DOCUMENTATION FOR THIS      *
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        STABILITY ANALYSES - 98 FEET
        CIRCULAR; RS 03/18/2002

        TABLE NO. 2
        ************************
        * NEW PROFILE LINE DATA *
        ************************

        PROFILE LINE  1 - MATERIAL TYPE =  1
        HAWTHORNE - MAT. 1

             Point       X             Y

               1      -500.000       -80.000
               2      1200.000       -80.000

        PROFILE LINE  2 - MATERIAL TYPE =  2
        SAND - MAT. 2

             Point       X             Y

               1      -500.000        80.000
               2      1200.000        80.000

        PROFILE LINE  3 - MATERIAL TYPE =  3
        BERM - MAT. 3

             Point       X             Y

               1          .000        40.000
               2        48.000        96.000
               3        80.000        96.000
               4       128.000        80.000
               5      1200.000        80.880

        PROFILE LINE  4 - MATERIAL TYPE =  4
        LINER - MAT. 4

             Point       X             Y

               1        80.000        96.000
               2        80.904        96.226
               3       128.079        80.501
               4      1200.000        91.380

        PROFILE LINE  5 - MATERIAL TYPE =  5
        PROTECTIVE LAYER - MAT. 5

             Point       X             Y

               1        80.904        96.226
               2        89.819        95.362
               3       128.394        82.504
               4      1200.000        93.380

        PROFILE LINE  6 - MATERIAL TYPE =  6
        FINAL COVER - MAT. 6

             Point       X             Y

               1        80.904        96.226
               2       408.369       178.000
               3      1200.000       178.000

        PROFILE LINE  7 - MATERIAL TYPE =  7
        MSW A - MAT. 7

             Point       X             Y

               1        89.819        95.362
               2       168.369       160.000
               3      1200.000       160.000

        PROFILE LINE  8 - MATERIAL TYPE =  8
        MSW B - MAT. 8

             Point       X             Y

               1       168.369       160.000
               2       368.369       115.000
               3      1200.000       115.000

        PROFILE LINE  9 - MATERIAL TYPE =  9
        MSW C - MAT. 9

             Point       X             Y

               1       168.369       115.000
               2       228.369       130.000
               3      1200.000       130.000

        PROFILE LINE 10 - MATERIAL TYPE = 10
        MSW D - MAT. 10

             Point       X             Y

               1       228.369       130.000
               2       288.369       145.000
               3      1200.000       145.000

        PROFILE LINE 11 - MATERIAL TYPE = 11
        MSW E - MAT. 11

             Point       X             Y

               1       288.369       145.000
               2       348.369       160.000
               3      1200.000       160.000

        PROFILE LINE 12 - MATERIAL TYPE = 12
        MSW F - MAT. 12

             Point       X             Y

               1       348.369       160.000
               2       408.369       175.000
               3      1200.000       175.000

        All new profile lines defined - No old lines retained
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        STABILITY ANALYSES - 98 FEET
        CIRCULAR; RS 03/18/2002

        TABLE NO. 3
        ************************************************************
        * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ************************************************************

        DATA FOR MATERIAL TYPE  1
        HAWTHORNE - MAT. 1

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  2
        SAND - MAT. 2

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  3
        BERM - MAT. 3

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  4
        LINER - MAT. 4

             Unit weight of material =  110.000

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point     Normal Stress      Shear Stress

               1          -1000.000              .000
               2               .500              .000
               3            2005.000           429.000
               4            5013.000           787.000
               5           10025.000          1143.000
               6           15038.000          1594.000
               7           18000.000          1908.000

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  5
        PROTECTIVE LAYER - MAT. 5

             Unit weight of material =  110.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  6
        FINAL COVER - MAT. 6

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  7
        MSW A - MAT. 7

             Unit weight of material =   67.500

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point     Normal Stress      Shear Stress

               1          -1000.000              .000
               2             -1.000              .000
               3               .000           501.240
               4            268.950           501.240
               5            417.700           501.240
               6            624.550           501.240
               7            835.400           636.847
               8           5221.250          3485.038

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  8
        MSW B - MAT. 8

             Unit weight of material =   63.100

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point     Normal Stress      Shear Stress

               1          -1000.000              .000
               2           -100.000              .000
               3               .000           501.240
               4            204.850           501.240
               5            417.700           501.240
               6            624.550           501.240
```

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Point	Normal Stress	Shear Stress
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 9
MSW C - MAT. 9

Unit weight of material = 58.500

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 10
MSW D - MAT. 10

Unit weight of material = 53.400

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 11
MSW E - MAT. 11

Unit weight of material = 48.100

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 12
MSW F - MAT. 12

Unit weight of material = 22.600

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

All new material properties defined - No old data retained
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 5
****
* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
****

Line No.	Point	X	Y	
1 - Unit weight of water =			62.40	PHREATIC
1	1	-500.000	80.000	PHREATIC
1	2	1000.000	80.000	PHREATIC

All new piezometric lines defined - No old lines retained
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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 15
****
* NEW ANALYSIS/COMPUTATION DATA *
****

Circular Shear Surface(s)

Computations Performed for Single Shear Surface

Center Coordinates for Center of Circle -
X = 214.324
Y = 296.218
Radius = 277.114

Procedure used to compute the factor of safety: SPENCER

Initial trial estimate for the factor of safety = 3.000

Maximum number of iterations allowed for
calculating the factor of safety = 100

Short form of output will be used for search

THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

Initial trial estimate for side force inclination = 15.000 degrees
(Applicable to Spencer's procedure only)

Allowed force imbalance for convergence = 100.000

Allowed moment imbalance for convergence = 100.000

Maximum subtended angle to be used for subdivision of the
circle into slices = 3.00 degrees

Depth of crack = .000

Depth of water in crack = .000

Unit weight of water in crack = 62.400

Seismic coefficient = .000

Conventional (single-stage) computations to be performed
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CIRCULAR; RS 03/18/2002

TABLE NO. 16
****
* NEW SLOPE GEOMETRY DATA *
****

NOTE - NO DATA WERE INPUT, SLOPE GEOMETRY DATA
WERE GENERATED BY THE PROGRAM

Slope Coordinates -

Point	X	Y
1	-500.000	80.000
2	.000	80.000
3	48.000	96.000
4	80.000	96.000
5	80.904	96.226
6	408.369	178.000
7	1200.000	178.000

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	29.4	89.8					
1	35.0	85.1	8676.3	3	.00	35.00	.0
	40.5	80.4					
2	40.7	80.2	828.1	3	.00	35.00	.0
	41.0	80.0					
3	44.5	77.3	14450.4	2	.00	30.00	169.5
	48.0	74.6					
4	53.9	70.4	35811.9	2	.00	30.00	601.0
	59.8	66.2					
5	66.0	62.3	48486.3	2	.00	30.00	1105.6
	72.1	58.4					
6	76.0	56.1	36960.5	2	.00	30.00	1490.3
	80.0	53.8					
7	80.5	53.6	4431.5	2	.00	30.00	1648.2
	80.9	53.3					
8	85.4	51.0	48147.5	2	.00	30.00	1810.1
	89.8	48.6					
9	96.4	45.6	80657.3	2	.00	30.00	2149.1
	102.9	42.5					
10	105.7	41.3	35930.9	2	.00	30.00	2413.9
	108.4	40.2					
11	115.1	37.6	95420.4	2	.00	30.00	2648.1
	121.9	35.0					
12	125.0	33.9	45298.9	2	.00	30.00	2874.8
	128.0	32.9					
13	128.0	32.9	597.2	2	.00	30.00	2940.3
	128.1	32.9					
14	128.3	32.8	2303.9	2	.00	30.00	2944.3
	128.4	32.8					
15	135.3	30.7	110204.1	2	.00	30.00	3076.6
	142.3	28.6					
16	149.4	26.9	121096.5	2	.00	30.00	3321.8
	156.4	25.2					
17	162.4	24.1	109193.6	2	.00	30.00	3489.2
	168.4	22.9					
18	175.6	21.9	137612.0	2	.00	30.00	3623.8
	182.7	20.9					
19	190.0	20.3	144338.5	2	.00	30.00	3727.0
	197.2	19.6					
20	204.4	19.4	149477.2	2	.00	30.00	3793.0
	211.7	19.1					

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 26
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* Coordinate, Weight, Strength and Pore Water Pressure *
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****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	211.7	19.1					
21	213.0	19.1	27632.7	2	.00	30.00	3799.5
	214.3	19.1					
22	221.3	19.3	148542.1	2	.00	30.00	3788.8
	228.4	19.5					
23	235.6	20.0	156747.9	2	.00	30.00	3742.9
	242.8	20.6					
24	250.0	21.5	154317.5	2	.00	30.00	3649.8
	257.2	22.4					
25	264.4	23.8	152203.7	2	.00	30.00	3509.7
	271.5	25.1					
26	278.5	26.7	148450.5	2	.00	30.00	3323.0
	285.6	28.4					
27	287.0	28.8	28761.1	2	.00	30.00	3194.6
	288.4	29.2					
28	295.3	31.3	141768.6	2	.00	30.00	3038.9
	302.2	33.4					

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29	389.1	35.9	134440.6	2	.00	30.00	2751.7
	315.9	38.4					
30	322.6	41.2	125790.1	2	.00	30.00	2620.1
	329.2	44.1					
31	335.8	47.2	115960.5	2	.00	30.00	2044.8
	342.3	50.4					
32	345.3	52.0	51578.5	3	.00	30.00	1744.4
	348.4	53.7					
33	354.6	57.4	99137.3	2	.00	30.00	1433.0
	360.9	61.0					
34	364.9	65.0	86190.3	2	.00	30.00	934.4
	373.0	69.0					
35	374.8	73.3	72800.9	2	.00	30.00	416.3
	384.7	77.6					
36	386.2	78.8	14896.9	2	.00	30.00	73.7
	387.7	80.0					
37	389.3	81.1	17611.5	3	.00	35.00	.0
	390.9	82.7					
38	391.2	82.9	3173.4	4	NONLINEAR ENVELOPE		.0
	391.5	83.2					
39	392.7	84.3	12190.8	5	.00	35.00	.0
	393.9	85.2					
40	399.3	90.0	50391.2	7	NONLINEAR ENVELOPE		.0
	404.7	94.9					

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	404.7	94.9					
41	406.6	96.6	15462.2	7	NONLINEAR ENVELOPE		.0
	408.4	98.4					
42	409.2	99.2	4703.8	7	NONLINEAR ENVELOPE		.0
	410.0	100.0					
43	415.0	105.3	37143.2	8	NONLINEAR ENVELOPE		.0
	420.0	110.5					
44	422.0	112.8	12856.8	8	NONLINEAR ENVELOPE		.0
	424.0	115.0					
45	428.6	120.6	25402.8	9	NONLINEAR ENVELOPE		.0
	433.2	126.2					
46	434.4	128.1	6726.3	9	NONLINEAR ENVELOPE		.0
	436.1	130.0					
47	440.3	135.9	15597.9	10	NONLINEAR ENVELOPE		.0
	444.4	141.8					
48	445.5	143.4	3151.5	10	NONLINEAR ENVELOPE		.0
	446.5	145.0					
49	450.3	151.3	8531.9	11	NONLINEAR ENVELOPE		.0
	454.1	157.4					
50	454.9	156.7	1150.6	11	NONLINEAR ENVELOPE		.0
	455.6	160.0					
51	459.0	166.4	3767.5	12	NONLINEAR ENVELOPE		.0
	463.4	172.8					
52	463.0	173.9	613.1	12	NONLINEAR ENVELOPE		.0
	463.5	175.0					
53	464.2	176.5	258.7	6	.00	35.00	.0
	464.8	178.0					

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 27
****
* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
1	35.0	0.	88.4	0.	0.	.0	.0
2	40.7	0.	86.9	0.	0.	.0	.0
3	44.5	0.	86.1	0.	0.	.0	.0
4	51.9	0.	83.5	0.	0.	.0	.0
5	66.0	0.	79.3	0.	0.	.0	.0
6	76.0	0.	76.3	0.	0.	.0	.0
7	80.5	0.	75.1	0.	0.	.0	.0
8	85.4	0.	74.1	0.	0.	.0	.0
9	94.4	0.	72.1	0.	0.	.0	.0
10	105.7	0.	70.4	0.	0.	.0	.0
11	115.1	0.	68.9	0.	0.	.0	.0
12	125.0	0.	67.5	0.	0.	.0	.0
13	130.0	0.	67.1	0.	0.	.0	.0
14	128.2	0.	67.1	0.	0.	.0	.0
15	135.3	0.	66.7	0.	0.	.0	.0
16	149.4	0.	66.0	0.	0.	.0	.0
17	162.4	0.	65.7	0.	0.	.0	.0
18	175.6	0.	65.8	0.	0.	.0	.0
19	194.0	0.	66.2	0.	0.	.0	.0
20	204.4	0.	67.0	0.	0.	.0	.0
21	213.0	0.	67.6	0.	0.	.0	.0
22	221.3	0.	68.5	0.	0.	.0	.0
23	235.6	0.	70.2	0.	0.	.0	.0
24	250.0	0.	72.2	0.	0.	.0	.0
25	264.4	0.	74.7	0.	0.	.0	.0
26	278.5	0.	77.6	0.	0.	.0	.0
27	287.0	0.	79.6	0.	0.	.0	.0
28	295.3	0.	81.7	0.	0.	.0	.0
29	309.1	0.	85.5	0.	0.	.0	.0
30	322.6	0.	89.8	0.	0.	.0	.0
31	335.8	0.	94.7	0.	0.	.0	.0
32	345.3	0.	98.6	0.	0.	.0	.0
33	354.6	0.	102.6	0.	0.	.0	.0
34	366.9	0.	108.5	0.	0.	.0	.0
35	378.8	0.	115.2	0.	0.	.0	.0
36	386.2	0.	120.1	0.	0.	.0	.0
37	389.3	0.	122.5	0.	0.	.0	.0
38	391.2	0.	124.1	0.	0.	.0	.0
39	392.7	0.	125.3	0.	0.	.0	.0

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 27
****
* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
40	399.3	0.	129.4	0.	0.	.0	.0
41	406.6	0.	133.8	0.	0.	.0	.0
42	409.2	0.	135.4	0.	0.	.0	.0
43	415.0	0.	138.9	0.	0.	.0	.0
44	422.0	0.	143.2	0.	0.	.0	.0
45	428.6	0.	147.7	0.	0.	.0	.0
46	434.4	0.	152.1	0.	0.	.0	.0
47	440.3	0.	156.4	0.	0.	.0	.0
48	445.5	0.	161.2	0.	0.	.0	.0
49	450.3	0.	165.9	0.	0.	.0	.0
50	454.9	0.	171.1	0.	0.	.0	.0
51	459.0	0.	174.5	0.	0.	.0	.0
52	463.0	0.	176.4	0.	0.	.0	.0
53	464.2	0.	177.3	0.	0.	.0	.0

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	15.0000	-.2955E+06	.1847E+08		
First-order corrections to F and THETA					.442E+00	-.137E+01
Values factored by .638E+00 - Deltas too large					.278E+00	-.859E-01
2	3.27776	6.4056	-.1411E+06	.3616E+07		
First-order corrections to F and THETA					.934E+00	-.334E+00
Values factored by .535E+00 - Deltas too large					.500E+00	-.180E+00
3	3.77776	6.2257	-.7554E+05	.1847E+07		
First-order corrections to F and THETA					.677E+00	-.874E-01
Values factored by .739E+00 - Deltas too large					.500E+00	-.646E-01
4	4.27776	6.1611	-.2622E+05	.6126E+06		
First-order corrections to F and THETA					.304E+00	-.121E-01
Second-order correction - Iteration 1					.329E+00	-.121E-01
Second-order correction - Iteration 2					.329E+00	-.121E-01
5	4.60713	6.1490	.1582E+03	-.4790E+04		
First-order corrections to F and THETA					-.207E-02	.536E-03
Second-order correction - Iteration 1					-.207E-02	.533E-03
6	4.60506	6.1495	-.1094E+00	.1553E+03		
First-order corrections to F and THETA					.751E-06	-.550E-05

For trial number 2 with a nonlinear strength envelope the maximum
percent change in shear strength was 40.987 - at slice 48
Material: 10 Normal stress: 1162.631
Strength from previous trial: 503.240
Estimated strength for new trial: 849.371

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	6.60506	6.1495	-.9174E+03	.9090E+05		
First-order corrections to F and THETA					.643E-02	-.237E-01
Second-order correction - Iteration 1					.651E-02	-.297E-01
Second-order correction - Iteration 2					.651E-02	-.297E-01
2	6.61357	6.1198	.6570E-01	-.7510E+02		
First-order corrections to F and THETA					.389E-05	.309E-04

For trial number 3 with a nonlinear strength envelope the maximum
percent change in shear strength was .000 - at slice 49
Material: 11 Normal stress: 786.596
Strength from previous trial: 605.174
Estimated strength for new trial: 605.174

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	6.61357	6.1198	.8578E-01	-.7510E+02		
First-order corrections to F and THETA					.389E-05	.309E-04

Factor of Safety - - - - - - - - 6.614
Side Force Inclination - - - - - 6.12
Number of Iterations - - - - - - 1

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STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 36
****
* Final Results for Stresses Along the Shear Surface *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 6.614 Side Force Inclination = 6.12 Degrees

--------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
1	35.0	85.1	1027.6	1027.6	356.0
2	40.7	80.2	2069.0	2069.0	314.0
3	44.5	77.3	3571.5	2402.1	300.6
4	53.1	70.4	1610.5	3069.5	376.6
5	66.0	62.3	4533.5	3488.0	436.5
6	76.0	56.1	5323.0	3832.6	479.6
7	80.5	53.6	5629.9	3981.7	498.3
8	85.4	51.0	6062.2	4273.1	534.6
9	94.4	45.6	6826.8	4677.7	585.4

C_CIR.OUT

10	105.7	41.9	7284.3	4870.4	608.5
11	115.1	37.6	7467.5	5019.4	628.1
12	125.0	33.9	8026.7	5351.9	644.7
13	121.0	32.9	8127.9	5167.6	649.2
14	128.2	32.4	8236.8	5190.5	649.5
15	135.3	30.7	8468.1	5391.5	674.7
16	149.4	26.5	9072.3	5760.5	720.9
17	162.4	24.1	9546.8	6057.6	758.1
18	175.6	21.9	9926.0	6302.2	788.7
19	190.0	20.1	10244.0	6517.0	815.6
20	204.4	19.4	10469.4	6686.4	836.7
21	213.6	19.1	10570.0	6770.5	847.3
22	221.3	19.3	10617.3	6828.5	854.5
23	235.6	20.0	10636.2	6893.3	862.6
24	250.0	21.5	10559.4	6909.6	864.7
25	264.4	23.8	10395.9	6886.2	861.7
26	278.5	26.7	10147.6	6826.6	854.0
27	287.0	28.8	9965.3	6774.6	847.8
28	295.3	31.3	9732.9	6698.6	837.7
29	309.2	35.9	9288.8	6537.0	818.1
30	322.6	41.2	8768.0	6343.9	794.4
31	335.8	47.2	8173.5	6126.7	767.0
32	345.3	52.0	7696.3	5952.0	744.8
33	354.6	57.4	7132.0	5719.0	715.7
34	364.9	65.0	6301.2	5366.8	671.6
35	378.8	73.3	5413.7	4937.5	625.4
36	384.2	78.4	4833.6	4760.1	595.7
37	389.5	81.3	4498.3	4498.3	682.7
38	391.2	82.9	4666.0	4666.0	161.6
39	392.7	84.2	4237.2	4237.2	440.0

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
40	399.3	90.0	3851.7	3851.7	562.6
41	406.6	96.6	3468.7	3468.7	508.7
42	409.2	99.2	3338.3	3338.3	487.5
42	415.0	105.2	2944.4	2944.4	436.0
44	422.0	112.8	2544.0	2544.0	378.5
45	428.4	120.6	2134.5	2134.5	320.9
46	434.4	128.1	1761.6	1761.4	264.4
47	440.3	135.9	1408.1	1408.1	218.7
48	445.5	143.4	1085.5	1085.5	173.3
49	450.3	151.2	786.6	786.6	131.2
50	454.9	158.7	491.9	491.9	108.6
51	459.0	166.4	300.3	300.3	108.6
52	463.0	173.9	144.1	144.1	108.6
53	464.2	176.5	118.1	118.1	17.9

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION - .08 (= .795E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION - .25 (= .246E+00)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN - 82.63 (= .824E+02)
SHOULD NOT EXCEED .100E+05
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM - .02 (= .226E-01)
SHOULD NOT EXCEED .100E+03

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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
CIRCULAR; RS 03/18/2002

TABLE NO. 39
****
* Final Results for Side Forces and Stresses Between Slices. *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 4.614 Side Force Inclination = 4.12 Degrees

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	40.5	11443.	65.7	.404	371.1	1368.7
2	41.0	12469.	65.3	.388	298.7	1515.7
3	48.0	28633.	81.3	.315	-147.4	2804.2
4	59.8	63619.	76.2	.337	44.0	4195.8
5	72.1	104695.	71.6	.356	378.9	5168.4
6	80.0	133136.	69.2	.365	535.1	5684.0
7	80.9	136413.	68.9	.366	579.3	5745.6
8	89.8	169885.	66.3	.356	415.9	6367.4
9	102.9	220053.	62.8	.343	213.6	7169.9
10	108.4	240383.	61.5	.340	147.1	7446.5
11	121.9	288896.	58.8	.334	12.6	8022.1
12	128.0	309570.	57.8	.332	-39.4	8237.6
13	128.1	309661.	57.8	.332	-40.0	8240.1
14	128.4	310089.	57.7	.332	-42.6	8250.5
15	142.3	355551.	55.7	.327	-163.6	8683.6
16	156.4	396824.	54.2	.322	-291.0	9075.2
17	168.4	427873.	53.2	.318	-400.6	9345.2
18	182.7	459539.	52.4	.314	-521.9	9592.8
19	197.2	484539.	52.4	.310	-632.3	9754.4
20	211.7	502193.	52.8	.307	-730.1	9828.0
21	214.3	504576.	52.9	.306	-746.4	9831.9
22	228.4	512843.	53.8	.303	-824.9	9803.1
23	242.8	513472.	55.4	.300	-890.4	9686.2
24	257.2	506126.	57.4	.297	-939.0	9482.2
25	271.5	491097.	60.0	.294	-969.8	9193.4
26	285.6	468892.	63.1	.292	-981.6	8822.8
27	288.4	463715.	63.8	.291	-981.6	8740.2
28	302.2	433869.	67.6	.289	-969.7	8277.0
29	315.9	398755.	71.9	.287	-937.4	7742.8
30	329.2	359445.	76.7	.286	-884.4	7144.1
31	342.3	317227.	82.2	.285	-810.4	6489.3
32	348.4	298470.	84.9	.286	-767.7	6159.9
33	360.9	252769.	91.2	.287	-669.1	5451.2
34	373.0	210297.	97.9	.288	-566.7	4742.7
35	384.7	170732.	105.0	.289	-475.2	4070.1
36	387.7	161033.	106.9	.289	-455.0	3904.8
37	390.9	151230.	108.9	.288	-448.2	3753.4
38	391.5	146954.	109.3	.289	-436.8	3705.0
39	393.9	141896.	110.9	.288	-433.6	3597.0
40	404.7	110470.	118.1	.282	-408.7	3081.1

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
41	408.4	100137.	120.7	.281	-395.7	2856.6
42	410.0	95562.	121.8	.281	-380.5	2836.3
43	420.0	68592.	129.8	.285	-290.2	2311.3
44	426.0	58615.	133.1	.288	-252.3	2102.5
45	433.2	37495.	141.5	.294	-169.0	1609.0
46	436.1	31578.	144.3	.298	-139.5	1447.8
47	444.4	16668.	153.1	.321	-80.6	977.1
48	446.5	13574.	155.9	.320	-33.8	851.8
49	454.1	4798.	165.1	.374	57.0	605.3
50	458.6	3457.	167.3	.404	85.8	514.3
51	462.4	529.	175.3	.474	85.7	113.3
52	463.5	330.	176.2	.415	53.9	165.0
53	465.0	0.	655.7	ABOVE	.0	.0

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION - .08 (= .795E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION - .25 (= .246E+00)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN - 82.63 (= .824E+02)
SHOULD NOT EXCEED .100E+05
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM - .02 (= .226E-01)
SHOULD NOT EXCEED .100E+03

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED

Attachment 2

CASE 2

UTEXAS3 Computer Data Files

Final Configuration Non-Circular Shear Surfaces

- Surface 2-A: File A_NC.DAT
- Surface 2-B: File B_NC.DAT
- Surface 2-C: File C_NC.DAT

A_NC.DAT

```
HEADING
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
1200 -80

2  2  SAND - MAT. 2
-500 80
1200 80

3  3  BERM - MAT. 3
0 80
48 96
80 96
128 80
1200 90.880

4  4  LINER - MAT. 4
80 96
80.904 96.226
128.079 80.501
1200 91.380

5  5  PROTECTIVE LAYER - MAT. 5
80.904 96.226
89.819 95.362
129.394 82.504
1200 93.380

6  6  FINAL COVER - MAT. 6
80.904 96.226
408.369 178
1200 178

7  7  MSW A - MAT. 7
89.819 95.362
108.369 100
1200 100

8  8  MSW B - MAT. 8
108.369 100
168.369 115
1200 115

9  9  MSW C - MAT. 9
168.369 115
228.369 130
1200 130

10  10  MSW D - MAT. 10
228.369 130
288.369 145
1200 145

11  11  MSW E - MAT. 11
288.369 145
348.369 160
1200 160

12  12  MSW F - MAT. 12
348.369 160
408.369 175
1200 175


MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
2 SAND - MAT. 2
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
3 BERM - MAT. 3
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
4 LINER - MAT. 4
    110
    Nonlinear Mohr-Coulomb
    -1000 0
    0 0
    2005 429
    5013 787
    10025 1143
    15038 1594
    18000 1808

    Piezometric Line
    1
5  PROTECTIVE LAYER - MAT. 5
    110
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
6 FINAL COVER - MAT. 6
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
7 MSW A - MAT. 7
    67.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -1 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
8 MSW B - MAT. 8
    63.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
9 MSW C - MAT. 9
    58.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
10 MSW D - MAT. 10
    53.4
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
11 MSW E - MAT. 11
    48.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
12 MSW F - MAT. 12
    22.6
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1

PIEZOMETRIC LINE DATA
1 62.4 PHREATIC
-500 80
1000 80


ANAlysis/computation data follow -
NonCircular
80.452 96.113
128.039 80.250
235.769 81.120
376.402 141

FACTOR OF SAFETY
3.0
FTE
100
SHORT

Plot
COMpute
```

A_NC.OUT

```
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        TABLE NO. 1
        ***********************************
        * COMPUTER PROGRAM DESIGNATION - UTEXAS3 *
        * Originally Coded By Stephen G. Wright  *
        * Version No. 1.206                      *
        * Last Revision Date  6/ 4/96            *
        * (C) Copyright 1985-1996 S. G. Wright   *
        * All Rights Reserved                    *
        ***********************************

        ************************************************************
        *                                                          *
        *      RESULTS OF COMPUTATIONS PERFORMED USING THIS COMPUTER *
        * PROGRAM SHOULD NOT BE USED FOR DESIGN PURPOSES UNLESS THEY *
        * HAVE BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL   *
        * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE   *
        * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER  *
        * PROGRAM AND MUST HAVE READ ALL DOCUMENTATION FOR THIS      *
        * PROGRAM BEFORE ATTEMPTING ITS USE.                         *
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        *                                                          *
        ************************************************************
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        OAK HAMMOCK DISPOSAL FACILITY
        STABILITY ANALYSES - 98 FEET
        NON-CIRCULAR; RS 03/18/2002

        TABLE NO. 2
        ************************
        * NEW PROFILE LINE DATA *
        ************************

        PROFILE LINE  1 - MATERIAL TYPE =  1
        HAWTHORNE - MAT. 1

             Point        X              Y

               1       -500.000        -80.000
               2       1200.000        -80.000

        PROFILE LINE  2 - MATERIAL TYPE =  2
        SAND - MAT. 2

             Point        X              Y

               1       -500.000         80.000
               2       1200.000         80.000

        PROFILE LINE  3 - MATERIAL TYPE =  3
        BERM - MAT. 3

             Point        X              Y

               1          .000         80.000
               2        48.000         96.000
               3        80.000         96.000
               4       128.000         80.000
               5      1200.000         90.880

        PROFILE LINE  4 - MATERIAL TYPE =  4
        LINER - MAT. 4

             Point        X              Y

               1        80.000         96.000
               2        80.904         96.226
               3       128.079         80.501
               4      1200.000         91.380

        PROFILE LINE  5 - MATERIAL TYPE =  5
        PROTECTIVE LAYER - MAT. 5

             Point        X              Y

               1        80.904         96.226
               2        89.819         95.362
               3       128.394         82.504
               4      1200.000         93.380

        PROFILE LINE  6 - MATERIAL TYPE =  6
        FINAL COVER - MAT. 6

             Point        X              Y

               1        80.904         96.226
               2       408.369        178.000
               3      1200.000        178.000

        PROFILE LINE  7 - MATERIAL TYPE =  7
        MSW A - MAT. 7

             Point        X              Y

               1        89.819         95.362
               2       108.369        100.000
               3      1200.000        100.000

        PROFILE LINE  8 - MATERIAL TYPE =  8
        MSW B - MAT. 8

             Point        X              Y

               1       108.369         100.000
               2       168.369         115.000
               3      1200.000         115.000

        PROFILE LINE  9 - MATERIAL TYPE =  9
        MSW C - MAT. 9

             Point        X              Y

               1       168.369         115.000
               2       228.369         130.000
               3      1200.000         130.000

        PROFILE LINE 10 - MATERIAL TYPE = 10
        MSW D - MAT. 10

             Point        X              Y

               1       228.369         130.000
               2       288.369         145.000
               3      1200.000         145.000

        PROFILE LINE 11 - MATERIAL TYPE = 11
        MSW E - MAT. 11

             Point        X              Y

               1       288.369         145.000
               2       348.369         160.000
               3      1200.000         160.000

        PROFILE LINE 12 - MATERIAL TYPE = 12
        MSW F - MAT. 12

             Point        X              Y

               1       348.369         160.000
               2       408.369         175.000
               3      1200.000         175.000

        All new profile lines defined - No old lines retained
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        OAK HAMMOCK DISPOSAL FACILITY
        STABILITY ANALYSES - 98 FEET
        NON-CIRCULAR; RS 03/18/2002

        TABLE NO. 3
        ************************************************************
        * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ************************************************************

        DATA FOR MATERIAL TYPE  1
        HAWTHORNE - MAT. 1

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  2
        SAND - MAT. 2

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  3
        BERM - MAT. 3

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  4
        LINER - MAT. 4

             Unit weight of material =  120.000

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2               .000              .000
               3           2005.000           429.000
               4           5013.000           787.000
               5          10025.000          1143.000
               6          15038.000          1594.000
               7          18000.000          1908.000

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  5
        PROTECTIVE LAYER - MAT. 5

             Unit weight of material =  110.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  6
        FINAL COVER - MAT. 6

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  7
        MSW A - MAT. 7

             Unit weight of material =   67.500

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2             -1.000              .060
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
               7            835.400           636.867
               8           5221.250          3485.038

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  8
        MSW B - MAT. 8

             Unit weight of material =   63.100

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2           -100.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
```

A_NC.OUT

7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 9
MSW C - MAT. 9

Unit weight of material = 58.500

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 10
MSW D - MAT. 10

Unit weight of material = 53.600

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 11
MSW E - MAT. 11

Unit weight of material = 48.100

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 12
MSW F - MAT. 12

Unit weight of material = 22.600

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

All new material properties defined - No old data retained
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NON-CIRCULAR; RS 03/18/2002

TABLE NO. 5
****
* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
****

Line No.	Point	X	Y	
1 - Unit weight of water = 62.40 PHREATIC				
1	1	-500.000	80.000	PHREATIC
1	2	1000.000	80.000	PHREATIC

All new piezometric lines defined - No old lines retained
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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 15
****
* NEW ANALYSIS/COMPUTATION DATA *
****

Noncircular Shear Surface(s)

Computations Performed for Single Shear Surface

Shear Surface Coordinates -

Point	X	Y
1	80.452	96.113
2	128.039	80.250
3	235.769	81.328
4	274.402	141.000

Initial trial estimate for the factor of safety = 3.000

Maximum number of iterations allowed for
calculating the factor of safety = 100

Short form of output will be used for search

THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

Initial trial estimate for side force inclination = 15.000 degrees
(Applicable to Spencer's procedure only)

Allowed force imbalance for convergence = 100.000

Allowed moment imbalance for convergence = 100.000

Number of increments for slice subdivision = 30

Depth of water in crack = .000

Unit weight of water in crack = 62.400

Seismic coefficient = .000

Conventional (single-stage) computations to be performed

Procedure used to compute the factor of safety: SPENCER
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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 16
****
* NEW SLOPE GEOMETRY DATA *
****

NOTE - NO DATA WERE INPUT, SLOPE GEOMETRY DATA
WERE GENERATED BY THE PROGRAM

Slope Coordinates -

Point	X	Y
1	-500.000	80.000
2	.000	80.000
3	48.000	96.000
4	80.000	96.000
5	90.904	98.224
6	408.165	174.000
7	1200.000	174.000

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 24
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	80.5	96.1					
1	80.7	96.0	6.6	4	NONLINEAR ENVELOPE		.0
	80.9	96.0					
2	83.1	95.2	800.9	4	NONLINEAR ENVELOPE		.0
	85.4	94.5					
3	87.6	93.7	2144.1	4	NONLINEAR ENVELOPE		.0
	89.8	93.0					
4	92.9	92.0	4658.0	4	NONLINEAR ENVELOPE		.0
	96.0	90.9					
5	99.1	89.9	6162.2	4	NONLINEAR ENVELOPE		.0
	102.2	88.9					
6	105.3	87.8	7666.4	4	NONLINEAR ENVELOPE		.0
	108.4	86.8					
7	110.8	86.0	7142.4	4	NONLINEAR ENVELOPE		.0
	113.3	85.2					
8	115.7	84.4	8063.5	4	NONLINEAR ENVELOPE		.0
	118.2	83.5					
9	120.6	82.7	8984.6	4	NONLINEAR ENVELOPE		.0
	123.1	81.9					
10	125.5	81.1	9905.7	4	NONLINEAR ENVELOPE		.0
	128.0	80.3					
11	128.0	80.3	82.4	4	NONLINEAR ENVELOPE		.0
	128.0	80.3					
12	128.1	80.3	84.5	4	NONLINEAR ENVELOPE		.0
	128.1	80.3					
13	128.2	80.3	665.9	4	NONLINEAR ENVELOPE		.0
	128.4	80.3					
14	131.2	80.3	12317.6	4	NONLINEAR ENVELOPE		.0
	134.1	80.3					
15	137.0	80.3	12609.1	4	NONLINEAR ENVELOPE		.0
	139.8	80.4					
16	142.7	80.4	13300.6	4	NONLINEAR ENVELOPE		.0
	145.5	80.4					
17	148.4	80.5	13792.1	4	NONLINEAR ENVELOPE		.0
	151.2	80.5					
18	154.1	80.5	14283.7	4	NONLINEAR ENVELOPE		.0
	156.9	80.5					
19	159.8	80.6	14775.2	4	NONLINEAR ENVELOPE		.0
	162.7	80.6					
20	165.5	80.6	15266.8	4	NONLINEAR ENVELOPE		.0
	168.4	80.7					

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 24
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	168.4	80.7					
21	171.4	80.7	16548.9	4	NONLINEAR ENVELOPE		.0
	174.4	80.7					
22	177.4	80.7	17050.1	4	NONLINEAR ENVELOPE		.0
	180.4	80.8					
23	183.4	80.8	17551.3	4	NONLINEAR ENVELOPE		.0
	186.4	80.8					
24	189.4	80.9	18052.5	4	NONLINEAR ENVELOPE		.0
	192.4	80.9					
25	195.4	80.9	18553.7	4	NONLINEAR ENVELOPE		.0
	198.4	81.0					
26	201.4	81.0	19054.8	4	NONLINEAR ENVELOPE		.0
	204.4	81.0					
27	207.4	81.0	19556.0	4	NONLINEAR ENVELOPE		.0
	210.4	81.1					

A_NC.OUT

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
28	213.4	81.1	20057.2	4	NONLINEAR	ENVELOPE	.0
	216.4	81.1					
29	219.4	81.2	20558.6	4	NONLINEAR	ENVELOPE	.0
	222.4	81.2					
30	225.4	81.2	21059.6	4	NONLINEAR	ENVELOPE	.0
	228.4	81.3					
31	230.2	81.3	13227.8	4	NONLINEAR	ENVELOPE	.0
	232.1	81.3					
32	233.9	81.3	13401.0	4	NONLINEAR	ENVELOPE	.0
	235.8	81.3					
33	235.9	81.5	662.3	4	NONLINEAR	ENVELOPE	.0
	236.0	81.6					
34	236.6	82.6	4822.6	5	.00	35.00	.0
	237.3	83.6					
35	238.7	85.7	9156.4	7	NONLINEAR	ENVELOPE	.0
	240.1	87.7					
36	241.5	89.8	8520.4	7	NONLINEAR	ENVELOPE	.0
	242.9	91.8					
37	244.3	93.9	7460.3	7	NONLINEAR	ENVELOPE	.0
	245.7	95.9					
38	247.1	98.0	7192.3	7	NONLINEAR	ENVELOPE	.0
	248.5	100.0					
39	250.2	102.5	7908.6	8	NONLINEAR	ENVELOPE	.0
	251.9	105.0					
40	253.6	107.5	6988.8	8	NONLINEAR	ENVELOPE	.0
	255.3	110.0					

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NON-CIRCULAR; RS 03/18/2002

TABLE NO. 26
```
***********************************************************
* Coordinate, Weight, Strength and Pore Water Pressure    *
* Information for Individual Slices for Conventional      *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the   *
* Case of an Automatic Search.)                           *
***********************************************************
```

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	255.3	110.0					
41	257.0	112.5	6069.0	8	NONLINEAR	ENVELOPE	.0
	258.7	115.0					
42	260.4	117.5	5188.3	9	NONLINEAR	ENVELOPE	.0
	262.1	120.0					
43	263.8	122.5	4346.8	9	NONLINEAR	ENVELOPE	.0
	265.5	125.0					
44	267.2	127.5	3505.3	9	NONLINEAR	ENVELOPE	.0
	268.9	130.0					
45	270.2	131.8	2059.0	10	NONLINEAR	ENVELOPE	.0
	271.4	133.7					
46	272.7	135.5	1653.2	10	NONLINEAR	ENVELOPE	.0
	273.9	137.3					
47	275.2	139.2	1247.3	10	NONLINEAR	ENVELOPE	.0
	276.4	141.0					

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 27
```
***********************************************************
* Seismic Forces and Forces Due to Surface Pressures for  *
* Individual Slices for Conventional Computations or the  *
* First Stage of Multi-Stage Computations.                *
* (Information is for the Critical Shear Surface in the   *
* Case of an Automatic Search.)                           *
***********************************************************
```

				FORCES DUE TO SURFACE PRESSURES			
Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
1	80.7	0.	96.1	0.	0.	.0	.0
2	83.1	0.	96.0	0.	0.	.0	.0
3	87.6	0.	95.9	0.	0.	.0	.0
4	92.9	0.	95.7	0.	0.	.0	.0
5	99.1	0.	95.5	0.	0.	.0	.0
6	105.3	0.	95.3	0.	0.	.0	.0
7	110.8	0.	95.1	0.	0.	.0	.0
8	115.7	0.	94.9	0.	0.	.0	.0
9	120.6	0.	94.7	0.	0.	.0	.0
10	125.5	0.	94.6	0.	0.	.0	.0
11	128.0	0.	94.4	0.	0.	.0	.0
12	128.1	0.	94.4	0.	0.	.0	.0
13	128.2	0.	94.4	0.	0.	.0	.0
14	131.2	0.	94.8	0.	0.	.0	.0
15	137.0	0.	95.5	0.	0.	.0	.0
16	142.7	0.	96.3	0.	0.	.0	.0
17	148.4	0.	97.0	0.	0.	.0	.0
18	154.1	0.	97.7	0.	0.	.0	.0
19	159.8	0.	98.6	0.	0.	.0	.0
20	165.5	0.	99.2	0.	0.	.0	.0
21	171.4	0.	99.9	0.	0.	.0	.0
22	177.4	0.	100.7	0.	0.	.0	.0
23	183.4	0.	101.4	0.	0.	.0	.0
24	189.4	0.	102.1	0.	0.	.0	.0
25	195.4	0.	102.9	0.	0.	.0	.0
26	201.4	0.	103.6	0.	0.	.0	.0
27	207.4	0.	104.4	0.	0.	.0	.0
28	213.4	0.	105.1	0.	0.	.0	.0
29	219.4	0.	105.9	0.	0.	.0	.0
30	225.4	0.	106.6	0.	0.	.0	.0
31	230.2	0.	107.2	0.	0.	.0	.0
32	233.9	0.	107.6	0.	0.	.0	.0
33	235.9	0.	108.0	0.	0.	.0	.0
34	236.6	0.	109.0	0.	0.	.0	.0
35	238.7	0.	111.1	0.	0.	.0	.0
36	241.5	0.	113.6	0.	0.	.0	.0
37	244.3	0.	116.1	0.	0.	.0	.0
38	247.1	0.	118.6	0.	0.	.0	.0
39	250.2	0.	121.4	0.	0.	.0	.0

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NON-CIRCULAR; RS 03/18/2002

TABLE NO. 27
```
***********************************************************
* Seismic Forces and Forces Due to Surface Pressures for  *
* Individual Slices for Conventional Computations or the  *
* First Stage of Multi-Stage Computations.                *
* (Information is for the Critical Shear Surface in the   *
* Case of an Automatic Search.)                           *
***********************************************************
```

				FORCES DUE TO SURFACE PRESSURES			
Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
40	253.6	0.	124.4	0.	0.	.0	.0
41	257.0	0.	127.4	0.	0.	.0	.0
42	260.4	0.	130.4	0.	0.	.0	.0
43	263.8	0.	133.3	0.	0.	.0	.0
44	267.2	0.	136.2	0.	0.	.0	.0
45	270.2	0.	138.7	0.	0.	.0	.0
46	272.7	0.	140.7	0.	0.	.0	.0
47	275.2	0.	142.5	0.	0.	.0	.0

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NON-CIRCULAR; RS 03/18/2002

TABLE NO. 29
```
*******************************************************************
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure    *
*******************************************************************

        Trial     Trial
        Factor   Side Force    Force      Moment                  Delta
Iter-    of     Inclination  Imbalance  Imbalance    Delta-F      Theta
ation  Safety    (degrees)    (lbs.)    (ft.-lbs.)              (degrees)

   1   3.00000    15.0000    .1494E+05  -.3022E+05
First-order corrections to F and THETA .........  -.112E+01 -.317E+01
Values factored by  .445E+00 - Deltas too large   -.500E+00 -.141E+01

   2   2.50000    13.5894    .6666E+04   .8805E+05
First-order corrections to F and THETA .........  -.418E+00 -.287E+01
Second-order correction - Iteration   1 ........  -.365E+00 -.287E+01
Second-order correction - Iteration   2 ........  -.364E+00 -.287E+01
Second-order correction - Iteration   3 ........  -.364E+00 -.287E+01

   3   2.13603    10.7237   -.2113E+03   .8788E+05
First-order corrections to F and THETA .........  -.186E-01 -.764E+00
Second-order correction - Iteration   1 ........  -.184E-01 -.764E+00
Second-order correction - Iteration   2 ........  -.184E-01 -.764E+00

   4   2.11762     9.9590    .4246E-01  -.5522E+03
First-order corrections to F and THETA .........   .175E-03  .544E-02
Second-order correction - Iteration   1 ........   .175E-03  .545E-02

   5   2.11779     9.9645   -.2792E-02   .3142E+00
First-order corrections to F and THETA .........   .351E-07 -.156E-05
```

For trial number 2 with a nonlinear strength envelope the maximum
percent change in shear strength was 41.482 - at slice 41
Material: 8 Normal stress: 1171.706
Strength from previous trial: 501.240
Estimated strength for new trial: 856.563

TABLE NO. 29
```
*******************************************************************
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure    *
*******************************************************************

        Trial     Trial
        Factor   Side Force    Force      Moment                  Delta
Iter-    of     Inclination  Imbalance  Imbalance    Delta-F      Theta
ation  Safety    (degrees)    (lbs.)    (ft.-lbs.)              (degrees)

   1   2.11779     9.9645   -.1992E+04   .1387E+06
First-order corrections to F and THETA .........   .526E-01 -.301E+00
Second-order correction - Iteration   1 ........   .538E-01 -.301E+00
Second-order correction - Iteration   2 ........   .538E-01 -.301E+00

   2   2.17160     9.6633    .1006E+01  -.2379E+04
First-order corrections to F and THETA .........   .604E-03  .239E-01
Second-order correction - Iteration   1 ........   .604E-03  .239E-01

   3   2.17219     9.6872    .6520E-02   .2388E+00
First-order corrections to F and THETA .........  -.398E-06 -.629E-05
```

For trial number 3 with a nonlinear strength envelope the maximum
percent change in shear strength was .000 - at slice 38
Material: 7 Normal stress: 1538.605
Strength from previous trial: 1093.528
Estimated strength for new trial: 1093.529

TABLE NO. 29
```
*******************************************************************
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure    *
*******************************************************************

        Trial     Trial
        Factor   Side Force    Force      Moment                  Delta
Iter-    of     Inclination  Imbalance  Imbalance    Delta-F      Theta
ation  Safety    (degrees)    (lbs.)    (ft.-lbs.)              (degrees)

   1   2.17219     9.6872    .6520E-02   .2388E+00
First-order corrections to F and THETA .........  -.398E-06 -.629E-05
```

Factor of Safety - - - - - - - - - 2.172
Side Force Inclination - - - - - - 9.69
Number of Iterations - - - - - - - 1

1
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NON-CIRCULAR; RS 03/18/2002

TABLE NO. 38
```
**************************************************************
* Final Results for Stresses Along the Shear Surface        *
* (Results for Critical Shear Surface in Case of a Search.) *
**************************************************************
```

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 2.172 Side Force Inclination = 9.69 Degrees

-------- VALUES AT CENTER OF BASE OF SLICE--------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
1	80.7	96.0	16.2	16.2	1.6
2	83.1	95.2	201.1	201.1	19.8
3	87.6	93.7	538.4	538.4	53.0
4	92.9	92.0	843.2	843.2	83.0
5	99.1	89.9	1115.4	1115.4	109.9
6	105.3	87.8	1387.7	1387.7	136.7
7	110.8	86.0	1628.9	1628.9	160.4
8	115.7	84.4	1839.0	1839.0	181.1
9	120.6	82.7	2048.0	2048.0	199.8
10	125.5	81.1	2253.0	2253.0	211.1
11	128.0	80.3	2356.3	2356.3	216.7
12	128.1	80.3	2143.1	2143.1	205.1
13	128.2	80.3	2143.1	2143.1	205.1
14	131.2	80.3	2166.5	2166.5	207.4
15	137.0	80.3	2273.2	2273.2	212.2
16	142.7	80.4	2359.9	2359.9	216.9
17	148.4	80.5	2446.6	2446.6	221.7
18	154.1	80.5	2533.3	2533.3	226.4
19	159.8	80.6	2620.0	2620.0	231.2
20	165.5	80.6	2706.6	2706.6	235.9
21	171.4	80.7	2792.0	2792.0	240.6
22	177.4	80.7	2876.2	2876.2	245.2
23	183.4	80.8	2960.3	2960.3	249.8

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24	189.4	80.9	3044.4	3044.4	256.4
25	195.4	80.9	3128.6	3128.6	259.0
26	201.4	81.0	3212.7	3212.7	263.7
27	207.4	81.0	3296.8	3296.8	268.1
28	213.4	81.1	3380.9	3380.9	272.9
29	219.4	81.2	3465.1	3465.1	277.5
30	225.4	81.2	3549.2	3549.2	282.1
31	230.2	81.3	3614.8	3614.8	285.7
32	233.9	82.3	3662.0	3662.0	288.3
33	235.9	82.5	2661.6	2661.6	233.5
34	236.6	82.6	2107.2	2107.2	679.2
35	238.7	85.7	1976.5	3376.5	636.4
36	241.5	89.8	1830.8	1830.8	590.8
37	244.3	93.9	1684.7	1684.7	547.1
38	247.1	98.0	1538.6	1538.6	503.4
39	250.2	102.5	1383.1	1383.1	456.9

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
40	253.6	107.5	1218.2	1218.2	407.6
41	257.0	112.5	1053.4	1053.4	356.3
42	260.4	117.5	895.5	895.5	313.2
43	263.8	122.5	744.7	744.7	266.1
44	267.2	127.5	583.7	583.7	230.7
45	270.2	131.8	419.9	419.9	230.7
46	272.7	135.5	290.0	290.0	230.7
47	275.1	139.2	160.0	160.0	230.7

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .01 (= .110E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .03 (= .258E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -.04 (= -.417E-01)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .248E-02)
SHOULD NOT EXCEED .100E+03
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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 33
****
* Final Results for Side Forces and Stresses Between Slices. *
* (Results for Critical Sheer Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 2.172 Side Force Inclination = 9.69 Degrees

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	60.9	3.	96.1	.432	7.1	16.9
2	85.4	396.	95.6	.396	51.2	221.5
3	89.8	1447.	94.7	.319	-22.9	545.3
4	96.0	3731.	93.8	.313	-49.5	660.8
5	102.2	6753.	92.9	.315	-58.8	1209.4
6	108.4	10511.	91.9	.315	-71.5	1346.7
7	113.3	14014.	91.2	.314	-84.6	1528.3
8	118.2	17968.	90.4	.313	-98.3	1708.4
9	123.1	22362.	89.7	.312	-112.1	1885.3
10	124.0	27152.	88.9	.312	-123.4	2054.4
11	230.0	27192.	88.9	.312	-123.7	2055.8
12	220.1	27189.	88.9	.312	-123.5	2055.4
13	128.4	27258.	88.9	.312	-121.7	2052.5
14	134.1	28333.	89.6	.317	-92.5	2005.3
15	139.8	29430.	90.2	.321	-69.2	1967.2
16	145.5	30550.	90.8	.324	-50.8	1936.6
17	151.2	31692.	91.4	.327	-36.4	1912.3
18	156.9	32857.	91.9	.329	-25.3	1893.4
19	162.7	34045.	92.5	.330	-16.9	1878.9
20	168.4	35255.	93.1	.331	-10.7	1868.4
21	174.4	36549.	93.6	.332	-6.2	1860.8
22	180.4	37867.	94.2	.333	-3.4	1856.2
23	186.4	39207.	94.7	.333	-1.9	1854.2
24	192.4	40578.	95.3	.333	-1.6	1854.5
25	198.4	41956.	95.8	.333	-2.4	1856.8
26	204.4	43366.	96.3	.333	-3.9	1860.7
27	210.4	44798.	96.8	.332	-6.2	1866.2
28	216.4	46253.	97.4	.332	-9.1	1873.0
29	222.4	47731.	97.9	.331	-12.5	1881.1
30	228.4	49231.	98.4	.330	-16.3	1890.1
31	232.1	50168.	98.7	.330	-18.8	1896.2
32	235.8	51112.	99.0	.330	-21.5	1902.5
33	236.0	50433.	99.2	.331	-13.7	1877.4
34	237.3	47073.	100.7	.330	-16.3	1832.1
35	240.1	40651.	103.6	.328	-24.3	1684.2
36	242.9	34712.	106.4	.326	-32.4	1557.4
37	245.7	29258.	109.3	.323	-41.6	1432.4
38	248.5	24287.	112.2	.319	-52.2	1305.8
39	251.9	18945.	115.6	.313	-66.5	1162.4
40	255.3	14078.	119.0	.304	-82.4	1014.5

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
41	258.7	9772.	122.4	.291	-98.6	865.8
42	262.1	6505.	125.8	.271	-112.0	709.1
43	265.5	3646.	129.2	.244	-111.4	526.3
44	268.9	1482.	132.7	.209	-83.1	304.9
45	271.4	505.	135.4	.167	-49.1	147.3
46	273.9	11.	139.0	.229	-.9	3.5
47	276.4	0.	107.0	BELOW	.0	.0

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .01 (= .110E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .03 (= .258E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -.04 (= -.417E-01)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .248E-02)
SHOULD NOT EXCEED .100E+03

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED

B_NC.DAT

```
HEADING
OAK HARBOCK DISPOSAL FACILITY
STABILITY ANALYSES - 96 FEET
NON-CIRCULAR; RS 03/18/2002
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
1200 -80

2  2  SAND - MAT. 2
-500 80
1200 80

3  3  BERM - MAT. 3
0 80
48 96
80 96
128 80
1200 90.880

4  4  LINER - MAT. 4
80 96
80.904 96.226
128.079 80.501
1200 91.380

5  5  PROTECTIVE LAYER - MAT. 5
80.904 96.226
88.819 95.362
128.394 82.504
1200 93.380

6  6  FINAL COVER - MAT. 6
80.904 96.226
408.369 178
1200 178

7  7  MSW A - MAT. 7
88.819 95.362
108.369 100
1200 100

8  8  MSW B - MAT. 8
108.369 100
168.369 115
1200 115

9  9  MSW C - MAT. 9
168.369 115
228.369 130
1200 130

10  10  MSW D - MAT. 10
228.369 130
288.369 145
1200 145

11  11  MSW E - MAT. 11
288.369 145
348.369 160
1200 160

12  12  MSW F - MAT. 12
348.369 160
408.369 175
1200 175


MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
2 SAND - MAT. 2
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    2
3 BERM - MAT. 3
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
4 LINER - MAT. 4
    110
    Nonlinear Mohr-Coulomb
    -1000 0
    0 0
    2005 419
    5013 787
    10025 1143
    15038 1594
    18000 1908

    Piezometric Line
    2
5  PROTECTIVE LAYER - MAT. 5
    110
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
6 FINAL COVER - MAT. 6
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
7 MSW A - MAT. 7
    47.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -1 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
8 MSW B - MAT. 8
    43.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -200 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
9 MSW C - MAT. 9
    38.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
10 MSW D - MAT. 10
    33.4
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
11 MSW E - MAT. 11
    48.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
12 MSW F - MAT. 12
    22.6
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1

PIEZOMETRIC LINE DATA
1 62.4 PHREATIC
-500 80
1000 80


ANAlysis/computation data follow -
NonCircular
80.452 96.113 FIX
128.039 80.250 FIX
109.18 82.06
399.54 165

FACTOR OF SAFETY
1.0
ITE
100
SHORT

Plot
COMpute
```

B_NC.OUT

```
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        TABLE NO. 1
        ***************************************
        * COMPUTER PROGRAM DESIGNATION - UTEXAS3 *
        * Originally Coded By Stephen G. Wright  *
        * Version No. 1.206                      *
        * Last Revision Date  6/ 4/96            *
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        * All Rights Reserved                    *
        ***************************************


        ************************************************************
        *                                                          *
        *      RESULTS OF COMPUTATIONS PERFORMED USING THIS COMPUTER *
        * PROGRAM SHOULD NOT BE USED FOR DESIGN PURPOSES UNLESS THEY *
        * HAVE BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL   *
        * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE   *
        * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER  *
        * PROGRAM AND MUST HAVE READ ALL DOCUMENTATION FOR THIS      *
        * PROGRAM BEFORE ATTEMPTING ITS USE.                         *
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        OAK HAMMOCK DISPOSAL FACILITY
        STABILITY ANALYSES - 98 FEET
        NON-CIRCULAR; RS 03/18/2002

        TABLE NO. 2
        ************************
        * NEW PROFILE LINE DATA *
        ************************

        PROFILE LINE  1 - MATERIAL TYPE =  1
        HAWTHORNE - MAT. 1

             Point       X             Y

               1      -500.000       -80.000
               2      1200.000       -80.000

        PROFILE LINE  2 - MATERIAL TYPE =  2
        SAND - MAT. 2

             Point       X             Y

               1      -500.000        80.000
               2      1200.000        80.000

        PROFILE LINE  3 - MATERIAL TYPE =  3
        BERM - MAT. 3

             Point       X             Y

               1          .000        80.000
               2        48.000        96.000
               3        80.000        96.000
               4       128.000        80.000
               5      1200.000        90.880

        PROFILE LINE  4 - MATERIAL TYPE =  4
        LINER - MAT. 4

             Point       X             Y

               1        80.000        96.000
               2        80.904        96.226
               3       128.079        80.501
               4      1200.000        91.380

        PROFILE LINE  5 - MATERIAL TYPE =  5
        PROTECTIVE LAYER - MAT. 5

             Point       X             Y

               1        80.904        96.226
               2        89.819        95.362
               3       128.394        82.504
               4      1200.000        93.380

        PROFILE LINE  6 - MATERIAL TYPE =  6
        FINAL COVER - MAT. 6

             Point       X             Y

               1        80.904        96.226
               2       408.369       178.000
               3      1200.000       178.000

        PROFILE LINE  7 - MATERIAL TYPE =  7
        MSW A - MAT. 7

             Point       X             Y

               1        89.819        95.362
               2       108.369       100.000
               3      1200.000       100.000

        PROFILE LINE  8 - MATERIAL TYPE =  8
        MSW B - MAT. 8

             Point       X             Y

               1       108.369       100.000
               2       168.369       115.000
               3      1200.000       115.000

        PROFILE LINE  9 - MATERIAL TYPE =  9
        MSW C - MAT. 9

             Point       X             Y

               1       168.369       115.000
               2       228.369       130.000
               3      1200.000       130.000

        PROFILE LINE 10 - MATERIAL TYPE = 10
        MSW D - MAT. 10

             Point       X             Y

               1       228.369       130.000
               2       288.369       145.000
               3      1200.000       145.000

        PROFILE LINE 11 - MATERIAL TYPE = 11
        MSW E - MAT. 11

             Point       X             Y

               1       288.369       145.000
               2       348.369       160.000
               3      1200.000       160.000

        PROFILE LINE 12 - MATERIAL TYPE = 12
        MSW F - MAT. 12

             Point       X             Y

               1       348.369       160.000
               2       408.369       175.000
               3      1200.000       175.000

        All new profile lines defined - No old lines retained
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        STABILITY ANALYSES - 98 FEET
        NON-CIRCULAR; RS 03/18/2002

        TABLE NO.  3
        ************************************************************
        * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ************************************************************

        DATA FOR MATERIAL TYPE  1
        HAWTHORNE - MAT. 1

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  2
        SAND - MAT. 2

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  3
        BERM - MAT. 3

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  4
        LINER - MAT. 4

             Unit weight of material =  110.000

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2               .000              .000
               3           2805.000           629.000
               4           5013.000           747.000
               5          10025.000          1143.000
               6          15038.000          1594.000
               7          18090.000          1908.000

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  5
        PROTECTIVE LAYER - MAT. 5

             Unit weight of material =  110.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  6
        FINAL COVER - MAT. 6

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  7
        MSW A - MAT. 7

             Unit weight of material =  67.500

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2             -1.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
               7            835.400           616.867
               8           5221.250          3485.038

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  8
        MSW B - MAT. 8

             Unit weight of material =  63.100

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2           -100.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
```

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7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 9
MSW C - MAT. 9

Unit weight of material = 58.500

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 10
MSW D - MAT. 10

Unit weight of material = 59.400

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 11
MSW E - MAT. 11

Unit weight of material = 46.100

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 12
MSW F - MAT. 12

Unit weight of material = 22.600

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

All new material properties defined - No old data retained
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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 5
****
* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
****

Line No.	Point	X	Y	
1 - Unit weight of water = 62.40				PHREATIC
1	1	-500.000	80.000	PHREATIC
1	2	1000.000	80.000	PHREATIC

All new piezometric lines defined - No old lines retained
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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 15
****
* NEW ANALYSIS/COMPUTATION DATA *
****

Noncircular Shear Surface(s)

Computations Performed for Single Shear Surface

Shear Surface Coordinates -

Point	X	Y
1	80.452	96.113
2	128.039	80.250
3	309.180	82.060
4	399.540	165.000

Initial trial estimate for the factor of safety = 1.000

Maximum number of iterations allowed for
calculating the factor of safety = 100

Short form of output will be used for search

THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

Initial trial estimate for side force inclination = 15.000 degrees
(Applicable to Spencer's procedure only)

Allowed force imbalance for convergence = 100.000

Allowed moment imbalance for convergence = 100.000

Number of increments for slice subdivision = 30

Depth of water in crack = .000

Unit weight of water in crack = 62.400

Seismic coefficient = .000

Conventional (single-stage) computations to be performed

Procedure used to compute the factor of safety: SPENCER
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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 16
****
* NEW SLOPE GEOMETRY DATA *
****

NOTE - NO DATA WERE INPUT, SLOPE GEOMETRY DATA
WERE GENERATED BY THE PROGRAM

Slope Coordinates -

Point	X	Y
1	-500.000	80.000
2	.000	80.000
3	48.000	96.000
4	80.000	96.000
5	80.904	96.224
6	408.369	178.000
7	1200.000	178.000

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 24
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	80.5	96.1					
1	80.7	96.9	6.6	4	NONLINEAR ENVELOPE		.0
	80.9	96.0					
2	85.4	94.5	2945.0	4	NONLINEAR ENVELOPE		.0
	89.8	93.0					
3	94.5	91.4	7551.1	4	NONLINEAR ENVELOPE		.0
	99.1	89.9					
4	103.7	88.4	10935.5	4	NONLINEAR ENVELOPE		.0
	108.4	86.8					
5	113.3	85.2	15205.8	4	NONLINEAR ENVELOPE		.0
	118.2	83.5					
6	123.1	81.9	18870.3	4	NONLINEAR ENVELOPE		.0
	128.0	80.3					
7	128.0	80.3	82.4	4	NONLINEAR ENVELOPE		.0
	128.0	80.3					
8	128.1	80.3	84.5	4	NONLINEAR ENVELOPE		.0
	128.1	80.3					
9	128.2	80.3	665.9	4	NONLINEAR ENVELOPE		.0
	128.4	80.3					
10	131.4	80.3	21878.4	4	NONLINEAR ENVELOPE		.0
	134.4	80.4					
11	143.4	80.4	23383.8	4	NONLINEAR ENVELOPE		.0
	148.4	80.5					
12	151.4	80.5	24889.3	4	NONLINEAR ENVELOPE		.0
	156.4	80.6					
13	163.4	80.6	26394.8	4	NONLINEAR ENVELOPE		.0
	168.4	80.7					
14	173.4	80.7	27860.7	4	NONLINEAR ENVELOPE		.0
	178.4	80.8					
15	183.4	80.8	29253.0	4	NONLINEAR ENVELOPE		.0
	188.4	80.9					
16	193.4	80.9	30645.3	4	NONLINEAR ENVELOPE		.0
	198.4	81.0					
17	203.4	81.0	32037.7	4	NONLINEAR ENVELOPE		.0
	208.4	81.1					
18	213.4	81.1	33430.0	4	NONLINEAR ENVELOPE		.0
	218.4	81.2					
19	223.4	81.2	34822.4	4	NONLINEAR ENVELOPE		.0
	228.4	81.3					
20	233.4	81.3	36150.9	4	NONLINEAR ENVELOPE		.0
	238.4	81.4					

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 24
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	238.4	81.4					
21	243.4	81.4	37415.8	4	NONLINEAR ENVELOPE		.0
	248.4	81.5					
22	253.4	81.5	38680.6	4	NONLINEAR ENVELOPE		.0
	258.4	81.6					
23	263.4	81.6	39945.5	4	NONLINEAR ENVELOPE		.0
	268.4	81.7					
24	273.4	81.7	41210.3	4	NONLINEAR ENVELOPE		.0
	278.4	81.8					
25	283.4	81.8	42475.1	4	NONLINEAR ENVELOPE		.0
	288.4	81.9					
26	293.6	81.9	45468.5	4	NONLINEAR ENVELOPE		.0
	298.8	82.0					
27	304.0	82.0	46694.7	4	NONLINEAR ENVELOPE		.0
	309.2	82.1					

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28	309.3	82.2	1393.3	4	NONLINEAR ENVELOPE	.0
	309.5	83.3				
29	310.6	83.4	9741.3	5	.00 35.00	.0
	311.7	84.4				
30	314.5	87.0	23747.6	7	NONLINEAR ENVELOPE	.0
	317.4	89.6				
31	320.2	92.2	22136.6	7	NONLINEAR ENVELOPE	.0
	323.0	94.8				
32	325.9	97.4	20525.6	7	NONLINEAR ENVELOPE	.0
	328.7	100.0				
33	331.4	102.5	18337.0	8	NONLINEAR ENVELOPE	.0
	334.2	105.0				
34	336.9	107.5	16874.2	8	NONLINEAR ENVELOPE	.0
	339.6	110.0				
35	342.3	122.5	15513.3	8	NONLINEAR ENVELOPE	.0
	345.1	115.0				
36	346.7	116.5	8742.4	9	NONLINEAR ENVELOPE	.0
	348.4	118.0				
37	351.6	121.0	15830.2	9	NONLINEAR ENVELOPE	.0
	354.9	124.0				
38	358.1	127.0	33786.3	9	NONLINEAR ENVELOPE	.0
	361.4	130.0				
39	364.1	132.5	10020.7	10	NONLINEAR ENVELOPE	.0
	366.9	135.0				
40	369.6	137.5	8732.9	10	NONLINEAR ENVELOPE	.0
	372.3	140.0				

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 26

* Coordinate, Height, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	372.3	140.0					
41	375.0	142.5	7445.1	10	NONLINEAR ENVELOPE		.0
	377.8	145.0					
42	380.5	147.5	6229.5	11	NONLINEAR ENVELOPE		.0
	383.2	150.0					
43	385.9	152.5	5086.0	11	NONLINEAR ENVELOPE		.0
	388.6	155.0					
44	391.4	157.5	3942.6	11	NONLINEAR ENVELOPE		.0
	394.1	160.0					
45	396.8	162.5	3146.5	12	NONLINEAR ENVELOPE		.0
	399.5	165.0					

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 27

* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
1	80.7	0.	96.1	0.	0.	.0	.0
2	85.4	0.	95.9	0.	0.	.0	.0
3	94.5	0.	95.7	0.	0.	.0	.0
4	103.7	0.	95.4	0.	0.	.0	.0
5	113.3	0.	95.0	0.	0.	.0	.0
6	123.1	0.	94.6	0.	0.	.0	.0
7	128.0	0.	94.4	0.	0.	.0	.0
8	128.1	0.	94.4	0.	0.	.0	.0
9	128.2	0.	94.4	0.	0.	.0	.0
10	133.4	0.	95.1	0.	0.	.0	.0
11	143.4	0.	96.4	0.	0.	.0	.0
12	153.4	0.	97.6	0.	0.	.0	.0
13	163.4	0.	98.9	0.	0.	.0	.0
14	173.4	0.	100.2	0.	0.	.0	.0
15	183.4	0.	101.4	0.	0.	.0	.0
16	193.4	0.	102.6	0.	0.	.0	.0
17	203.4	0.	103.9	0.	0.	.0	.0
18	213.4	0.	105.1	0.	0.	.0	.0
19	223.4	0.	106.4	0.	0.	.0	.0
20	233.4	0.	107.6	0.	0.	.0	.0
21	243.4	0.	108.8	0.	0.	.0	.0
22	253.4	0.	109.9	0.	0.	.0	.0
23	263.4	0.	111.1	0.	0.	.0	.0
24	273.4	0.	112.3	0.	0.	.0	.0
25	283.4	0.	113.6	0.	0.	.0	.0
26	293.6	0.	114.7	0.	0.	.0	.0
27	304.0	0.	115.9	0.	0.	.0	.0
28	309.3	0.	116.7	0.	0.	.0	.0
29	320.6	0.	117.8	0.	0.	.0	.0
30	314.5	0.	120.5	0.	0.	.0	.0
31	320.2	0.	123.5	0.	0.	.0	.0
32	325.9	0.	127.5	0.	0.	.0	.0
33	331.4	0.	130.9	0.	0.	.0	.0
34	336.9	0.	134.3	0.	0.	.0	.0
35	342.3	0.	137.7	0.	0.	.0	.0
36	346.7	0.	140.4	0.	0.	.0	.0
37	351.6	0.	143.2	0.	0.	.0	.0
38	358.1	0.7	147.0	0.	0.	.0	.0
39	364.1	0.	150.5	0.	0.	.0	.0

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 27

* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
40	369.6	0.	153.7	0.	0.	.0	.0
41	375.0	0.	157.0	0.	0.	.0	.0
42	380.5	0.	160.4	0.	0.	.0	.0
43	385.9	0.	163.8	0.	0.	.0	.0
44	391.4	0.	167.7	0.	0.	.0	.0
45	396.8	0.	171.2	0.	0.	.0	.0

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 29

* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	1.00000	15.0000	.4878E+05	.5965E+05		
First-order corrections to F and THETA					-.165E+00	-.239E+01
Values factored by .303E+00 - Deltas too large					-.50CE+00	-.722E+00
2	1.50000	14.2779	.3101E+05	.1744E+06		
First-order corrections to F and THETA					-.762E+00	-.253E+01
Values factored by .456E+00 - Deltas too large					-.500E+00	-.166E+01
3	2.00000	12.6207	.5399E+04	.4233E+06		
First-order corrections to F and THETA					-.114E+00	-.235E+01
Second-order correction - Iteration 1					-.108E+00	-.235E+01
Second-order correction - Iteration 2					-.108E+00	-.235E+01
4	1.89225	10.2672	-.2263E+02	.7163E+05		
First-order corrections to F and THETA					-.359E-02	-.311E+00
Second-order correction - Iteration 1					-.358E-02	-.311E+00
Second-order correction - Iteration 2					-.358E-02	-.311E+00
5	1.88868	9.9564	.1273E-01	.4657E+02		
First-order corrections to F and THETA					-.287E-05	-.217E-03

For trial number 2 with a nonlinear strength envelope the maximum percent change in shear strength was 19.643 - at slice 42
Material: 11 Normal stress: 815.221
Strength from previous trial: 501.240
Estimated strength for new trial: 623.763

TABLE NO. 29

* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	1.88868	9.9564	-.3797E+03	.3246E+05		
First-order corrections to F and THETA					.431E-01	-.630E-01
Second-order correction - Iteration 1					.432E-02	-.630E-01
Second-order correction - Iteration 2					.432E-02	-.630E-01
2	1.89299	9.8935	.1167E-01	-.1184E+01		
First-order corrections to F and THETA					.611E-05	.525E-03
Second-order correction - Iteration 1					.614E-05	.528E-03
3	1.89300	9.8940	-.1859E-01	.1669E+01		
First-order corrections to F and THETA					.208E-06	-.339E-05

For trial number 3 with a nonlinear strength envelope the maximum percent change in shear strength was .000 - at slice 15
Material: 4 Normal stress: 2967.339
Strength from previous trial: 543.534
Estimated strength for new trial: 543.534

TABLE NO. 29

* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	1.89300	9.8940	-.1859E-01	.1669E+01		
First-order corrections to F and THETA					.208E-06	-.339E-05

Factor of Safety - - - - - - - - - 1.893
Side Force Inclination - - - - - - 9.89
Number of Iterations - - - - - - - 1

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 30

* Final Results for Stresses Along the Shear Surface *
* (Results for Critical Shear Surface in Case of a Search.) *

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 1.893 Side Force Inclination = 9.89 Degrees

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
1	80.7	96.0	16.4	16.4	1.9
2	85.4	94.5	373.5	373.5	43.2
3	94.5	91.4	920.5	920.5	106.0
4	103.7	88.4	1333.0	1333.0	150.7
5	113.3	85.2	1751.5	1751.5	198.0
6	123.1	81.9	2171.2	2171.2	237.1
7	128.0	80.3	2378.2	2378.2	250.1
8	128.1	80.3	2148.8	2148.8	235.7
9	128.2	80.3	2148.8	2148.8	235.7
10	133.4	80.3	2224.9	2224.9	240.4
11	143.4	80.4	2376.8	2376.8	250.6
12	153.4	80.5	2528.8	2528.8	259.6
13	163.4	80.6	2680.7	2680.7	269.1
14	173.4	80.7	2826.9	2826.9	278.3
15	183.4	80.8	2967.3	2967.3	287.1
16	193.4	80.9	3107.8	3107.8	296.0
17	203.4	81.0	3248.2	3248.2	304.8
18	213.4	81.1	3388.7	3388.7	313.6
19	223.4	81.2	3529.1	3529.1	322.4
20	233.4	81.3	3669.1	3669.1	330.9
21	243.4	81.4	3790.7	3790.7	338.9
22	253.4	81.5	3918.3	3918.3	346.9
23	263.4	81.6	4045.9	4045.9	354.9
24	273.4	81.7	4173.4	4173.4	363.0
25	283.4	81.8	4301.0	4301.0	371.0
26	293.6	81.9	4424.2	4424.2	378.7
27	304.0	82.0	4543.1	4543.1	386.2
28	309.3	82.2	3694.0	3694.0	331.8
29	310.6	83.4	2041.1	2041.1	1139.7
30	314.5	87.0	2929.3	2929.2	1654.7

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31	320.2	92.2	2726.7	2726.7	985.9
32	325.9	97.4	2528.2	2528.2	937.2
33	331.4	102.5	2339.6	2339.6	852.4
34	336.9	107.5	2162.8	2162.8	791.8
35	342.3	112.5	1986.0	1986.0	731.1
36	346.7	116.5	1848.9	1848.9	684.1
37	351.6	121.0	1689.5	1689.5	629.4
38	356.1	127.0	1468.0	1468.0	553.5
39	364.1	132.5	1273.7	1273.7	486.8

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
40	369.6	137.5	1166.7	1166.7	429.5
41	375.0	142.5	939.6	939.6	372.2
42	380.5	147.5	781.9	781.9	319.1
43	385.9	152.5	633.6	633.6	267.2
44	391.4	157.5	654.2	654.2	264.8
45	396.8	162.5	528.2	528.2	264.8

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .02 (= .209E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .04 (= .440E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -.82 (= -.821E+00)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .477E-02)
SHOULD NOT EXCEED .100E+03
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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 39
****
* Final Results for Side Forces and Stresses Between Slices. *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 1.893 Side Force Inclination = 9.89 Degrees

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	80.9	3.	94.1	.435	7.7	17.4
2	89.8	1512.	93.3	.415	134.?	411.2
3	99.1	5381.	93.4	.336	8.3	967.0
4	108.4	10983.	92.1	.326	-31.2	1360.6
5	118.2	18773.	90.6	.320	-65.1	1744.3
6	128.0	28346.	89.1	.316	-93.7	2106.2
7	128.0	28388.	89.1	.318	-93.8	2109.4
8	128.1	28396.	89.1	.318	-93.7	2109.4
9	128.4	28465.	89.1	.318	-92.2	2107.3
10	138.4	30678.	90.2	.324	-55.2	2054.8
11	148.4	32974.	91.2	.328	-33.4	2033.0
12	158.4	35350.	92.1	.330	-17.5	2006.4
13	168.4	37809.	93.1	.332	-10.2	2001.2
14	178.4	40347.	94.0	.332	-7.6	2004.4
15	188.4	42961.	94.9	.332	-8.5	2013.9
16	198.4	45650.	95.7	.331	-12.0	2028.3
17	208.4	48414.	96.6	.330	-17.4	2046.7
18	218.4	51254.	97.4	.329	-24.2	2068.4
19	228.4	54169.	98.2	.328	-32.7	2092.4
20	238.4	57156.	99.1	.327	-40.9	2118.8
21	248.4	60212.	99.9	.325	-50.1	2146.4
22	258.4	63336.	100.7	.324	-59.7	2175.1
23	268.4	66528.	101.4	.322	-69.5	2204.8
24	278.4	69790.	102.2	.321	-79.5	2235.3
25	288.4	73119.	103.0	.320	-89.7	2266.5
26	298.8	76652.	103.8	.318	-100.1	2299.4
27	309.2	80252.	104.6	.317	-110.8	2332.4
28	309.5	79298.	104.9	.318	-99.9	2301.5
29	311.7	75522.	106.4	.317	-104.7	2245.9
30	317.4	66104.	110.2	.314	-113.2	2095.6
31	323.0	57351.	114.0	.311	-121.9	1947.2
32	328.7	49262.	117.9	.307	-131.0	1801.2
33	334.2	42181.	121.5	.303	-139.6	1662.4
34	339.6	35502.	125.1	.298	-147.2	1525.2
35	345.1	29465.	128.8	.292	-153.5	1383.7
36	348.4	26070.	131.0	.288	-156.1	1297.6
37	354.9	19972.	135.3	.278	-159.6	1124.1
38	361.4	14717.	139.6	.266	-162.2	961.6
39	366.9	10944.	143.2	.252	-161.9	822.7
40	372.3	7702.	146.8	.233	-157.0	680.3

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
41	377.8	4991.	150.3	.209	-145.0	532.8
42	383.2	2741.	153.8	.177	-118.6	370.8
43	388.6	1043.	157.3	.155	-60.7	174.4
44	394.1	202.	162.0	.140	-16.0	43.5
45	399.5	0.	124.6	BELOW	.0	.0

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .02 (= .209E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .04 (= .440E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -.82 (= -.821E+00)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .477E-02)
SHOULD NOT EXCEED .100E+03

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED

C_NC.DAT

```
HEADING
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
1200 -80

2  2  SAND - MAT. 2
-500 80
1200 80

3  3  BERM - MAT. 3
0 80
48 96
80 96
128 80
1200 90.880

4  4  LINER - MAT. 4
80 96
80.904 96.226
128.079 80.501
1200 91.380

5  5  PROTECTIVE LAYER - MAT. 5
80.904 96.226
89.819 95.362
128.394 82.504
1200 93.380

6  6  FINAL COVER - MAT. 6
80.904 96.226
408.365 178
1200 178

7  7  MSW A - MAT. 7
89.819 95.362
208.369 100
1200 100

8  8  MSW B - MAT. 8
208.369 100
168.369 115
1200 115

9  9  MSW C - MAT. 9
168.369 115
228.369 130
1200 130

10  10  MSW D - MAT. 10
228.369 130
288.369 145
1200 145

11  11  MSW E - MAT. 11
288.369 145
348.369 160
1200 160

12  12  MSW F - MAT. 12
348.369 160
408.369 175
1200 175


MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
2 SAND - MAT. 2
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
3 BERM - MAT. 3
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
4 LINER - MAT. 4
    110
    Nonlinear Mohr-Coulomb
    -1000 0
    0 0
    2005 429
    5013 787
    10025 1343
    15038 1594
    18000 1908

    Piezometric Line
    1
5  PROTECTIVE LAYER - MAT. 5
    110
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
6 FINAL COVER - MAT. 6
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
7 MSW A - MAT. 7
    67.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -1 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
8 MSW B - MAT. 8
    63.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
9 MSW C - MAT. 9
    58.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
10 MSW D - MAT. 10
    53.4
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
11 MSW E - MAT. 11
    48.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1
12 MSW F - MAT. 12
    22.6
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03818

    Piezometric Line
    1

PIEZOMETRIC LINE DATA
1 62.4 PHREATIC
-500 80
1000 80


ANALysis/computation data follow -
NonCircular
80.452 96.113
128.039 80.250
386.460 82.835
446.291 170

FACTOR OF SAFETY
3.0
ITE
100
SHORT

Plot
COMpute
```

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```
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        TABLE NO. 1
        ***********************************
        * COMPUTER PROGRAM DESIGNATION - UTEXAS3 *
        * Originally Coded By Stephen G. Wright  *
        * Version No. 1.206                      *
        * Last Revision Date  6/ 4/96            *
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        * All Rights Reserved                    *
        ***********************************


        ************************************************************
        *                                                          *
        *      RESULTS OF COMPUTATIONS PERFORMED USING THIS COMPUTER *
        * PROGRAM SHOULD NOT BE USED FOR DESIGN PURPOSES UNLESS THEY *
        * HAVE BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL   *
        * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE   *
        * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER  *
        * PROGRAM AND MUST HAVE READ ALL DOCUMENTATION FOR THIS      *
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        *                                                          *
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        *                                                          *
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        OAK HAMMOCK DISPOSAL FACILITY
        STABILITY ANALYSES - 96 FEET
        NON-CIRCULAR; RS 03/18/2002

        TABLE NO. 2
        ************************
        * NEW PROFILE LINE DATA *
        ************************

        PROFILE LINE  1 - MATERIAL TYPE =  1
        HAWTHORNE - MAT. 1

             Point        X              Y

               1       -500.000        -80.000
               2       1200.000        -80.000

        PROFILE LINE  2 - MATERIAL TYPE =  2
        SAND - MAT. 2

             Point        X              Y

               1       -500.000         80.000
               2       1200.000         80.000

        PROFILE LINE  3 - MATERIAL TYPE =  3
        BERM - MAT. 3

             Point        X              Y

               1           .000         80.000
               2         48.000         96.000
               3         80.000         96.000
               4        128.000         80.000
               5       1200.000         80.880

        PROFILE LINE  4 - MATERIAL TYPE =  4
        LINER - MAT. 4

             Point        X              Y

               1         80.000         96.000
               2         80.904         96.226
               3        128.079         80.501
               4       1200.000         81.380

        PROFILE LINE  5 - MATERIAL TYPE =  5
        PROTECTIVE LAYER - MAT. 5

             Point        X              Y

               1         80.904         96.226
               2         89.819         95.362
               3        128.394         82.504
               4       1200.000         83.380

        PROFILE LINE  6 - MATERIAL TYPE =  6
        FINAL COVER - MAT. 6

             Point        X              Y

               1         80.904         96.226
               2        408.369        178.000
               3       1200.000        178.000

        PROFILE LINE  7 - MATERIAL TYPE =  7
        MSW A - MAT. 7

             Point        X              Y

               1         89.819         95.362
               2        108.369        100.000
               3       1200.000        100.000

        PROFILE LINE  8 - MATERIAL TYPE =  8
        MSW B - MAT. 8

             Point        X              Y

               1        108.369        100.000
               2        168.369        115.000
               3       1200.000        115.000

        PROFILE LINE  9 - MATERIAL TYPE =  9
        MSW C - MAT. 9

             Point        X              Y

               1        168.369        115.000
               2        228.369        130.000
               3       1200.000        130.000

        PROFILE LINE 10 - MATERIAL TYPE = 10
        MSW D - MAT. 10

             Point        X              Y

               1        228.369        130.000
               2        288.369        145.000
               3       1200.000        145.000

        PROFILE LINE 11 - MATERIAL TYPE = 11
        MSW E - MAT. 11

             Point        X              Y

               1        288.369        145.000
               2        348.369        160.000
               3       1200.000        160.000

        PROFILE LINE 12 - MATERIAL TYPE = 12
        MSW F - MAT. 12

             Point        X              Y

               1        348.369        160.000
               2        408.369        175.000
               3       1200.000        175.000

        All new profile lines defined - No old lines retained
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        STABILITY ANALYSES - 96 FEET
        NON-CIRCULAR; RS 03/18/2002

        TABLE NO. 3
        ************************************************************
        * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ************************************************************

        DATA FOR MATERIAL TYPE  1
        HAWTHORNE - MAT. 1

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  2
        SAND - MAT. 2

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  3
        BERM - MAT. 3

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  4
        LINER - MAT. 4

             Unit weight of material =  120.000

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2              .000              .000
               3           2005.000           429.000
               4           5013.000           787.000
               5          10025.000          1143.000
               6          15038.000          1594.000
               7          18000.000          1908.000

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  5
        PROTECTIVE LAYER - MAT. 5

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  6
        FINAL COVER - MAT. 6

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  7
        MSW A - MAT. 7

             Unit weight of material =   67.500

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2             -1.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
               7            835.400           634.867
               8           5221.250          3485.038

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  8
        MSW B - MAT. 8

             Unit weight of material =   63.100

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2           -100.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
```

C_NC.OUT

7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 9
MSW C - MAT. 9

Unit weight of material = 58.500

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 10
MSW D - MAT. 10

Unit weight of material = 51.400

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 11
MSW E - MAT. 11

Unit weight of material = 48.100

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 12
MSW F - MAT. 12

Unit weight of material = 22.600

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

All new material properties defined - No old data retained
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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 5
****
* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
****

Line No.	Point	X	Y	
1 - Unit weight of water = 62.40				PHREATIC
1	1	-500.000	80.000	PHREATIC
1	2	1000.000	80.000	PHREATIC

All new piezometric lines defined - No old lines retained
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TABLE NO. 15
****
* NEW ANALYSIS/COMPUTATION DATA *
****

Noncircular Shear Surface(s)

Computations Performed for Single Shear Surface

Shear Surface Coordinates -

Point	X	Y
1	80.452	96.113
2	126.839	80.250
3	386.460	82.835
4	446.291	170.000

Initial trial estimate for the factor of safety = 3.000

Maximum number of iterations allowed for
calculating the factor of safety = 100

Short form of output will be used for search

THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

Initial trial estimate for side force inclination = 15.000 degrees
(Applicable to Spencer's procedure only)

Allowed force imbalance for convergence = 100.000

Allowed moment imbalance for convergence = 100.000

Number of increments for slice subdivision = 30

Depth of water in crack = .000

Unit weight of water in crack = 62.400

Seismic coefficient = .000

Conventional (single-stage) computations to be performed

Procedure used to compute the factor of safety: SPENCER
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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 16
****
* NEW SLOPE GEOMETRY DATA *
****

NOTE - NO DATA WERE INPUT. SLOPE GEOMETRY DATA
WERE GENERATED BY THE PROGRAM

Slope Coordinates -

Point	X	Y
1	-500.000	80.000
2	.000	80.000
3	48.000	96.000
4	80.000	96.000
5	80.904	96.226
6	408.369	178.000
7	1200.000	178.000

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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	80.5	96.1					
1	80.7	96.0	6.6	4	NONLINEAR ENVELOPE		.0
	80.9	96.0					
2	85.4	94.5	2945.0	4	NONLINEAR ENVELOPE		.0
	89.8	93.0					
3	94.5	91.4	7551.1	4	NONLINEAR ENVELOPE		.0
	99.1	89.9					
4	103.7	88.4	10935.5	4	NONLINEAR ENVELOPE		.0
	108.4	86.8					
5	113.3	85.2	15205.8	4	NONLINEAR ENVELOPE		.0
	118.2	83.5					
6	123.1	81.9	18890.3	4	NONLINEAR ENVELOPE		.0
	128.0	80.3					
7	128.0	80.3	82.4	4	NONLINEAR ENVELOPE		.0
	128.0	80.3					
8	126.1	80.3	84.5	4	NONLINEAR ENVELOPE		.0
	126.1	80.3					
9	120.2	80.3	665.9	4	NONLINEAR ENVELOPE		.0
	120.4	80.3					
10	133.4	80.3	21478.4	4	NONLINEAR ENVELOPE		.0
	138.4	80.4					
11	143.4	80.4	23383.7	4	NONLINEAR ENVELOPE		.0
	148.4	80.5					
12	153.4	80.5	24889.0	4	NONLINEAR ENVELOPE		.0
	158.4	80.6					
13	163.4	80.6	26394.4	4	NONLINEAR ENVELOPE		.0
	168.4	80.7					
14	174.4	80.7	33599.2	4	NONLINEAR ENVELOPE		.0
	180.4	80.8					
15	186.4	80.8	35604.0	4	NONLINEAR ENVELOPE		.0
	192.4	80.9					
16	198.4	81.0	37608.8	4	NONLINEAR ENVELOPE		.0
	204.4	81.0					
17	210.4	81.1	39613.6	4	NONLINEAR ENVELOPE		.0
	216.4	81.1					
18	222.4	81.2	41618.4	4	NONLINEAR ENVELOPE		.0
	228.4	81.3					
19	234.4	81.3	43531.4	4	NONLINEAR ENVELOPE		.0
	240.4	81.4					
20	246.4	81.4	45352.6	4	NONLINEAR ENVELOPE		.0
	252.4	81.5					
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STABILITY ANALYSES - 98 FEET							
NON-CIRCULAR; RS 03/18/2002							

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	252.4	81.5					
21	258.4	81.6	47373.7	4	NONLINEAR ENVELOPE		.0
	264.4	81.6					
22	270.4	81.7	48595.0	4	NONLINEAR ENVELOPE		.0
	276.4	81.7					
23	282.4	81.8	50816.2	4	NONLINEAR ENVELOPE		.0
	288.4	81.9					
24	294.4	81.9	52542.0	4	NONLINEAR ENVELOPE		.0
	300.4	82.0					
25	306.4	82.0	54172.4	4	NONLINEAR ENVELOPE		.0
	312.4	82.1					
26	318.4	82.2	55802.8	4	NONLINEAR ENVELOPE		.0
	324.4	82.2					
27	330.4	82.3	57433.2	4	NONLINEAR ENVELOPE		.0
	336.4	82.3					

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28	342.4	82.4	59063.5	4	NONLINEAR ENVELOPE	.0
	348.4	82.5				
29	353.1	82.5	47741.8	4	NONLINEAR ENVELOPE	.0
	357.9	82.5				
30	362.7	82.6	48190.6	4	NONLINEAR ENVELOPE	.0
	367.4	82.6				
31	372.2	82.7	48639.3	4	NONLINEAR ENVELOPE	.0
	376.9	82.7				
32	381.7	82.8	49087.1	4	NONLINEAR ENVELOPE	.0
	386.5	82.8				
33	386.6	83.0	1029.0	4	NONLINEAR ENVELOPE	.0
	386.7	83.1				
34	387.4	84.1	6968.3	5	.00 35.00	.0
	388.0	85.1				
35	390.6	88.9	23961.1	7	NONLINEAR ENVELOPE	.0
	393.1	92.6				
36	395.7	96.3	21549.2	7	NONLINEAR ENVELOPE	.0
	398.2	100.0				
37	400.8	103.7	19089.5	9	NONLINEAR ENVELOPE	.0
	403.3	107.4				
38	405.8	111.1	16876.7	8	NONLINEAR ENVELOPE	.0
	408.4	114.8				
39	408.5	114.9	526.3	8	NONLINEAR ENVELOPE	.0
	408.5	115.0				
40	411.1	118.8	14824.5	9	NONLINEAR ENVELOPE	.0
	413.7	122.5				

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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 26
****
* Coordinate, Height, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	413.7	122.5					
41	416.3	126.3	12565.9	9	NONLINEAR ENVELOPE		.0
	418.8	130.0					
42	421.4	133.8	10405.5	10	NONLINEAR ENVELOPE		.0
	424.0	137.5					
43	426.6	141.3	8343.7	10	NONLINEAR ENVELOPE		.0
	429.1	145.0					
44	431.7	148.8	6384.1	11	NONLINEAR ENVELOPE		.0
	434.3	152.5					
45	436.9	156.3	4527.1	11	NONLINEAR ENVELOPE		.0
	439.4	160.0					
46	442.0	165.0	4022.4	12	NONLINEAR ENVELOPE		.0
	444.3	170.0					

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 27
****
* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
1	80.7	0.	96.1	0.	0.	.0	.0
2	85.4	0.	95.9	0.	0.	.0	.0
3	94.5	0.	95.7	0.	0.	.0	.0
4	103.7	0.	95.6	0.	0.	.0	.0
5	113.3	0.	95.0	0.	0.	.0	.0
6	123.1	0.	94.6	0.	0.	.0	.0
7	128.0	0.	94.4	0.	0.	.0	.0
8	128.1	0.	94.4	0.	0.	.0	.0
9	128.2	0.	94.4	0.	0.	.0	.0
10	133.4	0.	95.1	0.	0.	.0	.0
11	143.4	0.	96.4	0.	0.	.0	.0
12	153.4	0.	97.6	0.	0.	.0	.0
13	163.4	0.	98.9	0.	0.	.0	.0
14	174.4	0.	100.3	0.	0.	.0	.0
15	186.4	0.	101.8	0.	0.	.0	.0
16	198.4	0.	103.2	0.	0.	.0	.0
17	210.4	0.	104.7	0.	0.	.0	.0
18	222.4	0.	106.2	0.	0.	.0	.0
19	234.4	0.	107.7	0.	0.	.0	.0
20	246.4	0.	109.1	0.	0.	.0	.0
21	258.4	0.	110.5	0.	0.	.0	.0
22	270.4	0.	112.0	0.	0.	.0	.0
23	282.4	0.	113.4	0.	0.	.0	.0
24	294.4	0.	114.8	0.	0.	.0	.0
25	306.4	0.	116.3	0.	0.	.0	.0
26	318.4	0.	117.6	0.	0.	.0	.0
27	330.4	0.	119.0	0.	0.	.0	.0
28	342.4	0.	120.4	0.	0.	.0	.0
29	351.1	0.	121.4	0.	0.	.0	.0
30	361.7	0.	122.0	0.	0.	.0	.0
31	371.2	0.	122.7	0.	0.	.0	.0
32	381.7	0.	123.4	0.	0.	.0	.0
33	386.6	0.	123.8	0.	0.	.0	.0
34	387.4	0.	124.9	0.	0.	.0	.0
35	390.6	0.	126.1	0.	0.	.0	.0
36	395.7	0.	132.7	0.	0.	.0	.0
37	400.8	0.	137.4	0.	0.	.0	.0
38	405.8	0.	142.0	0.	0.	.0	.0
39	408.5	0.	144.5	0.	0.	.0	.0

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 27
****
* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
40	411.1	0.	146.7	0.	0.	.0	.0
41	416.3	0.	151.0	0.	0.	.0	.0
42	421.4	0.	155.4	0.	0.	.0	.0
43	426.6	0.	159.8	0.	0.	.0	.0
44	431.7	0.	164.6	0.	0.	.0	.0
45	436.9	0.	169.3	0.	0.	.0	.0
46	442.0	0.	174.0	0.	0.	.0	.0

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	15.0000	.3538E+05	.1574E+07		
First-order corrections to F and THETA					-.127E+01	-.358E+01
Values factored by .354E+00 - Deltas too large					-.500E+00	-.141E+01
2	2.50000	13.5905	.2034E+05	.1145E+07		
First-order corrections to F and THETA					-.511E+00	-.141E+01
Values factored by .978E+00 - Deltas too large					-.500E+00	-.334E+01
3	2.00000	10.2693	-.5883E+04	.6460E+06		
First-order corrections to F and THETA					.446E-01	-.142E+01
Second-order correction - Iteration 1					.454E-01	-.142E+01
Second-order correction - Iteration 2					.454E-01	-.142E+01
4	2.04541	8.8245	.5560E+01	-.4858E+05		
First-order corrections to F and THETA					.316E-02	.147E+00
Second-order correction - Iteration 1					.316E-02	.147E+00
5	2.04857	8.9716	.2197E-02	-.1054E+02		
First-order corrections to F and THETA					.665E-06	.316E-04

For trial number 2 with a nonlinear strength envelope the maximum percent change in shear strength was 35.924 - at slice 43
Material: 10 Normal stress: 1059.381
Strength from previous trial: 501.240
Estimated strength for new trial: 702.256

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	2.04857	8.9716	-.1616E+04	.1240E+06		
First-order corrections to F and THETA					.180E-01	-.162E+00
Second-order correction - Iteration 1					.181E-01	-.162E+00
Second-order correction - Iteration 2					.181E-01	-.162E+00
2	2.06671	8.8059	.1315E+00	-.1521E+04		
First-order corrections to F and THETA					.958E-04	.467E-02
Second-order correction - Iteration 1					.958E-04	.466E-02
3	2.06681	8.8146	-.7935E-02	.5615E+00		
First-order corrections to F and THETA					.924E-07	-.664E-06

For trial number 3 with a nonlinear strength envelope the maximum percent change in shear strength was .000 - at slice 15
Material: 6 Normal stress: 3000.773
Strength from previous trial: 547.513
Estimated strength for new trial: 547.513

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iteration	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	2.06681	8.8146	-.7935E-02	.5615E+00		
First-order corrections to F and THETA					.924E-07	-.664E-06

Factor of Safety - - - - - - - - 2.067
Side Force Inclination - - - - - 8.81
Number of Iterations - - - - - - 3

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STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; RS 03/18/2002

TABLE NO. 30
****
* Final Results for Stresses Along the Shear Surface *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 2.067 Side Force Inclination = 8.81 Degrees

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
1	80.7	96.0	14.2	14.2	1.7
2	85.4	94.5	368.0	368.0	36.1
3	94.5	91.4	906.9	906.9	93.9
4	103.7	88.4	1313.3	1313.3	136.0
5	113.3	85.2	1725.6	1725.6	176.6
6	123.1	81.9	2140.4	2140.4	215.4
7	128.0	80.3	2345.1	2345.1	227.2
8	128.1	80.3	2141.7	2141.7	215.4
9	128.2	80.3	2141.7	2141.7	215.4
10	133.4	80.5	2217.7	2217.7	219.8
11	143.4	80.4	2369.3	2369.3	226.5
12	153.4	80.5	2521.0	2521.0	237.3
13	163.4	80.6	2672.6	2672.6	246.0
14	174.4	80.7	2832.6	2832.6	255.3
15	186.4	80.8	3000.8	3000.8	264.9
16	198.4	81.0	3169.0	3169.0	274.4
17	210.4	81.1	3337.2	3337.2	284.0
18	222.4	81.2	3505.4	3505.4	294.0
19	234.4	81.3	3665.9	3665.9	303.2
20	246.4	81.4	3818.7	3818.7	312.0
21	258.4	81.6	3971.5	3971.5	320.6
22	270.4	81.7	4124.3	4124.3	329.4
23	282.4	81.8	4277.1	4277.1	338.4
24	294.4	81.9	4421.9	4421.9	346.7
25	306.4	82.0	4558.7	4558.7	354.6
26	318.4	82.2	4695.5	4695.5	362.5
27	330.4	82.3	4832.3	4832.3	370.4
28	342.4	82.4	4969.1	4969.1	378.3

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29	353.1	82.5	5061.1	5061.1	382.4
30	362.7	82.6	5108.4	5108.4	384.1
31	372.2	82.7	5155.6	5155.6	385.7
32	381.7	82.8	5202.9	5202.9	387.3
33	386.6	83.0	3876.7	3876.7	315.3
34	387.4	84.1	3024.1	3024.1	1024.5
35	390.6	88.9	2837.1	2837.1	937.3
36	395.7	96.3	2547.9	2547.9	844.2
37	400.8	103.7	2269.6	2269.6	758.8
38	405.8	111.1	2002.3	2002.3	674.8
39	408.5	114.9	1863.9	1863.9	631.3

1

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
40	411.1	118.8	1725.6	1725.6	587.6
41	414.3	126.3	1456.6	1456.6	503.3
42	421.4	133.8	1198.9	1198.9	422.7
43	426.6	141.3	955.0	955.0	345.7
44	431.7	148.8	722.2	722.2	272.6
45	436.9	156.3	459.8	459.8	242.5
46	442.9	165.0	220.5	220.5	242.5

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .02 (= .202E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .05 (= .504E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -1.82 (= -.182E+01)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .01 (= .55BE-02)
SHOULD NOT EXCEED .100E+03
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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - 98 FEET
NON-CIRCULAR; BS 03/18/2002

TABLE NO. 39
****
* Final Results for Side Forces and Stresses Between Slices. *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 2.067 Side Force Inclination = 8.81 Degrees

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	80.9	3.	96.1	.419	6.2	38.0
2	88.8	1454.	95.2	.400	104.5	421.5
3	99.1	5172.	93.4	.323	-28.1	968.5
4	108.4	10557.	91.9	.313	-77.8	1359.6
5	118.2	18045.	90.3	.308	-127.1	1743.2
6	128.0	27271.	88.7	.306	-162.2	2106.4
7	128.0	27311.	88.7	.306	-162.4	2107.8
8	128.1	27319.	88.7	.306	-162.3	2107.5
9	128.4	27361.	88.8	.306	-161.5	2105.9
10	138.4	29380.	89.7	.309	-142.5	2063.4
11	148.4	31451.	90.6	.310	-132.9	2038.3
12	158.4	33586.	91.4	.311	-129.8	2035.9
13	168.4	35813.	92.3	.310	-131.4	2023.2
14	180.4	38569.	93.2	.309	-137.4	2029.3
15	192.4	41421.	94.2	.308	-146.4	2042.9
16	204.4	44370.	95.1	.306	-157.6	2062.1
17	216.4	47417.	96.0	.304	-170.1	2085.6
18	228.4	50561.	96.9	.302	-183.7	2113.0
19	240.4	53798.	97.7	.299	-197.9	2142.6
20	252.4	57123.	98.6	.297	-212.3	2174.0
21	264.4	60536.	99.4	.295	-226.9	2206.8
22	276.4	64038.	100.3	.293	-241.5	2240.8
23	288.4	67628.	101.1	.291	-256.1	2275.6
24	300.4	71301.	101.9	.289	-270.7	2311.3
25	312.4	75054.	102.8	.287	-284.9	2347.0
26	324.4	78885.	103.6	.286	-299.0	2383.0
27	336.4	82796.	104.4	.284	-312.8	2419.1
28	348.4	86786.	105.2	.282	-326.4	2455.4
29	357.5	89983.	105.8	.281	-336.5	2483.2
30	367.4	93192.	106.5	.280	-345.7	2509.3
31	376.9	96411.	107.1	.279	-354.1	2534.0
32	386.5	99642.	107.8	.278	-361.7	2557.3
33	386.7	98567.	108.1	.279	-353.1	2530.8
34	388.0	93837.	109.5	.278	-351.1	2463.8
35	393.1	77360.	114.8	.273	-343.0	2213.6
36	398.2	62550.	120.1	.266	-329.8	1967.8
37	403.3	49496.	125.3	.259	-316.5	1726.9
38	408.4	38006.	130.5	.249	-299.6	1487.3
39	408.5	37649.	130.7	.249	-298.5	1479.6
40	413.7	27619.	136.0	.243	-267.3	1250.8

1

---------- VALUES AT RIGHT SIDE OF SLICE ----------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
41	418.8	19386.	141.2	.234	-236.1	1026.0
42	424.0	12381.	146.4	.221	-202.4	801.7
43	429.1	6814.	151.7	.203	-160.2	569.5
44	434.3	2773.	157.4	.192	-93.2	306.1
45	439.4	567.	164.5	.248	-15.3	75.4
46	444.3	0.	119.1	BELOW	-.1	.1

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .02 (= .202E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .05 (= .504E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -1.82 (= -.182E+01)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .01 (= .55BE-02)
SHOULD NOT EXCEED .100E+03

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED

Attachment 3

CASE 3

UTEXAS3 Computer Data Files

Perimeter Berm Stability

- Surface 3-A: File BERM.DAT

BERM.DAT

```
HEADING
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - PERIMETER BERM
CIRCULAR; RS 03/14/2002
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
1200 -80

2  2  SAND - MAT. 2
-500 80
1200 80

3  3  BERM - MAT. 3
0 80
48 96
80 96
124 80
1200 90.880

4  4  LINER - MAT. 4
80 96
80.904 96.226
128.079 80.501
1200 91.380

5  5  PROTECTIVE LAYER - MAT. 5
80.904 96.226
89.819 95.362
128.394 82.504
1200 93.380

6  6  FINAL COVER - MAT. 6
80.904 96.226
406.369 178
1200 178

7  7  MSW A - MAT. 7
89.819 95.362
108.369 100
1200 100

8  8  MSW B - MAT. 8
108.369 100
168.369 115
1200 115

9  9  MSW C - MAT. 9
168.369 115
228.369 130
1200 130

10  10  MSW D - MAT. 10
228.369 130
288.369 145
1200 145

11  11  MSW E - MAT. 11
288.369 145
348.369 160
1200 160

12  12  MSW F - MAT. 12
348.369 160
408.369 175
1200 175


MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
2 SAND - MAT. 2
    116
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
3 BERM - MAT. 3
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
4 LINER - MAT. 4
    110
    Nonlinear Mohr-Coulomb
    -1000 0
    0 0
    2008 429
    5013 787
    10025 1143
    15038 1594
    18000 1908

    Piezometric Line
    1
5  PROTECTIVE LAYER - MAT. 5
    110
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
6 FINAL COVER - MAT. 6
    120
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
7 MSW A - MAT. 7
    67.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -1 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03618

    Piezometric Line
    1
8 MSW B - MAT. 8
    63.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03618

    Piezometric Line
    1
9 MSW C - MAT. 9
    58.5
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03618

    Piezometric Line
    1
10 MSW D - MAT. 10
    53.4
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03618

    Piezometric Line
    1
11 MSW E - MAT. 11
    48.1
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03618

    Piezometric Line
    1
12 MSW F - MAT. 12
    32.6
    Nonlinear Mohr-Coulomb
    -1000 0
    -100 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 636.86719
    5221.25 3485.03618

    Piezometric Line
    1

PIEZOMETRIC LINE DATA
1 62.4 PHREATIC
-500 80
1000 80


ANAlysis/computation data follow -
Circle Search
-6.989 351.838 10 -500
TANGENT
80
PROCEDURE
SPENCER
FACTOR OF SAFETY
3.0
ITE
100
SHORT

Plot
COMpute
```

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```
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        TABLE NO. 1
        ****************************************
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        * Originally Coded By Stephen G. Wright  *
        * Version No. 1.206                      *
        * Last Revision Date  6/ 4/96            *
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        ****************************************

        ********************************************************
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        * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE   *
        * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER  *
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        CIRCULAR; RS 03/18/2002

        TABLE NO. 2
        ************************
        * NEW PROFILE LINE DATA *
        ************************

        PROFILE LINE  1 - MATERIAL TYPE =  1
        HAWTHORNE - MAT. 1

             Point       X             Y

               1      -500.000       -80.000
               2      1200.000       -80.000

        PROFILE LINE  2 - MATERIAL TYPE =  2
        SAND - MAT. 2

             Point       X             Y

               1      -500.000        80.000
               2      1200.000        80.000

        PROFILE LINE  3 - MATERIAL TYPE =  3
        BERM - MAT. 3

             Point       X             Y

               1          .000        80.000
               2        48.000        96.000
               3        80.000        96.000
               4       128.000        80.000
               5      1200.000        80.880

        PROFILE LINE  4 - MATERIAL TYPE =  4
        LINER - MAT. 4

             Point       X             Y

               1        80.000        96.000
               2        80.904        96.226
               3       128.079        80.501
               4      1200.000        81.380

        PROFILE LINE  5 - MATERIAL TYPE =  5
        PROTECTIVE LAYER - MAT. 5

             Point       X             Y

               1        80.904        96.226
               2        89.829        95.362
               3       128.394        82.504
               4      1200.000        83.380

        PROFILE LINE  6 - MATERIAL TYPE =  6
        FINAL COVER - MAT. 6

             Point       X             Y

               1        80.904        96.226
               2       408.369       178.000
               3      1200.000       178.000

        PROFILE LINE  7 - MATERIAL TYPE =  7
        MSW A - MAT. 7

             Point       X             Y

               1        89.829        95.362
               2       108.369       100.000
               3      1200.000       100.000

        PROFILE LINE  8 - MATERIAL TYPE =  8
        MSW B - MAT. 8

             Point       X             Y

               1       108.369       100.000
               2       168.369       115.000
               3      1200.000       115.000

        PROFILE LINE  9 - MATERIAL TYPE =  9
        MSW C - MAT. 9

             Point       X             Y

               1       168.369       115.000
               2       228.369       130.000
               3      1200.000       130.000

        PROFILE LINE 10 - MATERIAL TYPE = 10
        MSW D - MAT. 10

             Point       X             Y

               1       228.369       130.000
               2       288.369       145.000
               3      1200.000       145.000

        PROFILE LINE 11 - MATERIAL TYPE = 11
        MSW E - MAT. 11

             Point       X             Y

               1       288.369       145.000
               2       348.369       160.000
               3      1200.000       160.000

        PROFILE LINE 12 - MATERIAL TYPE = 12
        MSW F - MAT. 12

             Point       X             Y

               1       348.369       160.000
               2       408.369       175.000
               3      1200.000       175.000

        All new profile lines defined - No old lines retained
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        TABLE NO. 3
        ************************************************************
        * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ************************************************************

        DATA FOR MATERIAL TYPE  1
        HAWTHORNE - MAT. 1

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  2
        SAND - MAT. 2

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  3
        BERM - MAT. 3

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  4
        LINER - MAT. 4

             Unit weight of material =  110.000

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2               .000              .000
               3           2005.000           429.000
               4           5011.000           787.000
               5          10025.000          1143.000
               6          15018.000          1594.000
               7          18000.000          1908.000

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  5
        PROTECTIVE LAYER - MAT. 5

             Unit weight of material =  110.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  6
        FINAL COVER - MAT. 6

             Unit weight of material =  120.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -        .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  7
        MSW A - MAT. 7

             Unit weight of material =   67.500

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2             -1.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
               7            835.400           636.867
               8           5271.250          3485.038

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  8
        MSW B - MAT. 8

             Unit weight of material =   63.100

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2           -100.000              .000
               3               .000           501.240
               4            208.850           501.240
               5            417.700           501.240
               6            626.550           501.240
```

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7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 9
MSW C - MAT. 9

Unit weight of material = 58.500

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 10
MSW D - MAT. 10

Unit weight of material = 53.400

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 11
MSW E - MAT. 11

Unit weight of material = 48.106

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

DATA FOR MATERIAL TYPE 12
MSW F - MAT. 12

Unit weight of material = 22.600

---- NONLINEAR SHEAR STRENGTH ENVELOPE ----

Point	Normal Stress	Shear Stress
1	-1000.000	.000
2	-100.000	.000
3	.000	501.240
4	208.850	501.240
5	417.700	501.240
6	626.550	501.240
7	835.400	636.867
8	5221.250	3485.038

Pore water pressures defined by piezometric line
Number of the piezometric line used = 1
Negative pore pressures set to zero

All new material properties defined - No old data retained
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CIRCULAR; RS 03/18/2002

TABLE NO. 5
****
* NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
****

Line No.	Point	X	Y	
1 - Unit weight of water =			62.40	PHREATIC
1	1	-500.000	80.000	PHREATIC
1	2	1000.000	80.000	PHREATIC

All new piezometric lines defined - No old lines retained
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CIRCULAR; RS 03/18/2002

TABLE NO. 15
****
* NEW ANALYSIS/COMPUTATION DATA *
****

Circular Shear Surface(s)

Automatic Search Performed

Starting Center Coordinate for Search at -
X = -4.989
Y = 351.838

Required accuracy for critical center (= minimum spacing between grid points) = 10.000

Critical shear surface not allowed to pass below Y = -500.000

For the initial mode of search
all circles are tangent to horizontal line at -
Y = 80.000

Procedure used to compute the factor of safety: SPENCER

Initial trial estimate for the factor of safety = 3.000

Maximum number of iterations allowed for calculating the factor of safety = 100

Short form of output will be used for search

....
THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

Initial trial estimate for side force inclination = 15.000 degrees
(Applicable to Spencer's procedure only)

Allowed force imbalance for convergence = 100.000

Allowed moment imbalance for convergence = 100.000

Initial trial values for factor of safety (and side force inclination for Spencer's procedure) will be kept constant during search

Maximum subtended angle to be used for subdivision of the circle into slices = 3.00 degrees

Depth of crack = .000

Search will be continued to locate a more critical shear surface (if one exists) after the initial mode is complete

Depth of water in crack = .000

Unit weight of water in crack = 62.400

Seismic coefficient = .000

Conventional (single-stage) computations to be performed
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CIRCULAR; RS 03/18/2002

TABLE NO. 16
****
* NEW SLOPE GEOMETRY DATA *
****

NOTE - NO DATA WERE INPUT, SLOPE GEOMETRY DATA WERE GENERATED BY THE PROGRAM

Slope Coordinates -

Point	X	Y
1	-500.000	80.000
2	.000	80.000
3	48.000	96.000
4	80.000	96.000
5	80.904	96.226
6	408.369	178.000
7	1200.000	178.000

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CIRCULAR; RS 03/18/2002

TABLE NO. 20
****
* SHORT-FORM TABLE FOR SEARCH WITH CIRCULAR SHEAR SURFACES *
****

Mode	Center Coordinates of Critical Circle X	Y	Radius	1-Stage Factor of Safety	Side Force Inclin.
2 Tangent Line at Y = 80.0	-4.989	131.838	51.838	2.318	18.35
3 Constant Radius of R = 51.8	13.011	121.838	51.838	2.067	10.94
2 Tangent Line at Y = 70.0	13.011	111.838	41.838	2.036	11.57
3 Constant Radius of R = 41.8	13.011	111.838	41.838	2.036	11.57

TABLE NO. 21
***** 1-STAGE FINAL CRITICAL CIRCLE INFORMATION *****
X Coordinate of Center - - - - - - - 13.011
Y Coordinate of Center - - - - - - - 111.838
Radius - - - - - - - - - - - - - - - 41.838
Factor of Safety - - - - - - - - - - 2.036
Side Force Inclination - - - - - - - 11.57

Number of circles tried - - - - - - - 156
No. of circles F calc. for - - - - - 78
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CIRCULAR; RS 03/18/2002

TABLE NO. 24
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	-14.1	80.0					
1	-13.3	79.3	334.9	2	.00	30.00	63.0
	-12.4	78.6					
2	-11.5	78.0	411.9	2	.00	30.00	126.0
	-10.7	77.3					
3	-9.7	76.7	688.8	2	.00	30.00	203.3
	-8.8	76.1					
4	-7.9	75.6	960.5	2	.00	30.00	274.6
	-6.9	75.1					
5	-5.9	74.6	1222.4	2	.00	30.00	339.7
	-5.0	74.1					
6	-4.0	73.6	1469.9	2	.00	30.00	398.6
	-3.0	73.2					
7	-1.9	72.8	1698.7	2	.00	30.00	450.6
	-.9	72.4					
8	-.5	72.2	821.7	2	.00	30.00	484.8
	.0	72.1					
9	1.0	71.8	2076.7	2	.00	30.00	514.3
	2.1	71.4					
10	3.2	71.2	2426.1	2	.00	30.00	549.7
	4.2	70.9					
11	5.3	70.7	2751.7	2	.00	30.00	578.4
	6.4	70.5					
12	7.5	70.4	3049.3	2	.00	30.00	600.1
	8.6	70.2					

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33	9.6	70.2	3325.2	2	.00	30.00	614.6
	10.7	70.1					
34	11.6	70.0	3546.2	2	.00	30.00	622.1
	12.9	70.0					
35	13.0	70.0	144.5	2	.00	30.00	624.0
	13.0	70.0					
36	14.1	70.0	3746.3	2	.00	30.00	622.2
	15.2	70.1					
37	16.3	70.1	3898.3	2	.00	30.00	615.1
	17.4	70.2					
38	18.5	70.4	4008.9	2	.00	30.00	600.8
	19.6	70.5					
39	20.6	70.7	4077.2	2	.00	30.00	579.4
	21.7	70.9					
40	22.8	71.2	4103.3	2	.00	30.00	551.0
	23.8	71.4					

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CIRCULAR; RS 03/18/2002

TABLE NO. 26

* Coordinate, Weight, Strength and Pore Water Pressure Information for Individual Slices for Conventional Computations or First Stage of Multi-Stage Computations. (Information is for the Critical Shear Surface in the Case of an Automatic Search.) *

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	23.8	71.4					
21	24.9	71.7	4086.7	2	.00	30.00	515.4
	25.9	72.0					
22	27.0	72.4	4029.0	2	.00	30.00	473.4
	28.0	72.8					
23	29.0	73.3	3931.7	2	.00	30.00	424.4
	30.0	73.6					
24	31.0	74.1	3796.8	2	.00	30.00	368.5
	32.0	74.6					
25	33.0	75.1	3627.0	2	.00	30.00	306.8
	33.9	75.6					
26	34.9	76.2	3425.5	2	.00	30.00	238.5
	35.8	76.7					
27	36.7	77.4	3195.9	2	.00	30.00	164.1
	37.6	78.0					
28	38.5	78.7	2942.5	2	.00	30.00	83.8
	39.3	79.3					
29	38.7	79.7	1325.5	2	.00	30.00	21.1
	40.2	80.0					
30	41.0	80.7	2526.5	3	.00	35.00	.0
	41.8	81.5					
31	42.6	82.2	2222.7	3	.00	35.00	.0
	43.3	83.0					
32	44.1	83.8	1913.7	3	.00	35.00	.0
	44.8	84.6					
33	45.5	85.5	1602.1	3	.00	35.00	.0
	46.2	86.3					
34	46.8	87.2	1296.9	3	.00	35.00	.0
	47.5	88.1					
35	47.7	88.5	471.3	3	.00	35.00	.0
	48.0	88.9					
36	48.6	89.8	853.3	3	.00	35.00	.0
	49.2	90.8					
37	49.7	91.7	540.8	3	.00	35.00	.0
	50.2	92.7					
38	50.7	93.7	266.2	3	.00	35.00	.0
	51.2	94.7					
39	51.4	95.3	46.6	3	.00	35.00	.0
	51.7	96.0					

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CIRCULAR; RS 03/18/2002

TABLE NO. 27

* Seismic Forces and Forces Due to Surface Pressures for Individual Slices for Conventional Computations or the First Stage of Multi-Stage Computations. (Information is for the Critical Shear Surface in the Case of an Automatic Search.) *

FORCES DUE TO SURFACE PRESSURES

Slice No.	X	Seismic Force	Y for Seismic Force	Normal Force	Shear Force	X	Y
1	-13.3	0.	79.7	0.	0.	.0	.0
2	-11.5	0.	79.0	0.	0.	.0	.0
3	-9.7	0.	78.4	0.	0.	.0	.0
4	-7.9	0.	77.8	0.	0.	.0	.0
5	-5.9	0.	77.3	0.	0.	.0	.0
6	-4.0	0.	76.8	0.	0.	.0	.0
7	-1.9	0.	76.4	0.	0.	.0	.0
8	-.5	0.	76.1	0.	0.	.0	.0
9	1.0	0.	76.1	0.	0.	.0	.0
10	3.2	0.	76.1	0.	0.	.0	.0
11	5.3	0.	76.3	0.	0.	.0	.0
12	7.5	0.	76.5	0.	0.	.0	.0
13	9.6	0.	76.7	0.	0.	.0	.0
14	11.6	0.	77.0	0.	0.	.0	.0
15	13.0	0.	77.2	0.	0.	.0	.0
16	14.1	0.	77.4	0.	0.	.0	.0
17	16.3	0.	77.9	0.	0.	.0	.0
18	18.5	0.	78.3	0.	0.	.0	.0
19	20.6	0.	78.9	0.	0.	.0	.0
20	22.8	0.	79.5	0.	0.	.0	.0
21	24.9	0.	80.1	0.	0.	.0	.0
22	27.0	0.	80.8	0.	0.	.0	.0
23	29.0	0.	81.5	0.	0.	.0	.0
24	31.0	0.	82.3	0.	0.	.0	.0
25	33.0	0.	83.1	0.	0.	.0	.0
26	34.9	0.	84.0	0.	0.	.0	.0
27	36.7	0.	84.8	0.	0.	.0	.0
28	38.5	0.	85.8	0.	0.	.0	.0
29	39.7	0.	86.5	0.	0.	.0	.0
30	41.0	0.	87.2	0.	0.	.0	.0
31	42.6	0.	88.2	0.	0.	.0	.0
32	44.1	0.	89.3	0.	0.	.0	.0
33	45.5	0.	90.3	0.	0.	.0	.0
34	46.8	0.	91.4	0.	0.	.0	.0
35	47.7	0.	92.3	0.	0.	.0	.0
36	48.6	0.	92.9	0.	0.	.0	.0
37	49.7	0.	93.9	0.	0.	.0	.0
38	50.7	0.	94.8	0.	0.	.0	.0
39	51.4	0.	95.7	0.	0.	.0	.0

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STABILITY ANALYSES - PERIMETER BERM
CIRCULAR; RS 03/18/2002

TABLE NO. 29

* Information Generated During Iterative Solution for the Factor of Safety and Side Force Inclination by Spencer's Procedure *

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	15.0000	.5900E+04	-.3590E+06		
First-order corrections to F and THETA					-.134E-01	-.242E-01
Values factored by .372E+00 - Deltas too large					-.500E+00	-.901E+00
2	2.50000	14.0994	.1223E+04	-.1914E+06		
First-order corrections to F and THETA					-.543E-00	-.206E+01
Values factored by .920E+00 - Deltas too large					-.500E+00	-.189E+01
3	2.00000	12.2057	-.5787E+03	.4647E+05		
First-order corrections to F and THETA					.347E-01	-.654E+00
Second-order correction - Iteration 1					.358E-01	-.655E+00
Second-order correction - Iteration 2					.357E-01	-.656E+00
Second-order correction - Iteration 3					.357E-01	-.657E+00
Second-order correction - Iteration 4					.357E-01	-.658E+00
Second-order correction - Iteration 5					.356E-01	-.659E+00
Second-order correction - Iteration 6					.356E-01	-.660E+00
Second-order correction - Iteration 7					.356E-01	-.661E+00
Second-order correction - Iteration 8					.356E-01	-.662E+00
Second-order correction - Iteration 9					.355E-01	-.663E+00
Second-order correction - Iteration 10					.355E-01	-.663E+00
SECOND-ORDER CORRECTIONS DID NOT CONVERGE IN 10 ITERATIONS - FIRST-ORDER CORRECTIONS USED						
4	2.03466	11.5537	-.1126E+02	.5901E+03		
First-order corrections to F and THETA					.141E-01	.185E-01
Second-order correction - Iteration 1					.145E-01	.137E-01
Second-order correction - Iteration 2					.128E-01	.694E-02
Second-order correction - Iteration 3					.112E-01	.116E-02
Second-order correction - Iteration 4					.953E-03	-.446E-02
Second-order correction - Iteration 5					.786E-03	-.103E-01
Second-order correction - Iteration 6					.620E-03	-.161E-01
Second-order correction - Iteration 7					.453E-03	-.219E-01
Second-order correction - Iteration 8					.287E-03	-.277E-01
Second-order correction - Iteration 9					.120E-03	-.335E-01
Second-order correction - Iteration 10					-.470E-04	-.393E-01
SECOND-ORDER CORRECTIONS DID NOT CONVERGE IN 10 ITERATIONS - FIRST-ORDER CORRECTIONS USED						
5	2.03627	11.5702	-.1032E+01	.9562E+00		
First-order corrections to F and THETA					.321E-04	-.234E-04

Factor of Safety - - - - - - - - - 2.036
Side Force Inclination - - - - - - 11.57
Number of Iterations - - - - - - - 5

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CIRCULAR; RS 03/18/2002

TABLE NO. 36

* Final Results for Stresses Along the Shear Surface (Results for Critical Shear Surface in Case of a Search.) *

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 2.036 Side Force Inclination = 11.57 Degrees

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
1	-13.3	79.3	122.1	79.3	22.4
2	-11.5	78.0	338.6	212.6	60.3
3	-9.7	76.7	520.5	317.2	89.9
4	-7.9	75.6	674.1	399.4	113.1
5	-5.9	74.6	803.5	463.8	131.5
6	-4.0	73.6	911.6	513.1	145.5
7	-1.9	72.8	1000.4	549.8	155.9
8	-.5	72.2	1055.0	570.2	161.7
9	1.0	71.8	1150.5	636.4	180.5
10	3.2	71.2	1299.1	749.3	212.5
11	5.3	70.7	1427.3	848.9	240.7
12	7.5	70.4	1536.5	936.4	265.5
13	9.6	70.2	1627.4	1012.7	287.1
14	11.6	70.0	1700.7	1078.6	305.8
15	13.0	70.0	1733.8	1109.8	314.7
16	14.1	70.0	1759.1	1136.8	322.3
17	16.3	70.1	1798.5	1183.5	335.6
18	18.5	70.4	1820.2	1221.4	346.5
19	20.6	70.7	1830.5	1251.1	354.7
20	22.8	71.2	1824.6	1273.6	360.9
21	24.9	71.7	1803.1	1287.5	365.0
22	27.0	72.4	1766.3	1294.9	367.1
23	29.0	73.2	1720.1	1295.6	367.4
24	31.0	74.1	1658.5	1290.0	365.8
25	33.0	75.1	1586.6	1278.5	362.5
26	34.9	76.2	1506.0	1261.5	357.7
27	36.7	77.4	1403.4	1239.3	351.4
28	38.5	78.7	1296.3	1213.5	343.8
29	39.7	79.7	1211.4	1190.3	337.5
30	41.0	80.7	1090.1	1090.1	374.9
31	42.6	82.2	970.6	970.6	333.8
32	44.1	83.8	847.8	847.8	291.5
33	45.5	85.5	723.0	723.0	248.6
34	46.8	87.2	597.7	597.7	205.5
35	47.7	88.5	509.1	509.1	175.1
36	48.6	89.4	407.6	407.6	140.2
37	49.7	91.7	266.0	266.0	91.5
38	50.7	93.7	135.3	135.3	46.5
39	51.4	95.3	36.6	36.6	12.6

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .00 (= .209E-02)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .01 (= .603E-02)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -1.08 (= -.108E+01)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .775E-03)
SHOULD NOT EXCEED .100E+03

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CIRCULAR; RS 03/18/2002

TABLE NO. 39

* Final Results for Side Forces and Stresses Between Slices. (Results for Critical Shear Surface in Case of a Search.) *

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 2.036 Side Force Inclination = 11.57 Degrees

BERM.OUT

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
	---------- VALUES AT RIGHT SIDE OF SLICE ----------					
1	-12.4	711.	79.5	.437	263.8	36.0
2	-10.7	764.	78.6	.464	254.7	307.6
3	-8.8	1566.	77.9	.466	316.4	479.4
4	-6.9	2538.	77.4	.466	400.4	604.5
5	-5.0	3614.	76.9	.472	496.3	695.7
6	-3.0	4738.	76.5	.483	601.5	757.9
7	-.9	5966.	76.1	.491	715.3	793.9
8	.0	6352.	76.0	.496	768.4	802.1
9	2.1	7475.	75.8	.447	634.8	948.2
10	4.2	8620.	75.6	.442	527.4	1084.8
11	6.4	9737.	75.4	.422	439.5	1205.5
12	8.6	10741.	75.4	.406	366.5	1308.4
13	10.7	11714.	75.4	.393	304.9	1393.2
14	12.9	12505.	75.5	.382	252.4	1460.0
15	13.0	12533.	75.5	.362	250.5	1462.3
16	15.2	13150.	75.7	.373	205.6	1511.1
17	17.4	13583.	75.9	.366	164.8	1542.9
18	19.6	13819.	76.3	.360	133.3	1558.5
19	21.7	13853.	76.7	.354	104.5	1558.4
20	23.4	13685.	77.2	.350	79.7	1543.3
21	25.9	13323.	77.8	.346	58.4	1513.8
22	28.0	12777.	78.4	.342	43.5	1470.6
23	30.0	12066.	79.1	.340	27.6	1414.4
24	32.0	11205.	80.0	.338	17.1	1345.9
25	33.9	10216.	80.9	.336	8.7	1264.1
26	35.8	9134.	81.8	.335	5.6	1176.0
27	37.6	8026.	82.9	.335	4.5	1076.7
28	39.3	6871.	84.0	.334	4.4	970.0
29	40.2	6316.	84.5	.334	8.3	916.2
30	41.8	5310.	85.4	.330	-7.6	442.3
31	43.5	4305.	86.7	.324	-20.7	758.4
32	44.8	3334.	87.9	.317	-32.1	665.5
33	46.2	2429.	89.1	.309	-38.5	564.0
34	47.5	1619.	90.4	.300	-41.3	452.5
35	48.0	1305.	91.0	.297	-39.1	398.1
36	49.2	693.	92.4	.310	-16.2	277.5
37	50.2	270.	93.8	.340	3.0	156.5
38	51.2	43.	95.3	.456	22.9	39.4
39	51.7	0.	96.0	BELOW	.0	.0

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .00 (= .209E-02)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .01 (= .603E-02)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -1.08 (= -.108E-01)
SHOULD NOT EXCEED .10CE+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .775E-03)
SHOULD NOT EXCEED .100E+03

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED

Attachment 4

CASE 4

UTEXAS3 Computer Data Files

Interim Configuration Shear Surfaces

- Surface 4-A: File INT_CIR.DAT
- Surface 4-B: File INT_NC.DAT

INT_CIR.DAT

```
HEADING
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2001
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
400 -80

2  2  SAND - MAT. 2
-500 80
0 80
400 88

3  3  LINER - MAT. 3
0 80
1.596 80.532
400 88.5

4  4  PROTECTIVE LAYER - MAT. 4
1.596 80.532
7.980 82.660
400 90.5

5  5  MSW - MAT. 5
7.980 82.660
285 175
400 175


MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
     115
     Conventional Shear Strength
     0 30
     Piezometric Line
     1
2 SAND - MAT. 2
     115
     Conventional Shear Strength
     0 25
     Piezometric Line
     1
3 LINER - MAT. 3
     130
     Nonlinear Mohr-Coulomb
     -1000 0
     0 0
     2005 439
     5013 787
     10025 1143
     15038 1594
     18000 1908

     Piezometric Line
     1
4  PROTECTIVE COVER - MAT. 4
     119
     Conventional Shear Strength
     0 35
     Piezometric Line
     1
5 MSW - MAT. 5
     54.0
     Nonlinear Mohr-Coulomb
     -1000 0
     -1 0
     0 501.24
     288.85 501.24
     417.7 501.24
     614.55 501.24
     835.4 636.86719
     5231.25 3685.03816

     Piezometric Line
     1

PIEZOMETRIC LINE DATA
1 62.4 PHREATIC
-500 80
1000 80


Analysis/computation data follow -
Circle Search
150 200 1 -80
TANGENT
50.389
PROCEDURE
SPENCER
FACTOR OF SAFETY
3.0
CRACK
7
ITR
100
SHORT

Plot
COMpute
```

INT_CIR.OUT

```
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        TABLE NO. 1
        ***********************************
        * COMPUTER PROGRAM DESIGNATION - UTEXAS3 *
        * Originally Coded By Stephen G. Wright  *
        * Version No. 1.206                      *
        * Last Revision Date  6/ 4/96            *
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        ***********************************


        ************************************************************
        *                                                          *
        *      RESULTS OF COMPUTATIONS PERFORMED USING THIS COMPUTER *
        * PROGRAM SHOULD NOT BE USED FOR DESIGN PURPOSES UNLESS THEY *
        * HAVE BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL   *
        * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE   *
        * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER  *
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        NON-CIRCULAR; RS 03/19/2002

        TABLE NO.  2
        ************************
        * NEW PROFILE LINE DATA *
        ************************

        PROFILE LINE  1 - MATERIAL TYPE =  1
        HAWTHORNE - MAT. 1

             Point        X              Y

               1       -500.000        -80.000
               2        400.000        -80.000

        PROFILE LINE  2 - MATERIAL TYPE =  2
        SAND - MAT. 2

             Point        X              Y

               1       -500.000         80.000
               2          .000          80.000
               3        400.000         88.000

        PROFILE LINE  3 - MATERIAL TYPE =  3
        LINER - MAT. 3

             Point        X              Y

               1          .000         80.000
               2         1.596         80.532
               3       400.000         88.500

        PROFILE LINE  4 - MATERIAL TYPE =  4
        PROTECTIVE LAYER - MAT. 4

             Point        X              Y

               1         1.596         80.532
               2         7.980         82.660
               3       400.000         90.500

        PROFILE LINE  5 - MATERIAL TYPE =  5
        NEW - MAT. 5

             Point        X              Y

               1         7.980         82.660
               2       385.000        175.000
               3       400.000        175.000

        All new profile lines defined - No old lines retained
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        TABLE NO.  3
        ************************************************************************
        * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ************************************************************************

        DATA FOR MATERIAL TYPE  1
        HAWTHORNE - MAT. 1

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  30.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  2
        SAND - MAT. 2

             Unit weight of material =  115.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  25.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  3
        LINER - MAT. 3

             Unit weight of material =  110.000

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2              .000               .000
               3           2905.000            439.000
               4           8013.000            787.000
               5          10025.000           1143.000
               6          15038.000           1594.000
               7          18050.000           1908.000

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  4
        PROTECTIVE COVER - MAT. 4

             Unit weight of material =  110.000

             CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
             Cohesion - - - - - - - -          .000
             Friction angle - - - - -  35.000 degrees

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        DATA FOR MATERIAL TYPE  5
        NEW - MAT. 5

             Unit weight of material =  54.800

             ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
             Point      Normal Stress      Shear Stress

               1          -1000.000              .000
               2              .000               .000
               3           2905.000            501.240
               4           8013.000            501.240
               5          10025.000            501.240
               6          15038.000            501.240
               7          18050.000            501.240
               8          5221.250            3485.038

             Pore water pressures defined by piezometric line
             Number of the piezometric line used =  1
             Negative pore pressures set to zero

        All new material properties defined - No old data retained
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        TABLE NO.  5
        ************************************************************************
        * NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
        ************************************************************************

        Line
         No.    Point        X              Y

          1 - Unit weight of water =   62.40   PHREATIC
          1          1      -500.000         80.000   PHREATIC
          1          2      1000.000         80.000   PHREATIC

        All new piezometric lines defined - No old lines retained
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        STABILITY ANALYSES - INTERIM SLOPE
        NON-CIRCULAR; RS 03/19/2002

        TABLE NO. 15
        ********************************
        * NEW ANALYSIS/COMPUTATION DATA *
        ********************************

        Circular Shear Surface(s)

        Automatic Search Performed

        Starting Center Coordinate for Search at -
                                                        X =      150.000
                                                        Y =      200.000

        Required accuracy for critical center (= minimum
        spacing between grid points) =         1.000

        Critical shear surface not allowed to pass below Y =      -80.000

        For the initial mode of search
        all circles are tangent to horizontal line at -
                                                        Y =       50.389

        Procedure used to compute the factor of safety: SPENCER

        Initial trial estimate for the factor of safety =    3.000

        Depth of crack =         .000

        Maximum number of iterations allowed for
        calculating the factor of safety =  100

        Short form of output will be used for search

        ------------------------------------------------------------------
        THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

        Initial trial estimate for side force inclination =  15.000 degrees
        (Applicable to Spencer's procedure only)

        Allowed force imbalance for convergence =      100.000

        Allowed moment imbalance for convergence =      100.000

        Initial trial values for factor of safety (and side force inclination
        for Spencer's procedure) will be kept constant during search

        Maximum subtended angle to be used for subdivision of the
        circle into slices =   3.00 degrees

        Search will be continued to locate a more critical shear
        surface (if one exists) after the initial mode is complete

        Depth of water in crack =         .000

        Unit weight of water in crack =    62.400

        Seismic coefficient =  .000

        Conventional (single-stage) computations to be performed
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        NON-CIRCULAR; RS 03/19/2002

        TABLE NO. 16
        ************************
        * NEW SLOPE GEOMETRY DATA *
        ************************

        NOTE - NO DATA WERE INPUT, SLOPE GEOMETRY DATA
        WERE GENERATED BY THE PROGRAM

        Slope Coordinates -

             Point        X              Y
```

INT_CIR.OUT

1	-500.000	80.000
2	.000	80.000
3	1.596	80.532
4	7.980	82.660
5	285.000	175.000
6	400.000	175.000

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NON-CIRCULAR; RS 03/19/2002

TABLE NO. 20
****
* SHORT-FORM TABLE FOR SEARCH WITH CIRCULAR SHEAR SURFACES *
****

Mode	Center Coordinates of Critical Circle X	Y	Radius	1-Stage Factor of Safety	Side Force Inclin.
2 Tangent Line at Y = 50.4	70.000	331.000	280.611	2.049	11.62
3 Constant Radius of R = 280.6	64.000	340.000	280.611	2.020	13.11
2 Tangent Line at Y = 59.4	63.000	350.000	290.611	2.018	13.06
3 Constant Radius of R = 290.6	63.000	351.000	290.611	2.018	13.26

TABLE NO. 21
***** 1-STAGE FINAL CRITICAL CIRCLE INFORMATION *****
X Coordinate of Center - - - - - - - - 63.000
Y Coordinate of Center - - - - - - - - 351.000
Radius - - - - - - - - - - - - - - - - 290.611
Factor of Safety - - - - - - - - - - - 2.018
Side Force Inclination - - - - - - - - 13.26

Number of circles tried - - - - - - - 213
No. of circles F calc. for - - - - - - 208

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STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	-41.9	80.0					
1	-34.8	77.4	4218.7	2	.00	25.00	159.8
	-27.6	74.9					
2	-20.3	72.7	12241.3	2	.00	25.00	455.7
	-13.0	70.5					
3	-6.5	68.9	16640.1	2	.00	25.00	692.2
	.0	67.1					
4	.8	67.1	2405.9	2	.00	25.00	803.4
	1.6	67.0					
5	4.8	66.3	11183.6	2	.00	25.00	855.0
	8.0	65.6					
6	15.5	64.4	33523.5	2	.00	25.00	973.4
	23.0	63.2					
7	30.5	62.3	41844.0	2	.00	25.00	1104.1
	38.1	61.5					
8	45.7	61.0	48769.2	2	.00	25.00	1185.4
	53.3	60.6					
9	58.1	60.5	34118.1	2	.00	25.00	1218.7
	63.0	60.4					
10	70.6	60.6	56960.8	2	.00	25.00	1211.3
	78.2	60.8					
11	85.8	61.6	59901.8	2	.00	25.00	1161.6
	93.4	62.0					
12	100.9	63.0	61257.7	2	.00	25.00	1062.4
	108.5	64.0					
13	115.9	65.4	61034.0	2	.00	25.00	914.0
	123.4	66.7					
14	130.8	68.5	59363.7	2	.00	25.00	716.6
	138.2	70.3					
15	145.5	72.5	56006.7	2	.00	25.00	471.0
	152.8	74.6					
16	160.0	77.2	51349.3	2	.00	25.00	177.7
	167.1	79.7					
17	167.5	79.8	2736.9	2	.00	25.00	9.6
	167.9	80.0					
18	172.3	81.8	24628.9	2	.00	25.00	.0
	176.6	83.5					
19	177.3	83.8	3865.5	3	NONLINEAR ENVELOPE		.0
	177.9	84.1					
20	180.3	85.1	14577.4	4	.00	35.00	.0
	182.6	86.2					

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NON-CIRCULAR; RS 03/19/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	182.6	86.2					
21	189.5	89.5	40302.7	5	NONLINEAR ENVELOPE		.0
	196.3	92.8					
22	203.0	96.4	37420.9	5	NONLINEAR ENVELOPE		.0
	209.7	100.1					
23	216.1	104.1	33955.4	5	NONLINEAR ENVELOPE		.0
	222.6	108.1					
24	228.8	112.5	29989.6	5	NONLINEAR ENVELOPE		.0
	235.1	116.8					
25	241.1	121.5	25616.1	5	NONLINEAR ENVELOPE		.0
	247.1	126.1					
26	252.9	131.1	20936.0	5	NONLINEAR ENVELOPE		.0
	258.6	136.1					
27	264.1	141.3	16057.2	5	NONLINEAR ENVELOPE		.0
	269.6	146.6					
28	274.8	152.2	11093.6	5	NONLINEAR ENVELOPE		.0
	280.0	157.7					
29	282.5	160.6	3716.0	5	NONLINEAR ENVELOPE		.0
	285.0	163.5					
30	286.5	165.2	1574.8	5	NONLINEAR ENVELOPE		.0
	287.9	167.0					

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STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 27
****
* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Seismic Force	Y for Seismic Force	FORCES DUE TO SURFACE PRESSURES Normal Force	Shear Force	X	Y
1	-34.8	0.	78.7	0.	0.	.0	.0
2	-20.3	0.	76.3	0.	0.	.0	.0
3	-6.5	0.	74.5	0.	0.	.0	.0
4	.8	0.	73.7	0.	0.	.0	.0
5	4.8	0.	73.9	0.	0.	.0	.0
6	15.5	0.	74.2	0.	0.	.0	.0
7	30.5	0.	74.6	0.	0.	.0	.0
8	45.7	0.	75.6	0.	0.	.0	.0
9	58.1	0.	76.8	0.	0.	.0	.0
10	70.6	0.	78.4	0.	0.	.0	.0
11	85.8	0.	80.6	0.	0.	.0	.0
12	100.9	0.	83.7	0.	0.	.0	.0
13	115.9	0.	87.2	0.	0.	.0	.0
14	130.8	0.	91.3	0.	0.	.0	.0
15	145.5	0.	96.1	0.	0.	.0	.0
16	160.0	0.	101.9	0.	0.	.0	.0
17	167.5	0.	105.3	0.	0.	.0	.0
18	172.3	0.	107.7	0.	0.	.0	.0
19	177.3	0.	110.4	0.	0.	.0	.0
20	180.3	0.	112.1	0.	0.	.0	.0
21	189.5	0.	116.3	0.	0.	.0	.0
22	203.0	0.	122.1	0.	0.	.0	.0
23	216.1	0.	128.1	0.	0.	.0	.0
24	228.8	0.	134.4	0.	0.	.0	.0
25	241.1	0.	140.9	0.	0.	.0	.0
26	252.9	0.	147.7	0.	0.	.0	.0
27	264.1	0.	154.7	0.	0.	.0	.0
28	274.8	0.	161.9	0.	0.	.0	.0
29	282.5	0.	167.4	0.	0.	.0	.0
30	286.5	0.	170.1	0.	0.	.0	.0

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NON-CIRCULAR; RS 03/19/2002

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	15.0000	.6274E+05	-.2361E+07		
First-order corrections to F and THETA					-.144E+01	-.102E+01
Values factored by .347E+00 - Deltas too large					-.500E+00	-.353E+00
2	2.50000	14.6469	.3661E+05	-.1321E+07		
First-order corrections to F and THETA					-.592E+00	-.967E+00
Values factored by .844E+00 - Deltas too large					-.500E+00	-.816E+00
3	2.00000	13.8306	-.2023E+04	.3303E+06		
First-order corrections to F and THETA					.152E-01	-.538E+00
Second-order correction - Iteration 1					.154E-01	-.538E+00
Second-order correction - Iteration 2					.154E-01	-.538E+00
4	2.01536	13.2926	.3314E+00	-.2544E+04		
First-order corrections to F and THETA					.928E-04	.953E-02
Second-order correction - Iteration 1					.928E-04	.954E-02
5	2.01545	13.3022	-.8278E-02	.1807E+01		
First-order corrections to F and THETA					.328E-07	-.526E-05

For trial number 2 with a nonlinear strength envelope the maximum
percent change in shear strength was 7.189 - at slice 28
Material: 5 Normal stress: 686.339
Strength from previous trial: 503.248
Estimated strength for new trial: 540.067

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	2.01545	13.3022	-.2497E+03	.2458E+05		
First-order corrections to F and THETA					.263E-02	-.389E-01
Second-order correction - Iteration 1					.264E-02	-.389E-01
2	2.01809	13.2632	.1984E-03	-.2776E+02		
First-order corrections to F and THETA					.103E-05	.105E-03

For trial number 3 with a nonlinear strength envelope the maximum
percent change in shear strength was .000 - at slice 28
Material: 5 Normal stress: 676.232
Strength from previous trial: 533.503
Estimated strength for new trial: 533.503

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	2.01809	13.2632	.1984E-03	-.2776E+02		
First-order corrections to F and THETA					.103E-05	.105E-03

Factor of Safety - - - - - - - - - 2.018
Side Force Inclination - - - - - 13.26
Number of Iterations - - - - - - 1

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STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

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```
TABLE NO. 38
**************************************************************
*  Final Results for Stresses Along the Shear Surface        *
*  (Results for Critical Shear Surface in Case of a Search.) *
**************************************************************

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety =  2.018     Side Force Inclination =  13.26 Degrees

        -------- VALUES AT CENTER OF BASE OF SLICE---------

                                 Total     Effective
Slice                            Normal    Normal       Shear
 No.   X-center  Y-center        Stress    Stress       Stress

   1      -36.8      77.4        350.0       190.3        44.6
   2      -20.3      72.7        972.6       516.7       119.4
   3       -6.5      68.9       1443.2       751.0       171.5
   4         .8      67.1       1690.5       887.1       205.0
   5        6.6      66.1       1958.4      1103.4       255.0
   6       15.5      64.4       2468.6      1495.2       345.5
   7       30.5      62.3       2999.5      1895.4       438.0
   8       45.7      61.0       3432.4      2227.0       514.6
   9       58.1      60.5       3673.8      2455.1       567.3
  10       70.6      60.6       3849.0      2637.7       609.5
  11       85.8      61.4       3977.7      2816.0       650.7
  12      100.9      63.0       4007.4      2945.0       680.5
  13      115.9      65.6       3962.9      3028.9       699.9
  14      130.8      68.5       3788.4      3071.7       709.8
  15      145.5      72.5       3548.4      3077.4       711.1
  16      160.0      77.2       3227.5      3049.8       704.7
  17      167.5      79.8       3037.2      3037.5       699.6
  18      172.3      81.4       2898.3      2898.3       669.7
  19      177.3      83.8       2820.0      2820.0       260.6
  20      180.3      85.1       2610.7      2610.7       905.8
  21      189.5      89.5       2455.1      2455.1       836.8
  22      203.0      96.4       2268.7      2268.7       776.8
  23      216.1     104.1       2053.8      2053.8       707.7
  24      228.8     112.5       1813.7      1813.7       630.4
  25      241.1     121.5       1552.1      1552.1       546.2
  26      252.9     131.1       1272.6      1272.6       456.3
  27      264.3     141.3        979.2       979.2       361.9
  28      274.8     152.3        676.2       676.2       264.4
  29      282.5     160.6        406.2       406.2       248.4
  30      286.5     165.2        229.9       229.9       248.4

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION     =          .02   (=  .185E-01)
     SHOULD NOT EXCEED      .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION   =          .03   (=  .323E-01)
     SHOULD NOT EXCEED      .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN  =        29.27   (=  .293E-02)
     SHOULD NOT EXCEED      .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM    =          .00   (=  .373E-02)
     SHOULD NOT EXCEED      .100E+03
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STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; EX 03/19/2002

TABLE NO. 39
**************************************************************
*  Final Results for Side Forces and Stresses Between Slices. *
*  (Results for Critical Shear Surface in Case of a Search.)  *
**************************************************************

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety =  2.018     Side Force Inclination =  13.26 Degrees

        ---------- VALUES AT RIGHT SIDE OF SLICE ----------

                                 Side    Y-Coord. of   Fraction    Sigma      Sigma
Slice                            Force   Side Force    of          at         at
 No.   X-Right                  Force   Location      Height      Top        Bottom

   1      -27.6      2489.      79.3        .630      1408.8      -662.8
   2      -13.0      8636.      76.8        .659      1736.2        42.3
   3         .0     15729.      75.6        .654      2317.2        93.6
   4        1.6     16672.      75.5        .629      2116.8       272.7
   5        8.0     20971.      75.0        .547      1539.0       860.2
   6       23.0     32610.      74.1        .446       878.0      1712.3
   7       38.1     44651.      74.0        .401       568.0      2213.8
   8       53.3     55856.      74.6        .378       390.1      2531.5
   9       63.0     62123.      75.4        .369       315.0      2662.9
  10       78.2     70072.      77.1        .359       236.0      2776.3
  11       93.4     75336.      79.4        .355       192.5      2791.5
  12      108.5     77703.      82.4        .354       176.1      2723.4
  13      123.4     77229.      86.1        .355       181.0      2582.5
  14      138.2     74193.      90.9        .359       202.3      2386.9
  15      152.8     69097.      95.2        .366       233.5      2154.7
  16      167.1     62639.     100.6        .374       265.0      1911.6
  17      167.9     62251.     101.0        .374       266.6      1898.1
  18      176.6     57719.     104.6        .381       287.7      1742.3
  19      177.9     56526.     105.3        .385       309.6      1682.8
  20      182.4     55330.     106.8        .379       270.2      1698.0
  21      194.3     50388.     112.0        .365       176.1      1696.8
  22      209.7     43948.     117.6        .352        97.9      1620.8
  23      232.6     36428.     123.8        .340        31.8      1507.4
  24      235.1     26335.     130.4        .327       -24.8      1352.4
  25      247.1     20207.     137.4        .311       -73.6      1159.5
  26      258.6     12605.     144.7        .287      -113.9       926.5
  27      269.6      6091.     152.3        .244      -136.1       646.1
  28      280.0      1211.     160.2        .161       -77.5       225.0
  29      285.0        85.     164.5        .093       -10.4        24.7
  30      287.9         0.     1142.8       ABOVE       -2.7         2.7

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION     =          .02   (=  .185E-01)
     SHOULD NOT EXCEED      .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION   =          .03   (=  .323E-01)
     SHOULD NOT EXCEED      .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN  =        29.27   (=  .293E-02)
     SHOULD NOT EXCEED      .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM    =          .00   (=  .373E-02)
     SHOULD NOT EXCEED      .100E+03

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED
```

INT_NC.DAT

```
HEADING
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR, RS 03/19/2002
PROFILE LINES
1  1  HAWTHORNE - MAT. 1
-500 -80
400 -80

2  2  SAND - MAT. 2
-500 80
0 80
400 88

3  3  LINER - MAT. 3
0 80
1.596 80.532
400 88.5

4  4  PROTECTIVE LAYER - MAT. 4
1.596 80.532
7.980 82.660
400 90.5

5  5  MSW - MAT. 5
7.980 82.660
285 175
400 175

MATERIAL PROPERTIES
1  HAWTHORNE - MAT. 1
    115
    Conventional Shear Strength
    0 30
    Piezometric Line
    1
2 SAND - MAT. 2
    115
    Conventional Shear Strength
    0 25
    Piezometric Line
    1
3 LINER - MAT. 3
    110
    Nonlinear Mohr-Coulomb
    -1000 0
    0 0
    2005 429
    5013 787
    10025 1143
    15038 1594
    18000 1908

    Piezometric Line
    1
4  PROTECTIVE COVER - MAT. 4
    110
    Conventional Shear Strength
    0 35
    Piezometric Line
    1
5 MSW - MAT. 5
    54.8
    Nonlinear Mohr-Coulomb
    -1000 0
    -1 0
    0 501.24
    208.85 501.24
    417.7 501.24
    626.55 501.24
    835.4 634.86719
    5221.35 3485.03418

    Piezometric Line
    1

PIEZOMETRIC LINE DATA
1 63.4 PHREATIC
-500 80
1000 80


ANAlysis/computation data follow -
NonCircular Search
6.798 80.266 FIX
222 84.69 1.346
293.72 160

.5
FACTOR OF SAFETY
3.0
ITR
100
SHORT

Plot
COMpute
```

INT_NC.OUT

```
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     TABLE NO. 1
     ****************************************
     * COMPUTER PROGRAM DESIGNATION - UTEXAS3 *
     * Originally Coded By Stephen G. Wright  *
     * Version No. 1.206                      *
     * Last Revision Date  6/ 4/96            *
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     ****************************************

     ***************************************************************
     *                                                             *
     *      RESULTS OF COMPUTATIONS PERFORMED USING THIS COMPUTER *
     * PROGRAM SHOULD NOT BE USED FOR DESIGN PURPOSES UNLESS THEY *
     * HAVE BEEN VERIFIED BY INDEPENDENT ANALYSES, EXPERIMENTAL   *
     * DATA OR FIELD EXPERIENCE. THE USER SHOULD UNDERSTAND THE   *
     * ALGORITHMS AND ANALYTICAL PROCEDURES USED IN THE COMPUTER  *
     * PROGRAM AND MUST HAVE READ ALL DOCUMENTATION FOR THIS      *
     * PROGRAM BEFORE ATTEMPTING ITS USE.                         *
     *                                                             *
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     *                                                             *
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     STABILITY ANALYSES - INTERIM SLOPE
     NON-CIRCULAR; RS 03/19/2002

     TABLE NO.  2
     ************************
     * NEW PROFILE LINE DATA *
     ************************

     PROFILE LINE  1 - MATERIAL TYPE =  1
     HAWTHORNE - MAT. 1

          Point        X              Y

            1       -500.000        -80.000
            2        400.000        -80.000

     PROFILE LINE  2 - MATERIAL TYPE =  2
     SAND - MAT. 2

          Point        X              Y

            1       -500.000         80.000
            2           .000         80.000
            3        400.000         88.000

     PROFILE LINE  3 - MATERIAL TYPE =  3
     LINER - MAT. 3

          Point        X              Y

            1           .000         80.000
            2          1.596         80.532
            3        400.000         88.500

     PROFILE LINE  4 - MATERIAL TYPE =  4
     PROTECTIVE LAYER - MAT. 4

          Point        X              Y

            1          1.596         80.532
            2          7.980         82.660
            3        400.000         90.500

     PROFILE LINE  5 - MATERIAL TYPE =  5
     MSW - MAT. 5

          Point        X              Y

            1          7.980         82.660
            2        285.000        175.000
            3        400.000        175.000

     All new profile lines defined - No old lines retained
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     STABILITY ANALYSES - INTERIM SLOPE
     NON-CIRCULAR; RS 03/19/2002

     TABLE NO.  3
     *********************************************************************
     * NEW MATERIAL PROPERTY DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
     *********************************************************************

     DATA FOR MATERIAL TYPE  1
     HAWTHORNE - MAT. 1

          Unit weight of material =  115.000

          CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
          Cohesion - - - - - - - - -          .000
          Friction angle - - - - -  30.000 degrees

          Pore water pressures defined by piezometric line
          Number of the piezometric line used =  1
          Negative pore pressures set to zero

     DATA FOR MATERIAL TYPE  2
     SAND - MAT. 2

          Unit weight of material =  115.000

          CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
          Cohesion - - - - - - - - -          .000
          Friction angle - - - - -  25.000 degrees

          Pore water pressures defined by piezometric line
          Number of the piezometric line used =  1
          Negative pore pressures set to zero

     DATA FOR MATERIAL TYPE  3
     LINER - MAT. 3

          Unit weight of material =  110.000

          ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
          Point      Normal Stress      Shear Stress

            1          -1000.000             .000
            2               .000             .000
            3           2005.000          429.000
            4           5013.000          787.000
            5          10025.000         1143.000
            6          15038.000         1594.000
            7          18000.000         1908.000

          Pore water pressures defined by piezometric line
          Number of the piezometric line used =  1
          Negative pore pressures set to zero

     DATA FOR MATERIAL TYPE  4
     PROTECTIVE COVER - MAT. 4

          Unit weight of material =  110.000

          CONVENTIONAL (ISOTROPIC) SHEAR STRENGTHS
          Cohesion - - - - - - - - -          .000
          Friction angle - - - - -  35.000 degrees

          Pore water pressures defined by piezometric line
          Number of the piezometric line used =  1
          Negative pore pressures set to zero

     DATA FOR MATERIAL TYPE  5
     MSW - MAT. 5

          Unit weight of material =   54.800

          ---- NONLINEAR SHEAR STRENGTH ENVELOPE ----
          Point      Normal Stress      Shear Stress

            1          -1000.000             .000
            2             -1.000             .000
            3               .000          501.240
            4            208.850          501.240
            5            417.700          501.240
            6            626.550          501.240
            7            835.400          636.867
            8           5221.250         3485.038

          Pore water pressures defined by piezometric line
          Number of the piezometric line used =  1
          Negative pore pressures set to zero

     All new material properties defined - No old data retained
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     STABILITY ANALYSES - INTERIM SLOPE
     NON-CIRCULAR; RS 03/19/2002

     TABLE NO.  5
     *********************************************************************
     * NEW PIEZOMETRIC LINE DATA - CONVENTIONAL/FIRST-STAGE COMPUTATIONS *
     *********************************************************************

     Line
      No.    Point        X              Y

       1 - Unit weight of water =    62.40   PHREATIC
       1        1     -500.000        80.000   PHREATIC
       1        2     1000.000        80.000   PHREATIC

     All new piezometric lines defined - No old lines retained
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     OAK HAMMOCK DISPOSAL FACILITY
     STABILITY ANALYSES - INTERIM SLOPE
     NON-CIRCULAR; RS 03/19/2002

     TABLE NO. 15
     ********************************
     * NEW ANALYSIS/COMPUTATION DATA *
     ********************************

     Noncircular Shear Surface(s)

     Automatic Search Performed


     Coordinates of points on shear surface which are to be shifted -

     Point          X                Y       Shift Angle

        1           .798           80.266                          - fixed
        2        222.000           84.690      1.15                - moveable
        3        293.720          160.000   angle to be computed - moveable

     Initial distance for shifting points on shear surface =     .500
     Maximum steepness permitted for toe of shear surface = 50.00 degrees

     Initial trial estimate for the factor of safety =   1.000

     Maximum number of iterations allowed for
     calculating the factor of safety =  100

     Short form of output will be used for search

     ----------------------------------------------------------------------
     THE FOLLOWING REPRESENT EITHER DEFAULT OR PREVIOUSLY DEFINED VALUES:

     Initial trial estimate for side force inclination =  15.000 degrees
     (Applicable to Spencer's procedure only)

     Allowed force imbalance for convergence =      100.000

     Allowed moment imbalance for convergence =      100.000

     Initial trial values for factor of safety (and side force inclination
     for Spencer's procedure) will be kept constant during search

     Number of increments for slice subdivision =   30

     Depth of water in crack =          .000

     Unit weight of water in crack =     62.400

     Seismic coefficient =  .000

     Conventional (single-stage) computations to be performed

     Procedure used to compute the factor of safety: SPENCER
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     STABILITY ANALYSES - INTERIM SLOPE
     NON-CIRCULAR; RS 03/19/2002

     TABLE NO. 16
     **************************
     * NEW SLOPE GEOMETRY DATA *
     **************************

     NOTE - NO DATA WERE INPUT, SLOPE GEOMETRY DATA
     WERE GENERATED BY THE PROGRAM

     Slope Coordinates -

          Point        X              Y

            1     -500.000         80.000
            2         .000         80.000
            3        1.596         80.532
            4        7.980         82.660
            5      285.000        175.000
            6      400.000        175.000
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STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 24
****
* SHORT-FORM TABLE FOR SEARCH WITH NONCIRCULAR SHEAR SURFACES *
****

1-Stage

Trial	X	Y	X	Y	Factor of Safety	Side Force Inclin.
	-------- Shear Surface Coordinates	--------				
0	.80	80.27	222.00	84.69	1.387	15.61
	293.72	160.00				
1	.80	80.27	222.00	84.69	1.386	15.63
	293.72	160.00				
2	.80	80.27	222.50	84.70	1.385	15.64
	293.22	160.00				
3	.80	80.27	223.00	84.71	1.385	15.66
	292.72	160.00				
4	.80	80.27	223.50	84.72	1.384	15.67
	292.22	160.00				
5	.80	80.27	224.00	84.73	1.384	15.67
	291.72	160.00				
6	.80	80.27	224.50	84.74	1.384	15.67
	291.53	160.00				
7	.80	80.27	225.00	84.75	1.384	15.67
	291.54	160.00				
8	.80	80.27	225.50	84.76	1.384	15.67
	291.61	160.00				
9	.80	80.27	225.50	84.76	1.384	15.66
	291.74	160.00				
10	.80	80.27	225.50	84.76	1.384	15.66
	291.74	160.00				
11	.80	80.27	225.85	84.77	1.384	15.66
	291.75	160.00				
12	.80	80.27	225.85	84.77	1.384	15.66
	291.75	160.00				
13	.80	80.27	225.85	84.77	1.384	15.66
	291.75	160.00				

TABLE NO. 25
****
* FINAL CRITICAL SHEAR SURFACE (FOUND AFTER 13 TRIAL POSITIONS) *
****

X	Y
.80	80.27
225.80	84.77
291.75	160.00

1-Stage Factor of Safety = 1.384

Side Force Inclination = 15.66
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STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	.8	80.3					
1	1.2	80.3	31.0	3	NONLINEAR	ENVELOPE	.0
	1.6	80.3					
2	4.8	80.3	877.9	3	NONLINEAR	ENVELOPE	.0
	8.0	80.4					
3	12.7	80.5	3114.3	3	NONLINEAR	ENVELOPE	.0
	17.5	80.6					
4	22.2	80.7	4654.3	3	NONLINEAR	ENVELOPE	.0
	26.9	80.8					
5	31.7	80.9	6194.3	3	NONLINEAR	ENVELOPE	.0
	36.4	81.0					
6	41.1	81.1	7734.3	3	NONLINEAR	ENVELOPE	.0
	45.9	81.2					
7	50.6	81.3	9274.3	3	NONLINEAR	ENVELOPE	.0
	55.3	81.4					
8	60.1	81.5	10814.3	3	NONLINEAR	ENVELOPE	.0
	64.8	81.5					
9	69.5	81.6	12354.3	3	NONLINEAR	ENVELOPE	.0
	74.3	81.7					
10	79.0	81.8	13894.3	3	NONLINEAR	ENVELOPE	.0
	83.7	81.9					
11	88.5	82.0	15434.4	3	NONLINEAR	ENVELOPE	.0
	93.2	82.1					
12	97.9	82.2	16974.4	3	NONLINEAR	ENVELOPE	.0
	102.7	82.3					
13	107.4	82.4	18514.4	3	NONLINEAR	ENVELOPE	.0
	112.2	82.5					
14	116.9	82.6	20054.4	3	NONLINEAR	ENVELOPE	.0
	121.6	82.7					
15	126.4	82.8	21594.4	3	NONLINEAR	ENVELOPE	.0
	131.1	82.9					
16	135.8	83.0	23134.4	3	NONLINEAR	ENVELOPE	.0
	140.6	83.1					
17	145.3	83.2	24674.4	3	NONLINEAR	ENVELOPE	.0
	150.0	83.3					
18	154.8	83.3	26214.4	3	NONLINEAR	ENVELOPE	.0
	159.5	83.4					
19	164.2	83.5	27754.4	3	NONLINEAR	ENVELOPE	.0
	169.0	83.6					
20	173.7	83.7	29294.4	3	NONLINEAR	ENVELOPE	.0
	178.4	83.8					

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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 26
****
* Coordinate, Weight, Strength and Pore Water Pressure *
* Information for Individual Slices for Conventional *
* Computations or First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Y	Slice Weight	Matl. Type	Cohesion	Friction Angle	Pore Pressure
	178.4	83.8					
21	183.2	83.9	30834.4	3	NONLINEAR	ENVELOPE	.0
	187.9	84.0					
22	192.7	84.1	32374.4	3	NONLINEAR	ENVELOPE	.0
	197.4	84.2					
23	202.1	84.3	33914.4	3	NONLINEAR	ENVELOPE	.0
	206.9	84.4					
24	211.6	84.5	35454.4	3	NONLINEAR	ENVELOPE	.0
	216.3	84.6					
25	221.1	84.7	36994.5	3	NONLINEAR	ENVELOPE	.0
	225.8	84.8					
26	225.9	84.9	487.0	3	NONLINEAR	ENVELOPE	.0
	226.0	85.0					
27	226.9	86.0	6906.7	4	.00	35.00	.0
	227.8	87.1					
28	231.0	90.7	23093.4	5	NONLINEAR	ENVELOPE	.0
	234.2	94.3					
29	237.3	97.9	21307.1	5	NONLINEAR	ENVELOPE	.0
	240.5	101.6					
30	243.7	105.2	19520.9	5	NONLINEAR	ENVELOPE	.0
	246.9	108.8					
31	250.0	112.4	17734.6	5	NONLINEAR	ENVELOPE	.0
	253.2	116.0					
32	256.4	119.7	15948.3	5	NONLINEAR	ENVELOPE	.0
	259.6	123.3					
33	262.8	126.9	14162.0	5	NONLINEAR	ENVELOPE	.0
	265.9	130.5					
34	269.1	134.2	12375.8	5	NONLINEAR	ENVELOPE	.0
	272.3	137.8					
35	275.5	141.4	10589.5	5	NONLINEAR	ENVELOPE	.0
	278.6	145.0					
36	281.8	148.7	8803.3	5	NONLINEAR	ENVELOPE	.0
	285.0	152.3					
37	286.7	154.2	3452.3	5	NONLINEAR	ENVELOPE	.0
	288.4	156.1					
38	290.1	158.1	3137.4	5	NONLINEAR	ENVELOPE	.0
	291.8	160.0					

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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 27
****
* Seismic Forces and Forces Due to Surface Pressures for *
* Individual Slices for Conventional Computations or the *
* First Stage of Multi-Stage Computations. *
* (Information is for the Critical Shear Surface in the *
* Case of an Automatic Search.) *
****

Slice No.	X	Seismic Force	Y for Seismic Force	FORCES DUE TO SURFACE PRESSURES Normal Force	Shear Force	X	Y
1	1.2	0.	80.3	0.	0.	.0	.0
2	4.8	0.	81.0	0.	0.	.0	.0
3	12.7	0.	82.1	0.	0.	.0	.0
4	22.2	0.	83.5	0.	0.	.0	.0
5	31.7	0.	85.0	0.	0.	.0	.0
6	41.1	0.	86.6	0.	0.	.0	.0
7	50.6	0.	88.3	0.	0.	.0	.0
8	60.1	0.	89.8	0.	0.	.0	.0
9	69.5	0.	91.5	0.	0.	.0	.0
10	79.0	0.	93.1	0.	0.	.0	.0
11	88.5	0.	94.8	0.	0.	.0	.0
12	97.9	0.	96.5	0.	0.	.0	.0
13	107.4	0.	98.1	0.	0.	.0	.0
14	116.9	0.	99.8	0.	0.	.0	.0
15	126.4	0.	101.4	0.	0.	.0	.0
16	135.8	0.	103.1	0.	0.	.0	.0
17	145.3	0.	104.8	0.	0.	.0	.0
18	154.8	0.	106.4	0.	0.	.0	.0
19	164.2	0.	108.1	0.	0.	.0	.0
20	173.7	0.	109.8	0.	0.	.0	.0
21	183.2	0.	111.4	0.	0.	.0	.0
22	192.7	0.	113.1	0.	0.	.0	.0
23	202.1	0.	114.8	0.	0.	.0	.0
24	211.6	0.	116.4	0.	0.	.0	.0
25	221.1	0.	118.1	0.	0.	.0	.0
26	225.9	0.	119.1	0.	0.	.0	.0
27	226.9	0.	120.3	0.	0.	.0	.0
28	231.0	0.	123.8	0.	0.	.0	.0
29	237.3	0.	128.5	0.	0.	.0	.0
30	243.7	0.	133.2	0.	0.	.0	.0
31	250.0	0.	137.9	0.	0.	.0	.0
32	256.4	0.	142.6	0.	0.	.0	.0
33	262.8	0.	147.3	0.	0.	.0	.0
34	269.1	0.	151.9	0.	0.	.0	.0
35	275.5	0.	156.6	0.	0.	.0	.0
36	281.8	0.	161.3	0.	0.	.0	.0
37	286.7	0.	164.6	0.	0.	.0	.0
38	290.1	0.	166.5	0.	0.	.0	.0

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STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	3.00000	15.0000	.7804E+05	-.3596E+07		
First-order corrections to F and THETA					-.334E+01	.258E+00
Values factored by .150E+00 - Deltas too large					-.500E+00	.387E-01
2	2.50000	15.0387	.6414E+05	-.2962E+07		
First-order corrections to F and THETA					-.195E+01	.274E+00
Values factored by .256E+00 - Deltas too large					-.500E+00	.704E-01
3	2.00000	15.1091	.4395E+05	-.2039E+07		
First-order corrections to F and THETA					-.881E+00	.307E+00
Values factored by .568E+00 - Deltas too large					-.500E+00	.174E+00
4	1.50000	15.2835	.1150E+05	-.5680E+06		
First-order corrections to F and THETA					-.134E+00	.398E+00
Second-order correction - Iteration 1					-.124E+00	.398E+00
Second-order correction - Iteration 2					-.124E+00	.398E+00
5	1.37571	15.6817	-.6855E+02	-.1418E+05		
First-order corrections to F and THETA					.155E-02	.144E+00
Second-order correction - Iteration 1					.155E-02	.148E+00

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4 1.37727 15.8296 .3418E-02 .4169E+02
First-order corrections to F and THETA .... -.214E-05 -.361E-03

For trial number 2 with a nonlinear strength envelope the maximum
percent change in shear strength was 19.298 - at slice 36
Material: 5 Normal stress: 811.123
Strength from previous trial: 501.240
Estimated strength for new trial: 621.101

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	1.37727	15.8296	-.7317E+03	.4956E+05		

First-order corrections to F and THETA .... .652E-02 -.171E+00
Second-order correction - Iteration 1 .... .654E-02 -.171E+00
Second-order correction - Iteration 2 .... .654E-02 -.171E+00

2 1.38381 15.6584 .8545E-02 -.4660E+01
First-order corrections to F and THETA .... .225E-04 .410E-02
Second-order correction - Iteration 1 .... .225E-04 .410E-02

3 1.38384 15.6625 -.1300E-01 .7758E+00
First-order corrections to F and THETA .... .123E-06 -.198E-05

For trial number 3 with a nonlinear strength envelope the maximum
percent change in shear strength was .060 - at slice 37
Material: 5 Normal stress: 627.013
Strength from previous trial: 501.240
Estimated strength for new trial: 501.541

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	1.38384	15.6625	-.1032E+01	.7324E+02		

First-order corrections to F and THETA .... .923E-05 -.261E-03

For trial number 4 with a nonlinear strength envelope the maximum
percent change in shear strength was .000 - at slice 21
Material: 3 Normal stress: 3347.892
Strength from previous trial: 588.826
Estimated strength for new trial: 588.826

TABLE NO. 29
****
* Information Generated During Iterative Solution for the Factor *
* of Safety and Side Force Inclination by Spencer's Procedure *
****

Iter-ation	Trial Factor of Safety	Trial Side Force Inclination (degrees)	Force Imbalance (lbs.)	Moment Imbalance (ft.-lbs.)	Delta-F	Delta Theta (degrees)
1	1.38384	15.6625	-.1033E+01	.7324E+02		

First-order corrections to F and THETA .... .923E-05 -.261E-03

Factor of Safety - - - - - - - - - 1.384
Side Force Inclination - - - - - 15.66
Number of Iterations - - - - - - 3

1 UTEXAS3 - VER. 1.206 - 6/ 4/96 - (C) 1985-1996 S. G. WRIGHT
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Date: 3:27:2002 Time: 17:39:42 Input file: INT_NC.DAT
OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 38
****
* Final Results for Stresses Along the Shear Surface *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 1.384 Side Force Inclination = 15.66 Degrees

-------- VALUES AT CENTER OF BASE OF SLICE---------

Slice No.	X-center	Y-center	Total Normal Stress	Effective Normal Stress	Shear Stress
1	1.2	80.3	14.2	14.2	2.2
2	4.8	80.3	142.5	142.5	22.0
3	12.7	80.5	340.7	340.7	52.7
4	22.2	80.7	509.1	509.1	78.7
5	31.7	80.9	677.6	677.6	104.8
6	41.1	81.1	846.0	846.0	130.8
7	50.6	81.3	1014.4	1014.4	156.9
8	60.1	81.5	1182.9	1182.9	182.9
9	69.5	81.6	1351.3	1351.3	208.9
10	79.0	81.8	1519.8	1519.8	235.0
11	88.5	82.0	1688.2	1688.2	261.0
12	97.9	82.2	1856.7	1856.7	287.1
13	107.4	82.4	2024.8	2024.8	311.7
14	116.9	82.6	2190.2	2190.2	325.9
15	126.4	82.8	2355.6	2355.6	340.2
16	135.8	83.0	2520.9	2520.9	354.4
17	145.3	83.2	2686.3	2686.3	368.6
18	154.8	83.3	2851.7	2851.7	382.8
19	164.2	83.5	3017.1	3017.1	397.1
20	173.7	83.7	3182.5	3182.5	411.3
21	183.2	83.9	3347.9	3347.9	425.5
22	192.7	84.1	3513.3	3513.3	439.7
23	202.1	84.3	3678.7	3678.7	454.0
24	211.6	84.5	3844.1	3844.1	468.2
25	221.1	84.7	4009.4	4009.4	482.4
26	225.9	84.9	2767.7	2767.7	375.6
27	226.9	86.0	2204.7	2204.7	1115.6
28	231.0	90.7	2074.6	2074.6	1041.7
29	237.3	97.9	1911.5	1911.5	965.2
30	243.7	105.2	1748.4	1748.4	888.7
31	250.0	112.4	1585.3	1585.3	812.1
32	256.4	119.7	1422.2	1422.2	735.6
33	262.8	126.9	1259.1	1259.1	659.0
34	269.1	134.2	1096.0	1096.0	582.5
35	275.5	141.4	932.9	932.9	506.0
36	281.8	148.7	769.8	769.8	429.4
37	286.7	154.2	626.9	626.9	363.4
38	290.1	158.1	466.8	466.8	362.2

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .01 (= .148E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .02 (= .164E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -72.04 (= -.720E+02)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .446E-02)
SHOULD NOT EXCEED .100E+03

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OAK HAMMOCK DISPOSAL FACILITY
STABILITY ANALYSES - INTERIM SLOPE
NON-CIRCULAR; RS 03/19/2002

TABLE NO. 39
****
* Final Results for Side Forces and Stresses Between Slices. *
* (Results for Critical Shear Surface in Case of a Search.) *
****

SPENCER'S PROCEDURE USED TO COMPUTE FACTOR OF SAFETY
Factor of Safety = 1.384 Side Force Inclination = 15.66 Degrees

--------------- VALUES AT RIGHT SIDE OF SLICE ---------------

Slice No.	X-Right	Side Force	Y-Coord. of Side Force Location	Fraction of Height	Sigma at Top	Sigma at Bottom
1	3.4	2.	80.4	.415	3.0	9.2
2	8.0	129.	81.3	.374	13.6	96.6
3	17.5	580.	82.3	.325	-5.6	219.6
4	26.9	1254.	83.4	.316	-15.4	310.4
5	36.4	2151.	84.4	.310	-25.8	397.2
6	45.9	3271.	85.5	.306	-36.8	482.9
7	55.3	4614.	86.5	.302	-48.2	568.2
8	64.8	6180.	87.6	.300	-59.7	653.2
9	74.3	7970.	88.6	.298	-71.5	738.1
10	83.7	9982.	89.6	.296	-83.3	822.9
11	93.2	12217.	90.6	.294	-95.2	907.7
12	102.7	14676.	91.7	.293	-107.2	992.4
13	112.2	17343.	92.7	.292	-118.5	1075.7
14	121.6	20118.	93.8	.293	-124.8	1148.1
15	131.1	23000.	94.9	.294	-127.9	1212.8
16	140.6	25990.	96.0	.296	-129.2	1272.1
17	160.0	29087.	97.2	.297	-129.4	1327.3
18	159.5	32292.	98.3	.299	-128.9	1379.4
19	169.0	35603.	99.5	.301	-128.1	1429.2
20	178.4	39022.	100.6	.302	-127.2	1477.3
21	187.9	42549.	101.8	.303	-126.3	1523.9
22	197.4	46183.	102.9	.304	-125.6	1569.4
23	206.9	49924.	104.1	.305	-125.0	1614.0
24	216.3	53773.	105.3	.306	-124.6	1657.9
25	225.8	57729.	106.4	.307	-124.4	1701.3
26	226.0	57084.	106.7	.309	-116.2	1679.5
27	227.8	54491.	108.2	.307	-119.5	1641.0
28	234.2	45750.	113.5	.301	-132.5	1514.5
29	240.5	37732.	118.8	.294	-145.4	1384.9
30	246.9	30437.	124.1	.285	-157.8	1253.6
31	253.2	23864.	129.3	.274	-169.4	1119.6
32	259.6	18013.	134.5	.259	-179.0	981.4
33	265.9	12886.	139.6	.239	-184.6	836.0
34	272.3	8480.	144.7	.210	-182.7	677.9
35	278.6	4798.	149.7	.169	-163.8	495.6
36	285.0	1838.	154.7	.106	-106.4	262.2
37	288.4	599.	157.6	.077	-47.3	168.2
38	291.8	1.	156.1	BELOW	-.2	.4

CHECK SUMS - (ALL SHOULD BE SMALL)
SUM OF FORCES IN VERTICAL DIRECTION = .01 (= .148E-01)
SHOULD NOT EXCEED .100E+03
SUM OF FORCES IN HORIZONTAL DIRECTION = .02 (= .164E-01)
SHOULD NOT EXCEED .100E+03
SUM OF MOMENTS ABOUT COORDINATE ORIGIN = -72.04 (= -.720E+02)
SHOULD NOT EXCEED .100E+03
SHEAR STRENGTH/SHEAR FORCE CHECK-SUM = .00 (= .446E-02)
SHOULD NOT EXCEED .100E+03

END-OF-FILE ENCOUNTERED WHILE READING COMMAND
WORDS - END OF PROBLEM(S) ASSUMED

SETTLEMENT ANALYSIS

1. INTRODUCTION

1.1 Project Description
1.2 Purpose of Analysis
1.3 Method of Analysis

2. ANALYSIS PARAMETERS

2.1 Geometry
2.2 Soil Properties
2.3 Waste Properties

3. VERTICAL STRESS INCREASE

4. SETTLEMENT

5. POST-SETTLEMENT SUBGRADE ELEVATIONS AND SLOPES

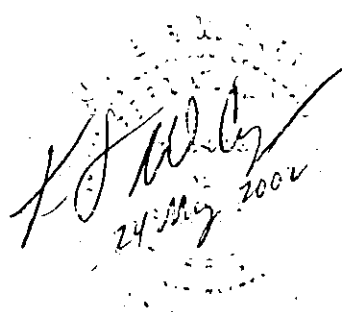
6. LINER SYSTEM STRAIN ANALYSIS DUE TO SETTLEMENT

7. SUMMARY AND CONCLUSIONS

REFERENCES

FIGURES

ATTACHMENTS



LIST OF FIGURES

Figure 1. Typical 2-Dimensional Stress Distribution.
Figure 2. Cover Elevations.
Figure 3. Subgrade Elevations.
Figure 4. Elastic Modulus Utilized for Settlement in Coarse-Grain Foundation Soils.
Figure 5. Variation of Unit Weight of Waste with Depth, from Kavazanjian (2000).
Figure 6. Average Unit Weight of Waste.
Figure 7. Vertical Load from Subgrade Fill.
Figure 8. Vertical Load from Waste.
Figure 9. Comparison of Load of Cross-Section at Northing 1354300 (ft).
Figure 10. 2-Dimensional Stress Distribution from Waste for Cross-Section at Northing: 1354300 (ft).
Figure 11. Total Settlement.
Figure 12. Comparison of Settlement of Cross-Section at Northing 1354300 (ft).
Figure 13. Comparison of Elevations of Cross-Section at Northing 1354300 (ft).
Figure 14. Subgrade Elevations: Post-Settlement.
Figure 15. Central Difference Approximation of Slope, from Dunn (1980).
Figure 16. Gradients Within a Plane Tangent to an Arbitrary Surface.
Figure 17. Maximum Grade (Only Cell Floors are Shown): Post-Settlement.
Figure 18. Plane Strain Condition, from Higdon (1985).
Figure 19. Major Principal Strain (Largest Normal Tensile Strain): Post-Settlement.
Figure 20. Comparison of Normal Strain of Cross-Section at Northing 1354300 (ft).

1. INTRODUCTION

1.1 Project Description

The Oak Hammock Disposal (OHD) landfill is a 264-acre facility with a planned height of 98 feet above current ground elevations. A double-composite liner system will be used for leachate containment. Collection and removal of leachate from the liner system depends on adequate slope to drain. Landfill settlement in future years will effect the landfill liner system slope and its ability to continually remove leachate.

1.2 Purpose of Analysis

The purpose of the analysis presented in this calculation package is to evaluate the total settlements expected in the foundation soils below the proposed OHD landfill. Total settlement is the sum of time-independent elastic settlements in cohesionless soils plus time-dependent consolidation settlements in cohesive soils. Total foundation soil settlements are used to evaluate post settlement subgrade elevations and slopes, and strains in the liner system due to these settlements.

1.3 Method of Analysis

The footprint of the proposed OHD landfill was divided into a 50 ft by 50 ft grid for the settlement analysis. A one-dimensional settlement analysis was performed for each grid location, taking into consideration the height of overlying waste and subgrade fill at that location. Post settlement subgrade elevations and slopes and strain in the liner system were then computed using the settlements calculated at each grid point.

The settlement analysis was performed for the final configuration of the proposed OHD landfill, and an overall factor of safety of 1.5 was applied to the settlements calculated. The final configuration (i.e., waste deposited to the proposed 95 ft height) represents the critical condition for subgrade settlement and strains in the liner system. Time rate of settlement in cohesive soils was not calculated, as the total settlement represents the critical condition. Further, most of the settlement will take place in coarse-grained soils which occurs instantaneously, for all practical purposes, as the subgrade soils, liner system, waste and final cover system are placed.

Settlement of the underlying soil layers, consisting almost entirely of sands to silty sands, was calculated using one-dimensional compression. A one-dimensional analysis is a relevant simplification for this site considering that the compressible soils are

encountered to a maximum depth of approximately 300 ft, which is small when compared to the width of the landfill (approximately 1,500 to 3,500 ft, depending on location).

A two-dimensional stress distribution of a typical cross section of the landfill is shown in Figure 1 with depth and horizontal distances made dimensionless by being expressed as a percent of B ($^1/_2$ the landfill width). The figure represents an elastic solution for this load distribution from Polous and Davis (1974). Note the horizontal line drawn at an elevation of 30 percent B, which represents the typical depth of compressible soils at the proposed OHD facility. A two-dimensional settlement analysis was performed for a typical cross section of the landfill to estimate settlements outside the footprint of the landfill due to the loading imposed by the landfill.

The one-dimensional settlement analysis is exact, in terms of stress distribution, where the stress contours are vertically oriented in this region of compressible soils (as annotated in the figure). The one-dimensional settlement analysis is conservative with regards to settlement where the stress contours curve inward towards the center of this compressible zone, and unconservative where the stress contours curve outwards. This makes the post settlement subgrade slope conservative (i.e. slopes will be greater than predicted by one-dimensional analysis) at all locations affected by the landfill footprint. Also, the liner system strains predicted at the perimeter of the landfill footprint by the one-dimensional analysis will be conservative (i.e. predicted strains will be larger than experienced strains).

2. ANALYSIS PARAMETERS

2.1 Geometry

For settlement calculations, the elevation of the existing ground surface was assumed to be 80 ft (NGVD). The subgrade and final cover system elevations were interpolated at the 50 ft intervals (both in a North-South and East-West directions) from permit drawing Sheets 8 and 9 and Sheets 33 and 34 of 50. Break lines, points, and contours were taken into account during this interpolation to more accurately estimate elevations. This data was then electronically imported into a spreadsheet for calculation purposes. Figures 2 and 3 present the final cover and pre-settlement subgrade elevations, respectively. Attachments 1 and 2 present the data values from the spreadsheet solutions for the final cover and pre-settlement subgrade elevations, respectively.

2.2 Soil Properties

The compressible soil underlying the proposed OHD landfill was divided into three layers for settlement calculation purposes. These are the subgrade fill placed above existing ground surface, the Post Hawthorn Undifferentiated formation (to a depth of 155 ft), and the Hawthorn Group (from a depth of 155 ft to 300 ft). Note that the Post Hawthorn Undifferentiated formation will simply be referred to as the undifferentiated sand layer in this calculation package.

The undifferentiated sand layer consists of two distinct layers: a surficial silty sand to a depth of approximately 70 ft, and a shelly sand layer from a depth of approximately 70 ft to 155 ft. The Hawthorn Group consists of two distinct formations: the Peace River formation which approximately comprised the top 77 ft of the Hawthorn Group, and the Arcadia formation which approximately comprised the bottom 68 ft of the Hawthorn Group. The Ocala Group below these soil layers consists mostly of limestone and was considered incompressible. The geotechnical properties used for settlement calculations are summarized below and a more detailed discussion of the soil layers and the empirical correlations used to estimate their soil properties was presented in the calculation package entitled *Geotechnical Investigation Report.*

The parameter used for compression settlement calculations of the coarse-grained soils was the elastic modulus (E). The coarse-grained soils consisted of the subgrade fill, the undifferentiated sand layer, and the majority of the Hawthorn Group. A modified compression index ($C_{c\varepsilon}$) was used for the consolidation settlement of the cohesive soils of the Hawthorn Group. Figure 4 shows the elastic modulus (E) with depth that was used for settlement calculations of the coarse-grained portion of the compressible soils underlying the proposed OHD landfill. This figure is annotated to show the division between formations and the assumed cohesive sections of the Hawthorn Group.

The maximum shear modulus (G_{max}) for the subgrade fill was estimated by methods proposed by Seed and Idriss (1970), as shown in Equation 9 of the calculation package entitled *Geotechnical Investigation Report.* This was done at all grid locations using ½ the subgrade fill height at each location multiplied by a conservatively assumed unit weight for the soil (γ_{total}) of 120 pcf for computation of the vertical effective stress ($\sigma_v' = \sigma_1'$). The mean effective stress ($\sigma_m' = \left(\sigma_1' + \sigma_2' + \sigma_3'\right)/3$ where $\sigma_2' = \sigma_3' = K_o \cdot \sigma_1'$), was calculated using an assumed value of 0.5 for the lateral earth pressure coefficient (K_o). The maximum shear modulus (G_{max}) was calculated using a (K_{2max}) value of 70, as detailed in the calculation package entitled *Geotechnical Investigation Report.* The elastic modulus

(E) was then calculated according to Equation 8 of the calculation package entitled *Geotechnical Investigation Report*, which stated that an average G was assumed to be 1/3 of G_{max} using a Poisson ratio (ν) of 0.3.

The elastic modulus for the surfical sand layers of the undifferentiated sand layer (to a depth of approximately 70 ft) was obtained from Standard Penetration Testing (SPT) performed during the field investigation. Empirical correlations applied to the SPT values taken at 5 ft intervals yielded the modulus profile with depth. The shelly silty sand layer below the surfical sands (to a depth of approximately 155 ft.) was conservatively estimated to have a modulus of 1,500 ksf (constant with depth). The spreadsheet solution divided the sand layers (surfical and shelly silty sand deposits) into 16 layers for calculation purposes, the first 15 layers were 10 ft thick and the last layer was 5 ft thick.

The Peace River Formation (comprising the top 77 ft of the Hawthorn Group) was estimated to consist of approximately 10 percent cohesive soils by volume, and the Arcadia formation (comprising 68 ft of the Hawthorn group) was estimated to consist of approximately 5 percent cohesive soils by volume. The cohesive soils within these formations are located throughout the formation in relatively thin seams. For settlement calculation purposes, the cohesive soils of the Peace River and Arcadia formations were assumed to occur at mid-depth of their respective formation. The settlement calculations for the Peace River formation thus used the following simplified lithology: compression settlement of a coarse-grained soil layer (from a depth of 155.0 to 189.7 ft), time dependant consolidation settlement of the assumed cohesive soil layer (from a depth of 189.7 to 197.4 ft), and compression settlement of a coarse-grained soil layer (from a depth of 197.4 to 232.0 ft). Similarly, the settlement calculations for the Arcadia formation used the following simplified lithology: compression settlement of a coarse-grained soil layer (from a depth of 232.0 to 264.3 ft), time dependant consolidation settlement of the assumed cohesive soil layer (from a depth of 264.3 to 267.7 ft), and compression settlement of a coarse-grained soil layer (from a depth of 267.7 to 300.0 ft).

Compression settlement calculations for the coarse-grained portions of the Hawthorn Group used an elastic modulus (E) that was estimated to vary linearly with depth. The modulus was 2,200 ksf at a depth of 155 ft increasing to 3,020 ksf at a depth of 300 ft. Consolidation settlement calculations for the cohesive portions of the Hawthorn Group were made using a modified compression index ($C_{c\varepsilon}$) of 0.10. The selection of these parameters is discussed in detail in the calculation package entitled *Geotechnical Investigation.*

The ground water table was considered to be at the existing ground surface, and all soils within the undifferentiated sand layer and Hawthorn Group were considered to be fully saturated. A unit weight of 120 pcf was conservatively used as a total unit weight for the subgrade fill (typical of compacted medium to fine silica sand that is representative of the borrow material). The subgrade material will be taken mostly from the borrow areas on site consisting of the surfical sand layers. Average total unit weights of 115 pcf were assumed for the undifferentiated sand layers and the Hawthorn Group, as detailed in the calculation package entitled *Geotechnical Investigation Report.*

2.3 Waste Properties

Variation of the unit weight of municipal solid waste with depth was studied by Kavazanjian, et al. (2000), and is presented in Figure 5. This study presented the in-situ unit weight "as-placed", to include typical initial cover material/soil incorporated into the waste. Two linear approximations are made to represent this curve: (i) from depth of 0 ft to 131 ft, and (ii) for depths greater than 131 ft. For settlement analysis, a constant waste density of 81.5 pcf was used below a depth of 131 ft. At depths above 131 ft the density was considered to vary linearly from, 42.7 to 81.5 pcf, according to the relationship shown below as Equation 1.

$$\gamma_{waste} = 42.7 + 0.30 \cdot (z) \qquad \text{(Equation 1)}$$

Where: γ_{waste} = unit weight of waste (pcf)
z = depth (ft)

3. VERTICAL STRESS INCREASE

The height of the subgrade fill and the depth of waste at each grid point in a 50 ft by 50 ft pattern were calculated using a spreadsheet. The height of the subgrade fill, at any grid location, is the original grade elevation assumed (80 ft NGVD 1929) subtracted from the subgrade elevation at that location. The depth of waste is obtained by subtracting the subgrade elevation from the final cover elevation.

The average unit weight of the waste was calculated at each grid point by integrating the unit weight with depth relationship (Equation 1) to the maximum depth of waste at that location. Figure 6 shows the average unit weight of waste (including initial cover) at all the grid points within the mesh.

The vertical stress due to the placement of the subgrade fill is the unit weight of the fill (120 pcf) multiplied by the depth of subgrade fill at a given location, and is shown in Figure 7. The vertical stress increase due to the placement of waste is the average unit weight of the waste (as shown previously) multiplied by the depth of the waste at a given location, and is shown in Figure 8. Attachments 3 and 4 present the data values from the spreadsheet solutions for the vertical load from the subgrade fill and the waste, respectively. Note that a manual calculation has been performed for each of the cited attachments at location Northing 1355000 ft and Easting 624400ft.

One-dimensional settlement analyses differ from two-dimensional analyses in the way that the stress increases at the surface of the foundation soil are attenuated through the compressible soil layers. The one-dimensional analysis models the stress increase to be constant with depth at any location of the landfill in plan view. The two-dimensional analysis utilizes an elastic solution for stress distribution to model the attenuation of stress increase throughout the compressible soil layers. Figure 9 presents the load distribution for a typical cross section (located at Northing 1354300 ft) due to the placement of general fill for the subgrade and the waste for both the one-dimensional and two-dimensional analysis. Note that the one-dimensional analysis can accommodate an actual load distribution that may vary widely, while due to the limited number of analytical solutions available, the two-dimensional analysis must approximate the actual load distribution with some regular distribution . Figure 10 shows this approximated waste load distribution for the two-dimensional analysis attenuated through the compressible foundation soil layers.

The compression settlement of the subgrade fill and the coarse-grained foundation soils (the undifferentiated sand layer and most of the Hawthorn Group) occur nearly instantaneously during placement of the subgrade fill, and thus the compression settlement due to the increase in vertical stress from the subgrade fill occurs before the liner system or waste is placed into the landfill. Consequently, only the vertical stress increase due to the placement of waste was used for calculation of the compression settlement of the subgrade fill and the coarse-grained foundation soils.

The consolidation settlement of the cohesive layers within the Hawthorn Group may experience a time lag between consolidation settlement and placement of the subgrade fill. Thus, the vertical stress increases imparted by the addition of the subgrade fill and the waste were used for the consolidation settlement of the cohesive foundation soils.

4. SETTLEMENT

The settlement of the subgrade due to the placement of waste for each grid point was calculated using Equation 2.

$$S_{sub-grade} = H_o \frac{\Delta\sigma_{vertical}}{E} SF \qquad \text{(Equation 2)}$$

Where: $S_{sub-grade}$ = total settlement in the subgrade fill (ft)
H_o = initial thickness (ft)
E = Elastic modulus at the midpoint (ft.)
$\Delta\sigma_{vertical}$ = increase in vertical stress due to waste (psf)
SF = safety factor = 1.5

The settlement of the undifferentiated sand layer due to the placement of waste for each grid point was calculated using Equation 3 as stated below. Note that the 155 ft deep undifferentiated sand layer was divided into 16 increments; 15 layers 10 ft thick, and 1 layer 5 ft thick.

$$S_{undiff.sand} = \sum_{i=1}^{16} H_{o,i} \frac{\Delta\sigma_{vertical}}{E_i} SF \qquad \text{(Equation 3)}$$

Where: $S_{undiff.sand}$ = total settlement in the undifferentiated sand layer (ft)
$H_{o,i}$ = initial thickness of the ith layer (ft.)
E_i = Elastic modulus at the midpoint of the ith layer (ft.)
$\Delta\sigma_{vertical}$ = increase in vertical stress due to waste (psf)
SF = safety factor = 1.5

The total settlement of the Hawthorn Group for each grid point was calculated by adding the compression settlements in the coarse-grained soils due to the placement of waste to the consolidation settlements of the cohesive soils due to the placement of subgrade fill and waste.

The compression settlements of the coarse-grained soils of the Hawthorn Group were calculated using Equation 3, shown previously. Note that the formation was broken up into 4 coarse-grained soil layers (2 in the Peace River formation and two in the Arcadia

formation), as was detailed in Section 2.2 of this calculation package. The increase in vertical stress was due to the waste, and a safety factor of 1.5 was applied to these calculations as well.

The consolidation settlement of the two cohesive soil layers of the Hawthorn group (1 in the Peace River formation and 1 in the Arcadia formation) were both calculated using Equation 4 at each grid point. Note that the vertical stress increase is the result of the subgrade fill and the waste.

$$S_{Hawthorn\ ,Cohesive} = H_o \cdot C_{c\varepsilon} \cdot \log\left[\frac{\sigma'_{vertical\ ,initial} + \Delta\sigma_{vertical}}{\sigma'_{vertical\ ,initial}}\right] \cdot SF \qquad \text{Equation 4}$$

Where:
- $S_{Hawthorn\ ,Cohesive}$ = settlement in the cohesive Hawthorn layer (ft)
- H_o = initial thickness of the ith layer (ft.)
- $C_{c\varepsilon}$ = modified compression index
- $\sigma'_{vertical\ ,initial}$ = initial effective vertical stress at the midpont of the cohesive Hawthorn layer (psf)
- $\Delta\sigma_{vertical}$ = increase in vertical stress due to subgrade fill and waste (psf)
- SF = safety factor = 1.5

The total settlement at each grid location is obtained by adding the settlements for the subgrade, the undifferentiated sand layers, and the Hawthorn Group at that location. Figure 11 presents the total settlement for each grid point used in the analysis, based on the one-dimensional settlement analysis. Attachment 5 presents the data values from the spreadsheet solution for the total settlement. Note that a manual calculation has been performed for total settlement at location Northing 1355000 ft and Easting 624400 ft.

A two-dimensional settlement analysis was performed at a typical cross section of the landfill to assess this influence of the one-dimensional analysis on settlement calculations. This cross section was in an East-West direction and was located at Northing 1354300 ft, as was annotated in Figure 11. Equations 2 through 4, previously presented for one-dimensional settlement analysis, were all utilized as shown with the only exception that the change in stress ($\Delta\sigma_{vertical}$) was obtained from the two-dimensional elastic solution, Poulus and Davis (1974). The settlement profile and the post-settlement subgrade

elevation obtained along this cross section, for both the one-dimensional and two-dimensional analysis, are presented in Figures 12 and 13, respectively. The one-dimensional analysis indicates larger settlements compared to the two-dimensional analysis for most of the landfill, with the exception that the one-dimensional analysis shows slightly less settlement near the perimeter of the landfill (see the area for settlements less than approximately 0.1 ft). Note that this makes the one-dimensional analysis conservative in regards to both subgrade slope change (i.e. "flattening out" of the cell floors) and liner system strain for all areas of the landfill.

5. POST-SETTLEMENT SUBGRADE ELEVATIONS AND SLOPES

The post-settlement subgrade elevation at any grid point was obtained by adding the settlement (expressed as a negative number) to the pre-settlement elevation at that point. Figure 14 shows the post-settlement subgrade elevations. Attachment 6 presents the data values from the spreadsheet solution for the post-settlement subgrade elevations. Note that a manual calculation has been performed for the post-settlement subgrade elevation at location Northing 1355000 ft and Easting 624400 ft.

The post settlement subgrade slopes were computed at the grid points in both the North-South and East-West directions using a central difference technique. Figure 15 is taken from Dunn, et al. (1980), and is used to illustrate this numerical approximation of slope given the elevations at discrete points where Δx is the 50 ft horizontal increment in either the North-South or East West directions and $y = f(x)$ is the elevation of the subgrade fill surface. Note that Northerly and Easterly are defined as the positive (+) for the orthogonal compass directions. Thus, positive (+) or negative (-) values of slope indicate that the elevation is increasing or decreasing, respectively, as you change positions in plan view in the defined positive (+) direction.

The maximum slope at any grid point is obtained as the vector sum of the grades calculated in the North-South and East-West directions, as these vectors lie within a plane tangent to the subgrade surface at that grid point. This is illustrated in Figure 16 showing that the North-South and East-West gradients are projections of the maximum grade onto these two respective orthogonal axis. As the North-South and East-West grades are orthogonal, the vector sum (maximum grade) can be obtained using the Pythagorean theorem, shown in Equation 5. The maximum slope of the post settlement subgrade is presented as Figure 17; note that only slopes within the range of 0 to 2.2 percent are presented as slopes greater than this are non-critical. Attachment 7 presents the data values from the spreadsheet solution for maximum post-settlement subgrade slope. Note that a

manual calculation has been performed for the maximum slope at location Northing 1355000 ft and Easting 624400 ft.

$$M_{max} = \sqrt{M_{North-South}^{2} + M_{East-West}^{2}} \qquad \text{(Equation 5)}$$

Where: M = slope (expressed as percent)

When the slope in the two orthogonal directions is squared in the above equation, sign convention is lost (+ or – slope), and only the magnitude of the maximum slope is obtained (i.e., the absolute value). If the direction (heading) of the maximum downward slope were to be calculated it would simply be as stated in Equation 6 (note that this would also establish the northerly axis as heading = 0°).

$$Heading = \tan^{-1}(M_{North-South} / M_{East-West}) \qquad \text{(Equation 6)}$$

Where: *Heading* = compass direction for the line of action of the maximum gradient

M = slope

The above equation is an odd function that will only return values of heading in the range of +90° (due east) to –90° (due west). Boolean Logic applied to the sign of both orthogonal vectors would determine which quadrant of the full 360° compass directions the maximum downward slope acts (i.e., the equation above identifies the line of action for the maximum gradient, and Boolean logic shows which of the two possibilities is down gradient from the localized coordinate system). The best way to illustrate maximum gradient directions is to refer back to the post-settlement subgrade, Figure 14, and recognize that the maximum grade is always perpendicular to the elevation contour at any given point.

6. LINER SYSTEM STRAIN DUE TO SETTLEMENT

The liner system is placed over the subgrade fill prior to the placement of waste. As settlement occurs in the subgrade fill and the foundation soil due to the placement of the waste, the liner system undergoes strain. The amount of liner system strain is calculated using results from the 1-dimensional settlement calculations.

The 1-dimesional settlement analysis for computing liner system strains is conservative in that the liner system is constrained to remain fixed at the landfill perimeter due to the 1-dimensional settlement model predicting zero settlement at the perimeter. This results in strains being over estimated at the perimeter of the landfill since the perimeter actually undergoes some settlement.

The liner system was assumed to remain fixed relative to the subgrade soil undergoing settlement. If the liner system were to slip relative to the subgrade soil during settlement, localized areas of high strain would be relieved causing lower strain.

In this strain analysis, it was assumed that the liner system (analyzed in 50 ft by 50 ft sections) will experience plain strain. This means that the normal strain and the shear strains on the top and bottom of the liner system are all zero. Thus the generalized 3-dimensional state of strain is simplified to a 2-dimensional model. This is appropriate for the liner system as the liner system thickness is small compared to the dimensions in plane with the liner system surface.

In order to fully define the state of strain of the liner system at any given point, three quantities were calculated numerically: the normal strain in the North-South direction, the normal strain in the East-West direction, and the shear strain along the edges of the plane strain element. Figure 18, taken from Higdon, et al. (1985), illustrates a plane strain element. Note that dimensions in the figure and in the derivations from Higdon, et al. (1985) are on a differential scale, while the numerical approximations used in this analysis are finite. Therefore, the dimensions in the figure and derivations from Higdon, et al. (1985) have orthogonal planar axis of "X" and "Y" corresponding to the "North" and "East" axis, respectively, for this analysis (defined herein as positive in the compass directions cited).

The normal strains (in a direction along either the North-South or East-West axis) were obtained using the discrete definition of normal strain (normal strain is simply the change in length, divided by the original length), and a central differencing technique to obtain the pre-settlement and post-settlement element lengths (the change in length is the difference of these two. Note that differences in elevation were accounted for (both pre-settlement and post-settlement) when calculating the element length.

Whereas the normal strains represent the change in a planar elements length in a given direction, the shear strain represents the distortion of the element. In order to compute the shear strain, the normal strain along the diagonal of the element must first be computed, line OB' as shown previously in Figure 18. Similar to the previous discussion of normal

strains along the defined North and East axis, the normal strain along the diagonal of the planar element was approximated numerically with a central difference calculation.

Shear strain was calculated using the plain strain relationship shown as Equation 7. by applying the law of cosines to triangle OC'B', shown in Figure 18. This is expressed on a differential scale, as was derived in Higdon, et al. (1985), and was utilized on a finite scale by replacing the differential terms (dx, dy, and dn) with finite lengths (L_{north}, L_{east}, and $L_{diagonal}$) of the liner system sections analyzed, and relating "X" to the North axis and "Y" to the East axis.

(Equation 7)

$$[(1+\varepsilon_n)dn]^2 = [(1+\varepsilon_x)dx]^2 + [(1+\varepsilon_y)dy]^2 - 2[(1+\varepsilon_x)dx][(1+\varepsilon_y)dy][-\sin\gamma_{xy}]$$

Where:
- ε_x = normal strain in the x (North) direction
- ε_y = normal strain in the y (East) direction
- ε_n = normal strain in the diagonal direction
- γ_{xy} = shear strain along an edge of the element
- dx = element length in the x (North) direction
- dy = element length in the y (East) direction
- dn = element length in diagonal direction

The principal strains were calculated using Equation 8, as are illustrated in the Mohr's strain space in Figure 18. The major and minor principle strains are the largest normal strains in the element in the tension (+) and compression (-) directions. The major principal strains calculated are shown in Figure 19. Attachment 8 presents the data values from the spreadsheet solution for major principal strain. Note that a manual calculation has been performed for the major principal strain at location Northing 1355000 ft and Easting 624400 ft.

$$\varepsilon_{p1}, \varepsilon_{p2} = \frac{\varepsilon_x + \varepsilon_y}{2} \pm \sqrt{\left(\frac{\varepsilon_x - \varepsilon_y}{2}\right)^2 + \left(\frac{\gamma_{xy}}{2}\right)^2} \qquad \text{Equation 8}$$

Where: ε_{p1} = major principal strain

ε_{p2} = minor principal strain

ε_x = normal strain in the x (North) direction

ε_y = normal strain in the y (East) direction

γ_{xy} = shear strain along an edge of the element

A two-dimensional settlement analysis was performed at a typical cross section of the landfill to assess the influence of the one-dimensional analysis on settlement calculations. This cross section was in an East-West direction and was located at Northing 1354300 ft, as was annotated in Figure 11 presented previously. The two-dimensional analysis allows for computation of normal strain in the East-West direction only, shear strains and principal strains can not be assessed. Comparison of normal strains in the East-West direction, obtained along this cross section, for both the one-dimensional and two-dimensional analysis, is presented in Figure 20. The one-dimensional analysis is conservative compared to the two-dimensional analysis with respect to strain for most of the landfill, with the exception of areas near the location where the idealized two-dimensional load profile exceeds that in the one-dimensional analysis. As shown in the figure tension strains are overestimated and compression strains are underestimated by the one-dimensional analysis.

7. SUMMARY AND CONCLUSIONS

Settlements were calculated for the final configuration of the Proposed OHD facility (i.e., waste deposited to the proposed height of 95 ft), with a factor of safety of 1.5 applied to the settlements. These calculations were made at 50 ft grid intervals across the entire site with a one-dimensional model; comparisons were made to a two-dimensional model at a typical cross section of the landfill to illustrate the conservatism of the one-dimensional analysis on settlement calculations.

The maximum settlement obtained within the landfill was calculated to be approximately 2.1 ft of total settlement. The post settlement grade within the landfill cells was calculated to generally be 1.8 to 2.0 percent. Some of the cells had slopes reduce to as low as 1.5 percent at locations near the perimeter of the landfill. The major principal strain (largest tensile normal strain) in the liner system was calculated to be less than 2.0 percent in magnitude and was largest near the perimeter berm. The major principal strain

calculated within the region of the landfill cells (i.e., the areas away from the perimeter berm) was less than 0.4 percent in magnitude.

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Dunn, I. S., Anderson, L. R., Kiefer, F.W. (1980). *Fundamentals of Geotechnical Analysis*. Wiley, New York.

Higdon, A., Ohlsen, E., Stiles, W. B., Weese, J. A., Riley, W. F. (1985). *Mechanics of Materials*, 4th Edition. Wiley, New York.

Kavazanjian, E., Matasovic, N., Bonaparte, R., and Schmertmann, G. R. (2000). "Evaluation of MSW Properties for Seismic Analysis", *Geoenvironment 2000*, American Society of Civil Engineers, Geotechnical Special Publication No. 46, pp. 1126-1141.

Poulos, H.G., and Davis, E.H. (1974). Elastic Solutions for Soil and Rock Mechanics. John Wiley and Sons, Inc., Sydney.

18/104

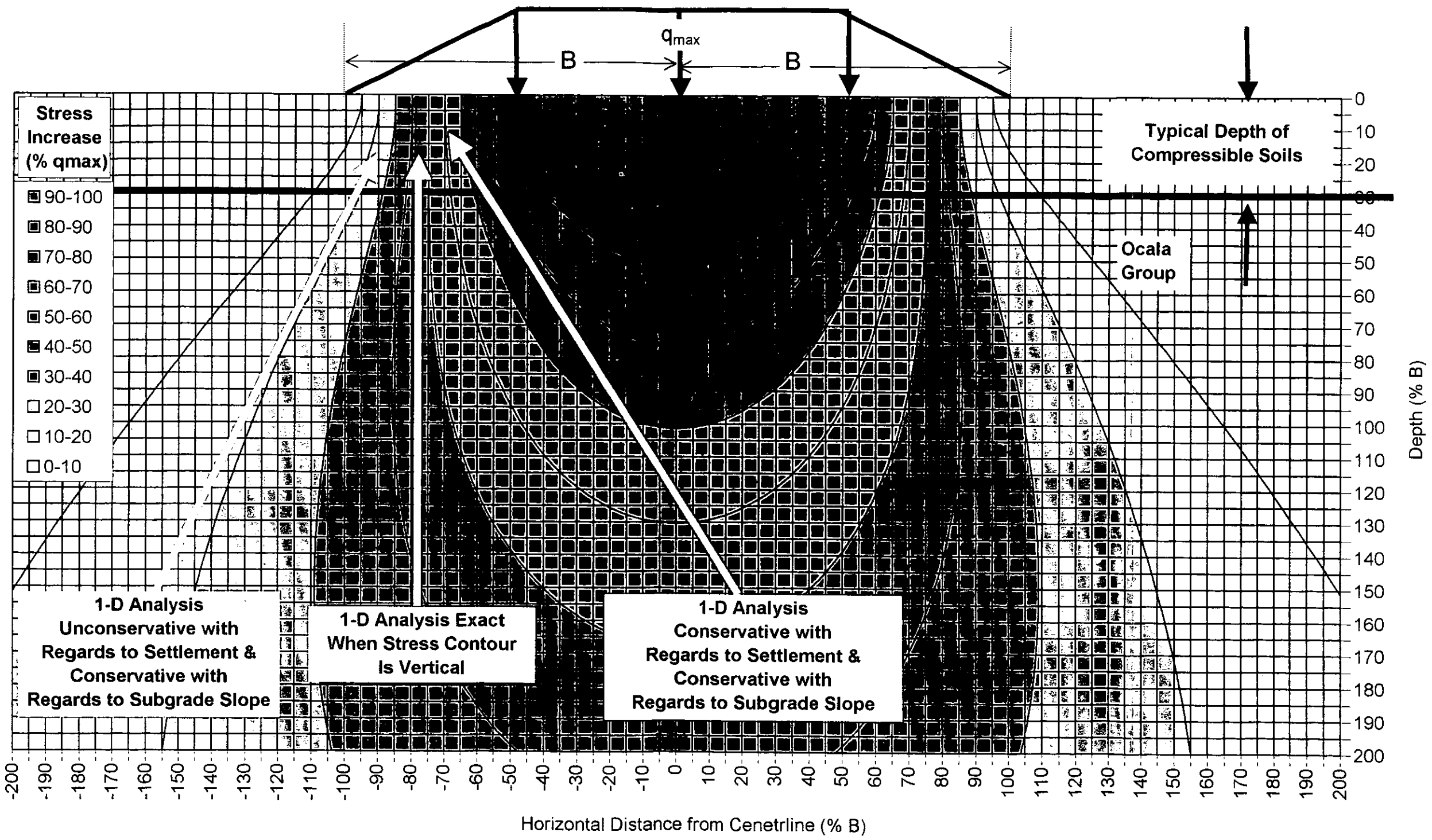

Figure 1. Typical 2-Dimensional Stress Distribution.

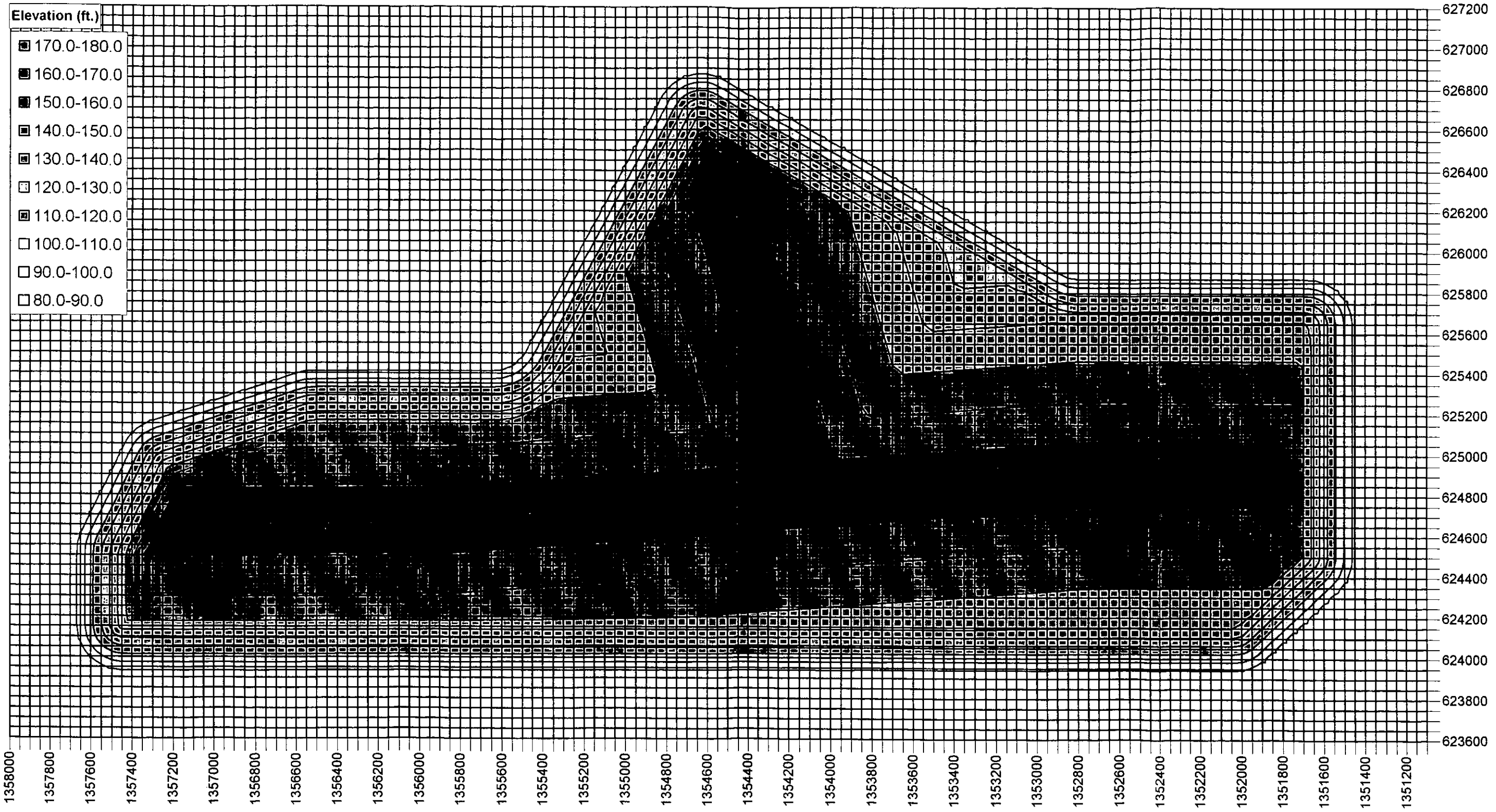

Figure 2. Cover Elevations.

20/124

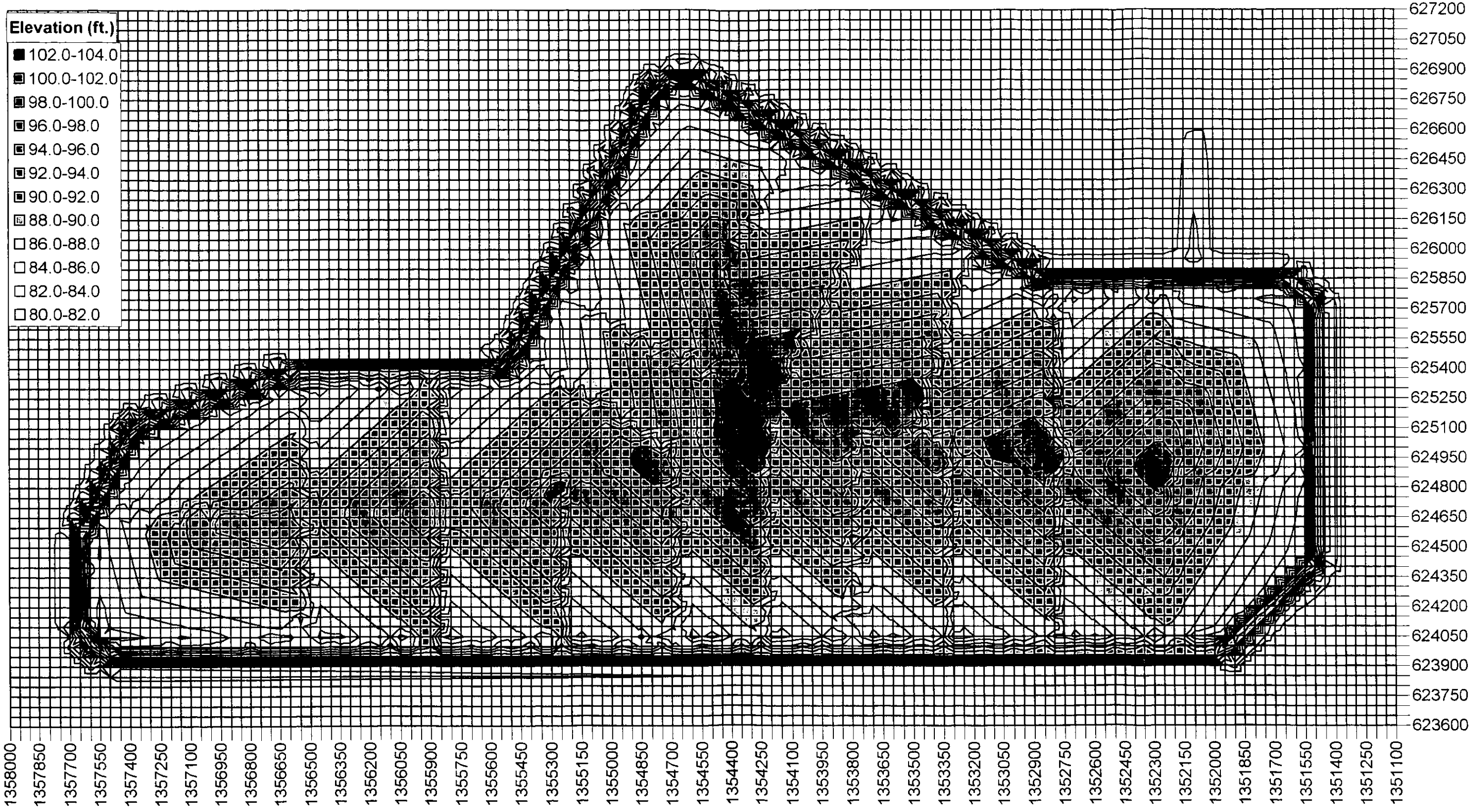

Figure 3. Sub-Grade Elevations: Pre-Settlement.

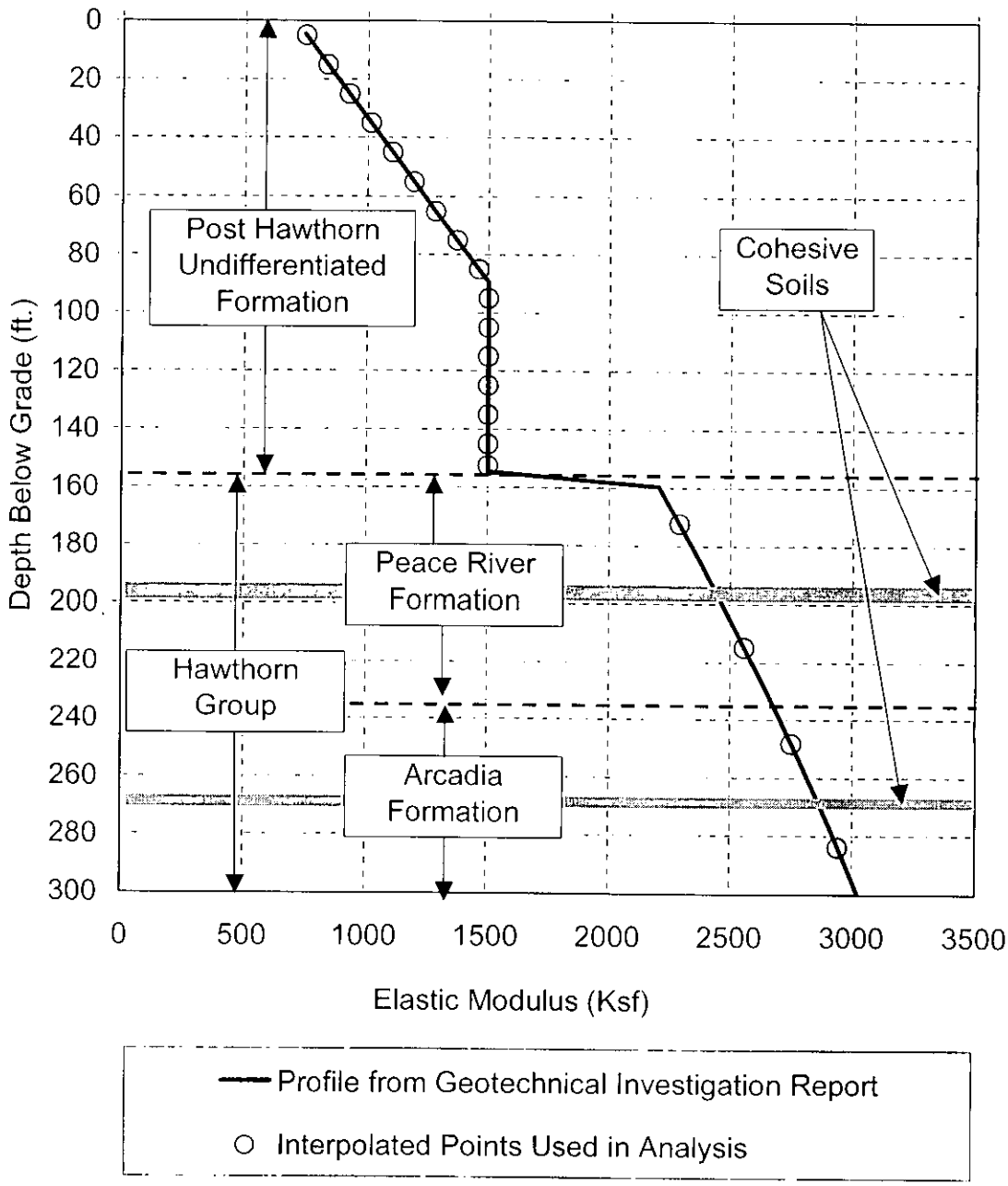

Figure 4. Elastic Modulus Utilized for Settlement in Coarse-Grained Foundation Soils.

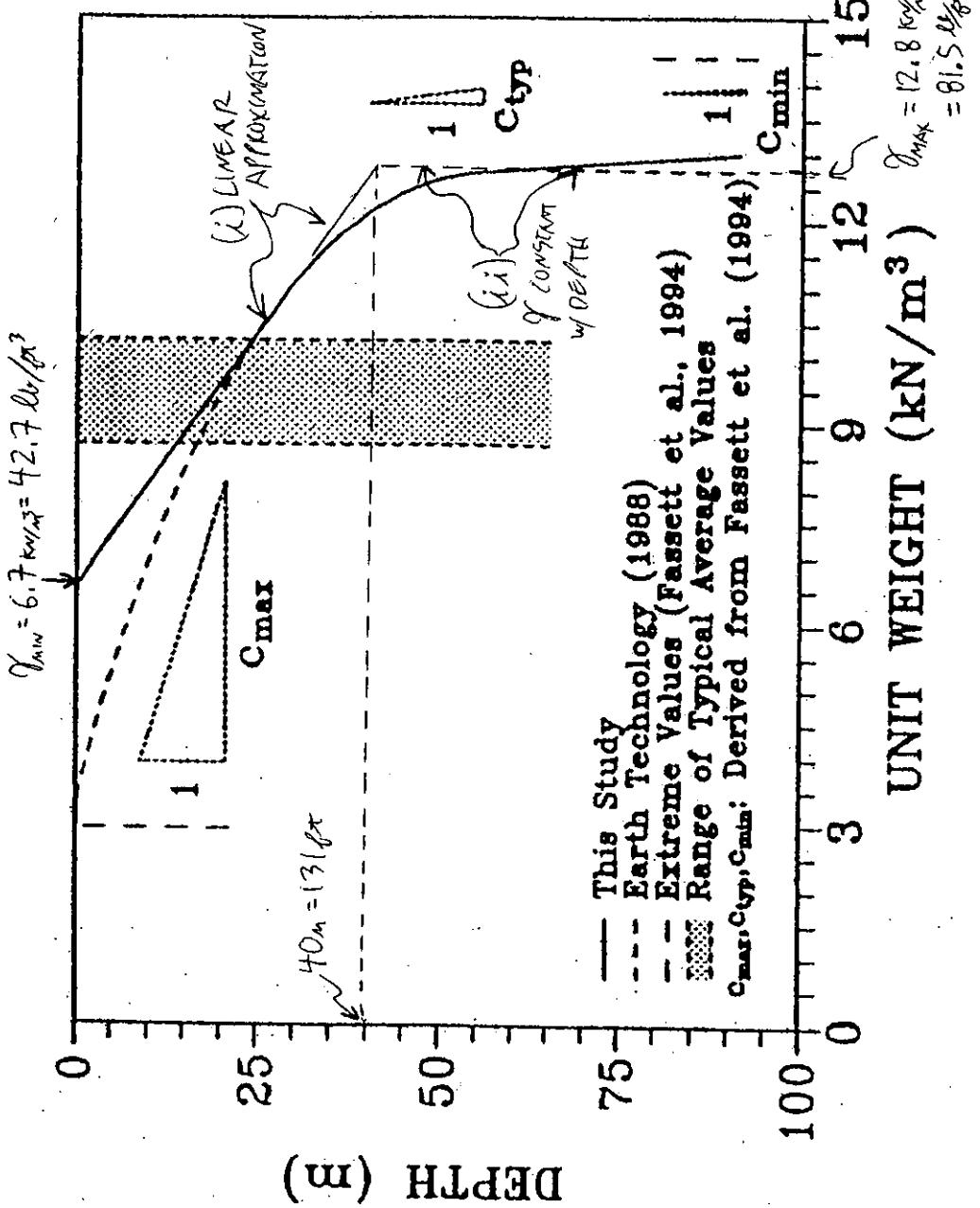

Figure 5. Variation of Unit Weight of Waste with Depth, from Kavazanjian (2000).

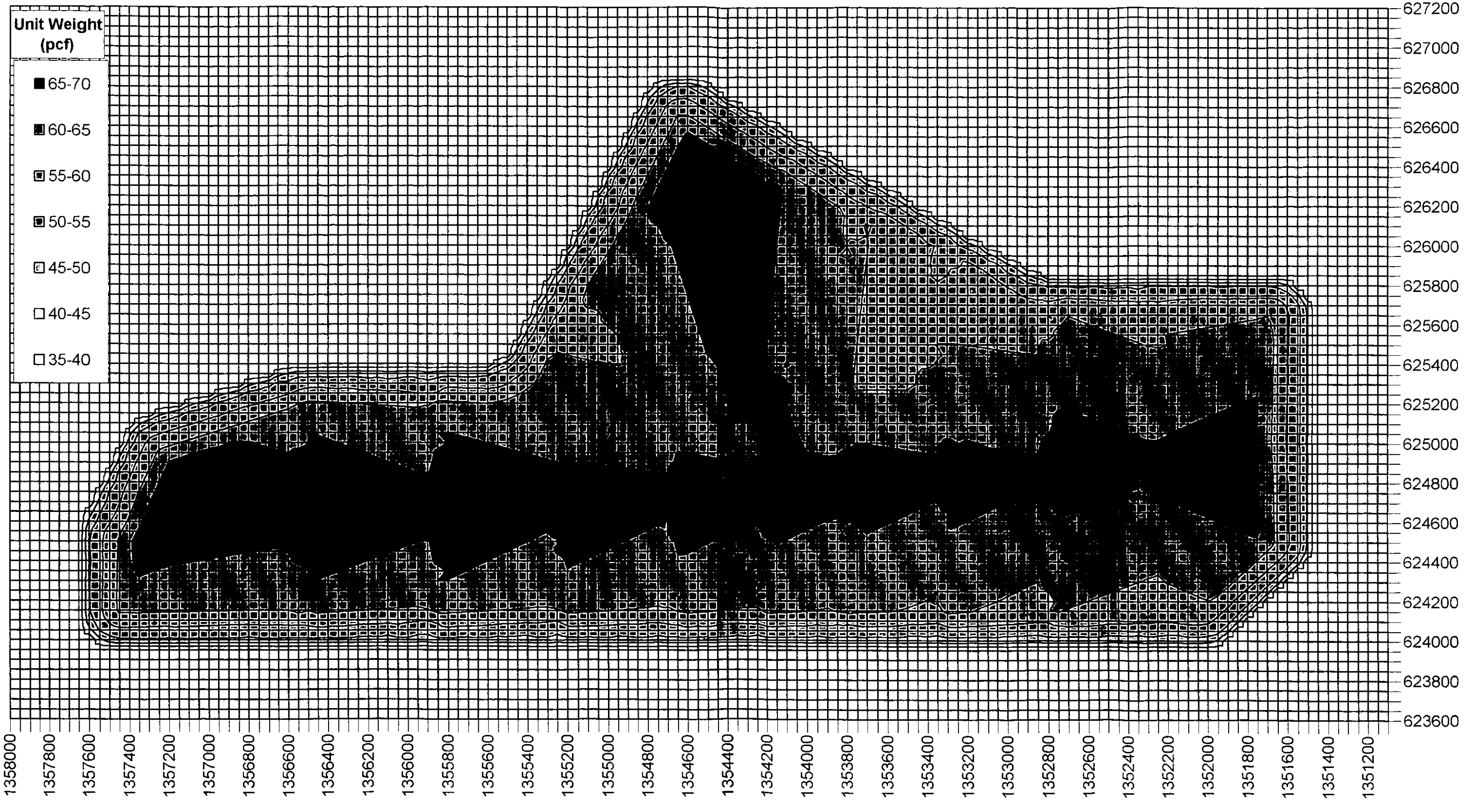

Figure 6. Average Unit Weight of Waste.

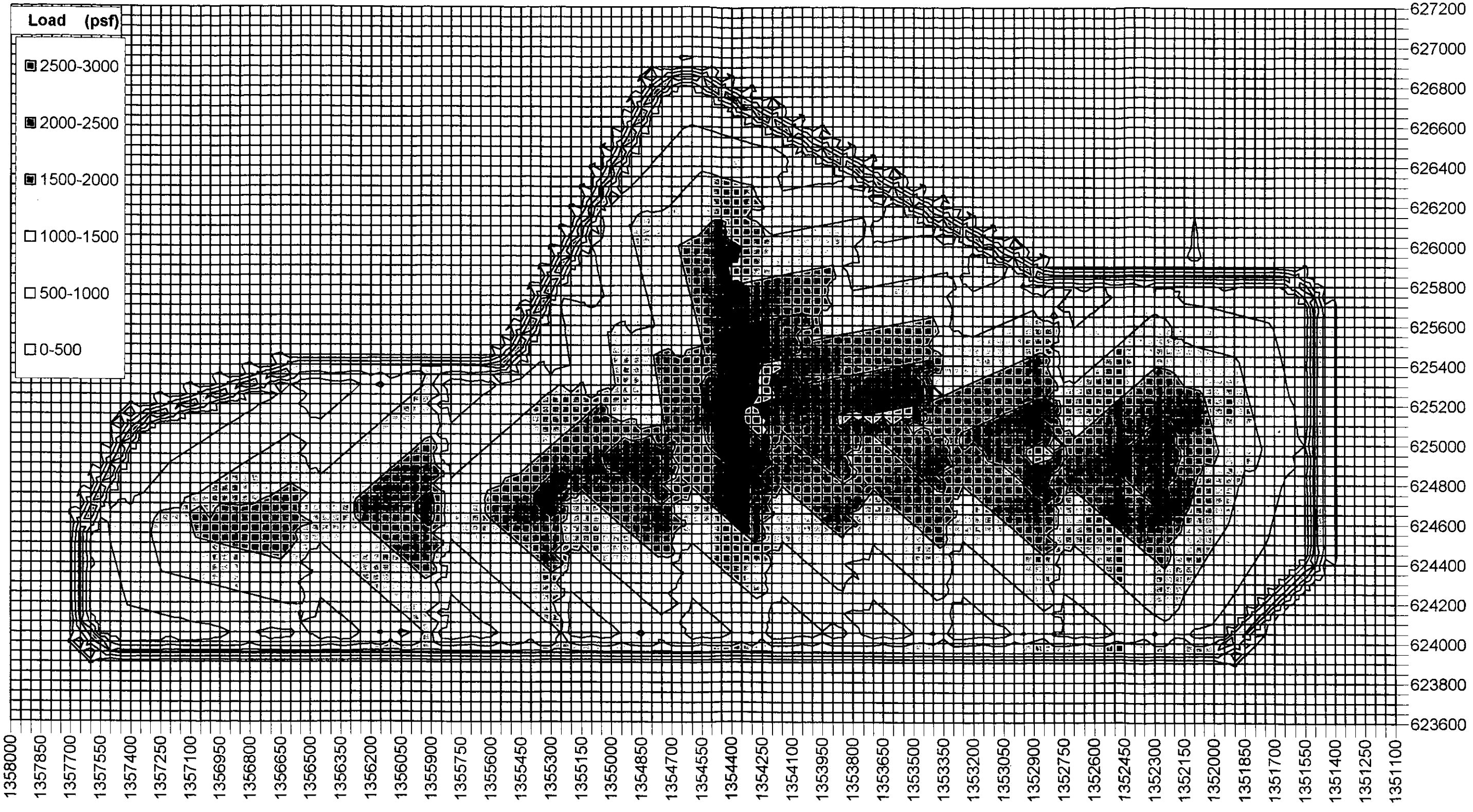

Figure 7. Vertical Load from Subgrade Fill.

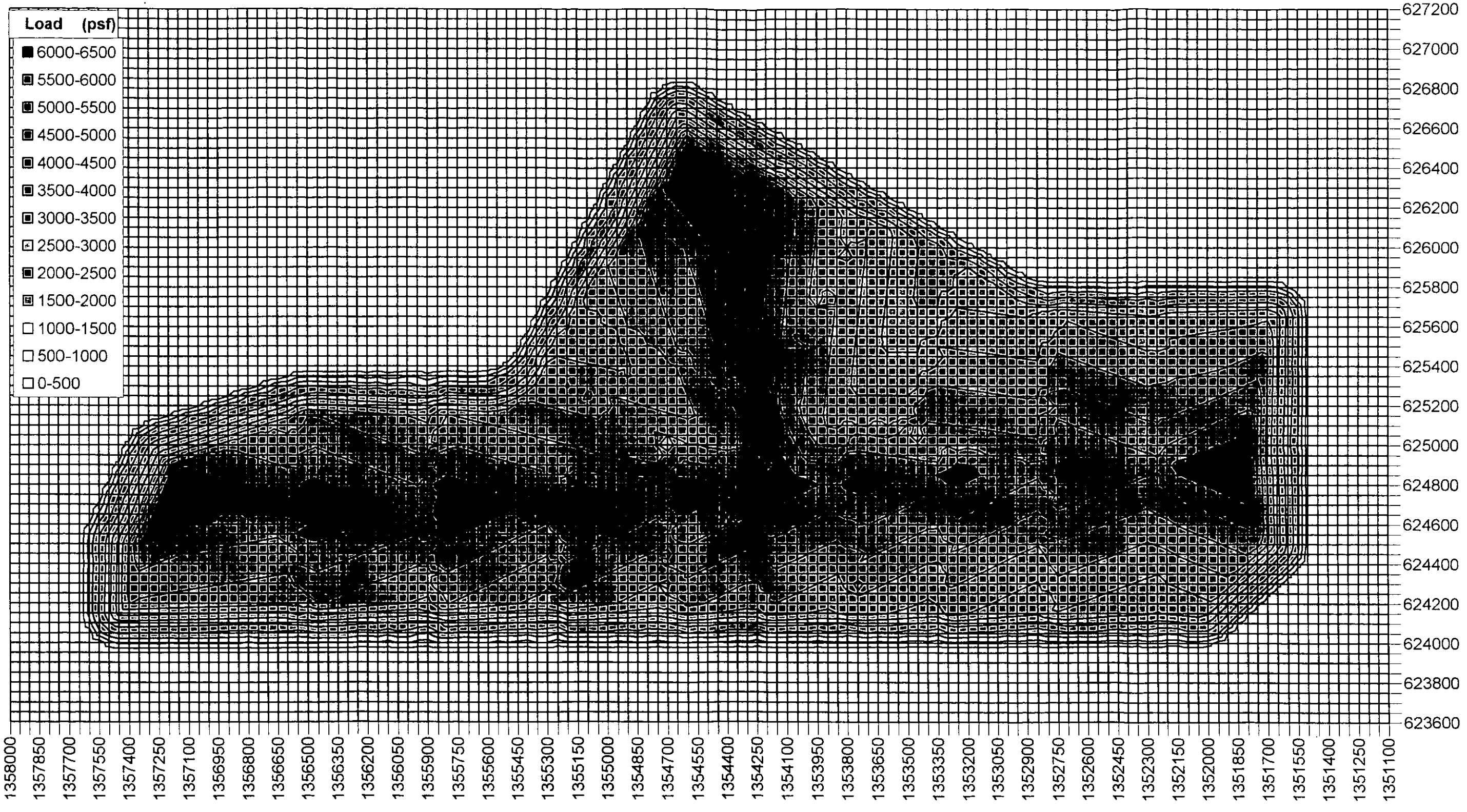

Figure 8. Vertical Load from Waste.

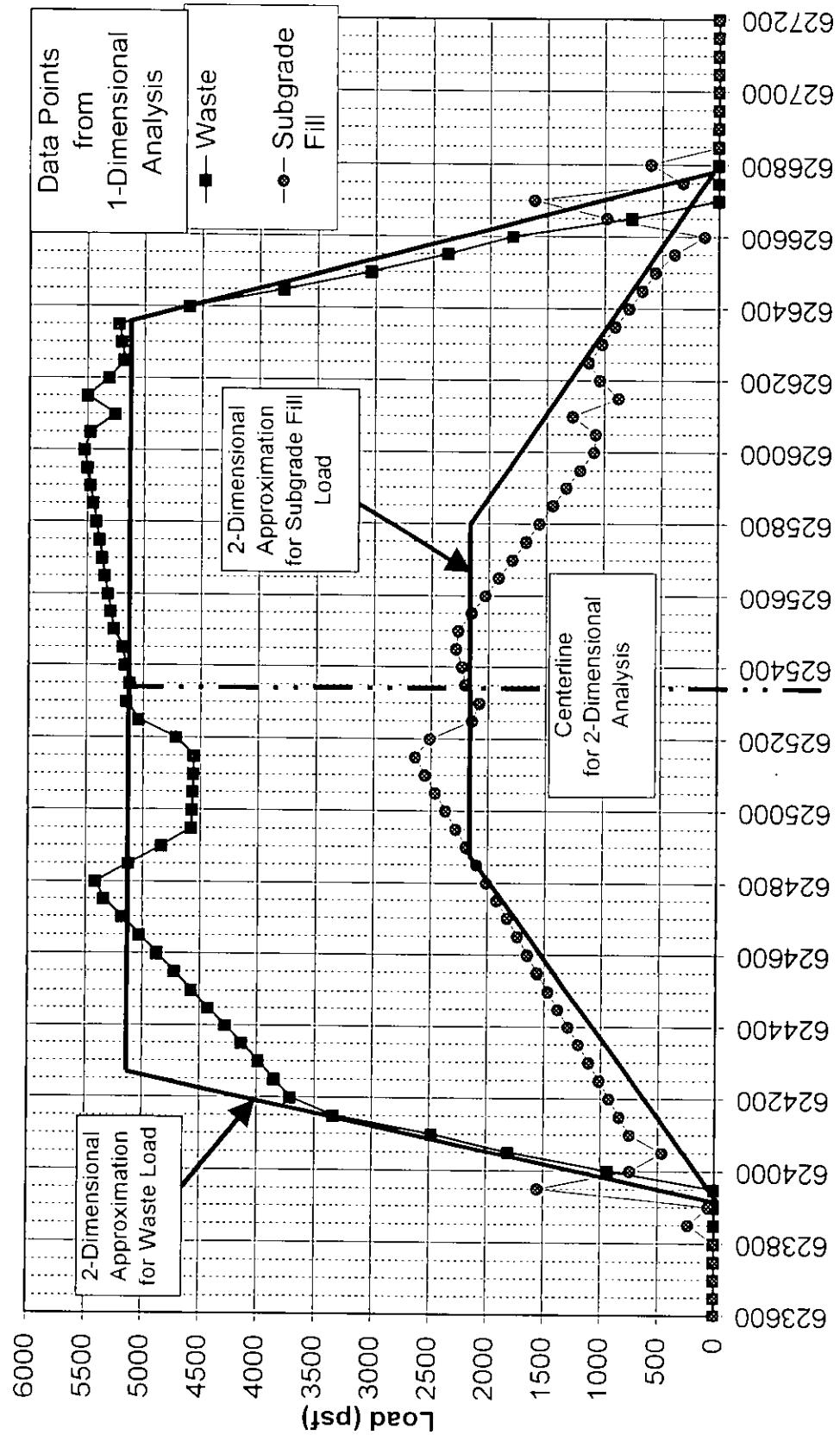

Figure 9. Comparison of Load for Cross-Section at Northing 1354300 (ft).

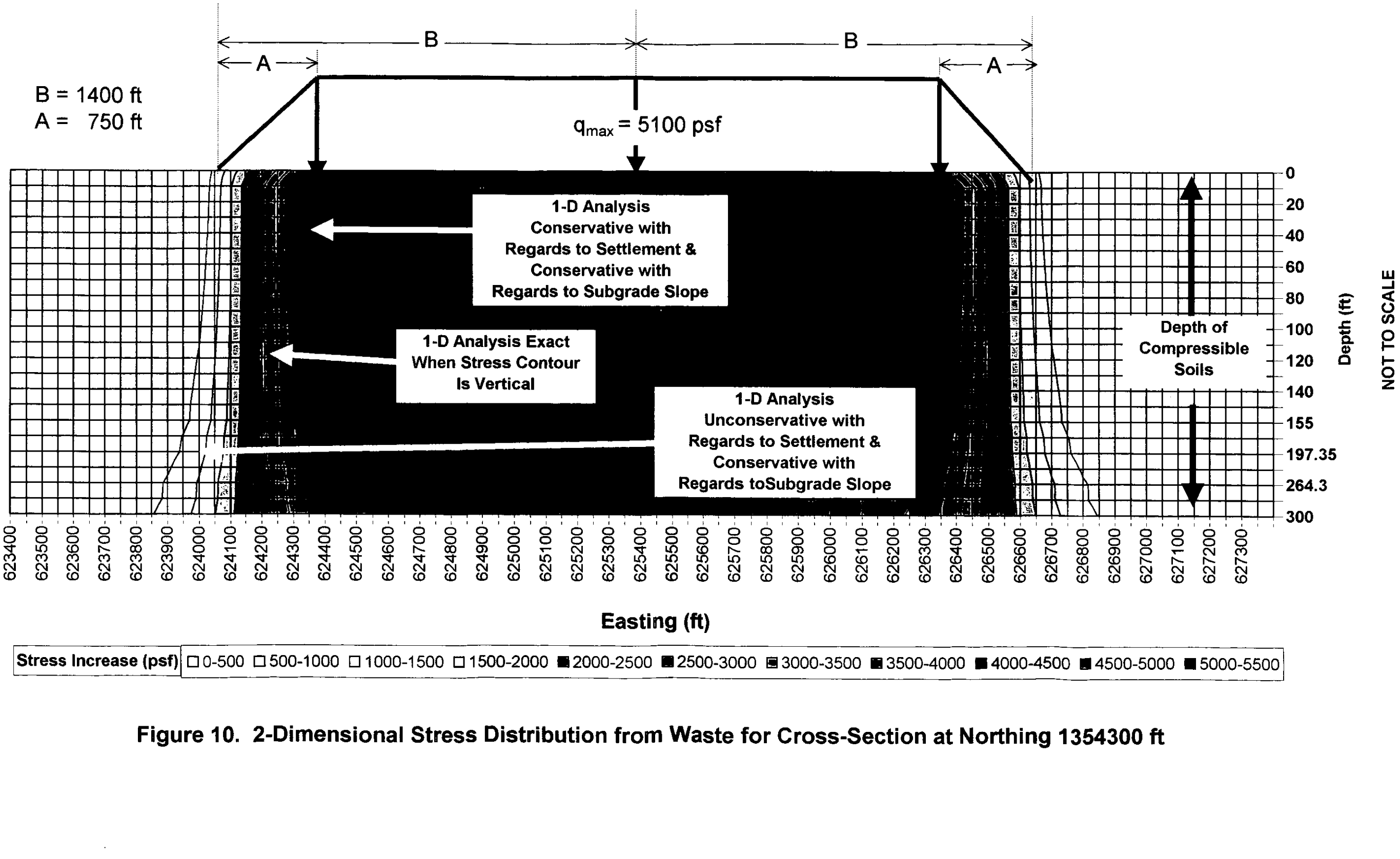

Figure 10. 2-Dimensional Stress Distribution from Waste for Cross-Section at Northing 1354300 ft

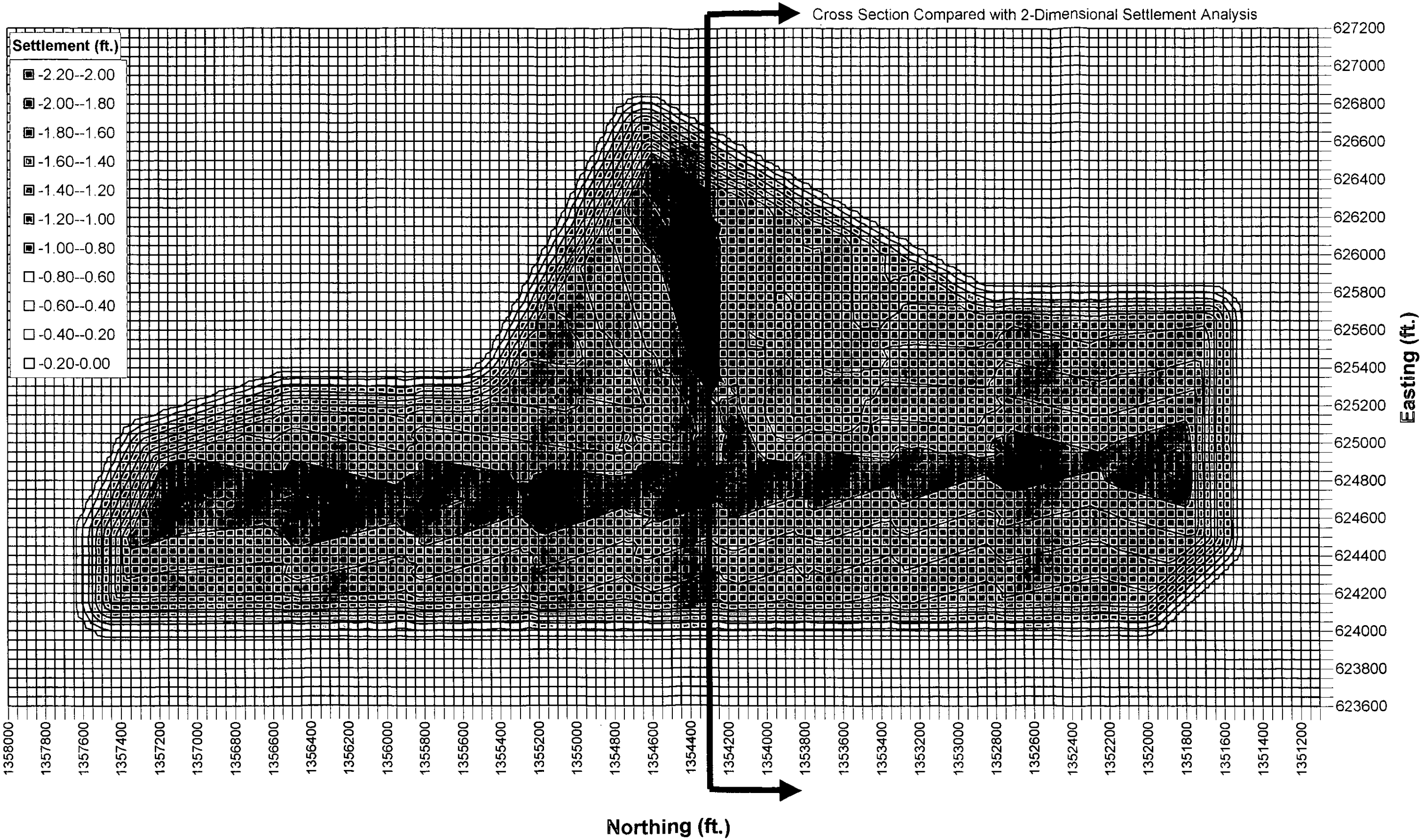

Figure 11. Total Settlement.

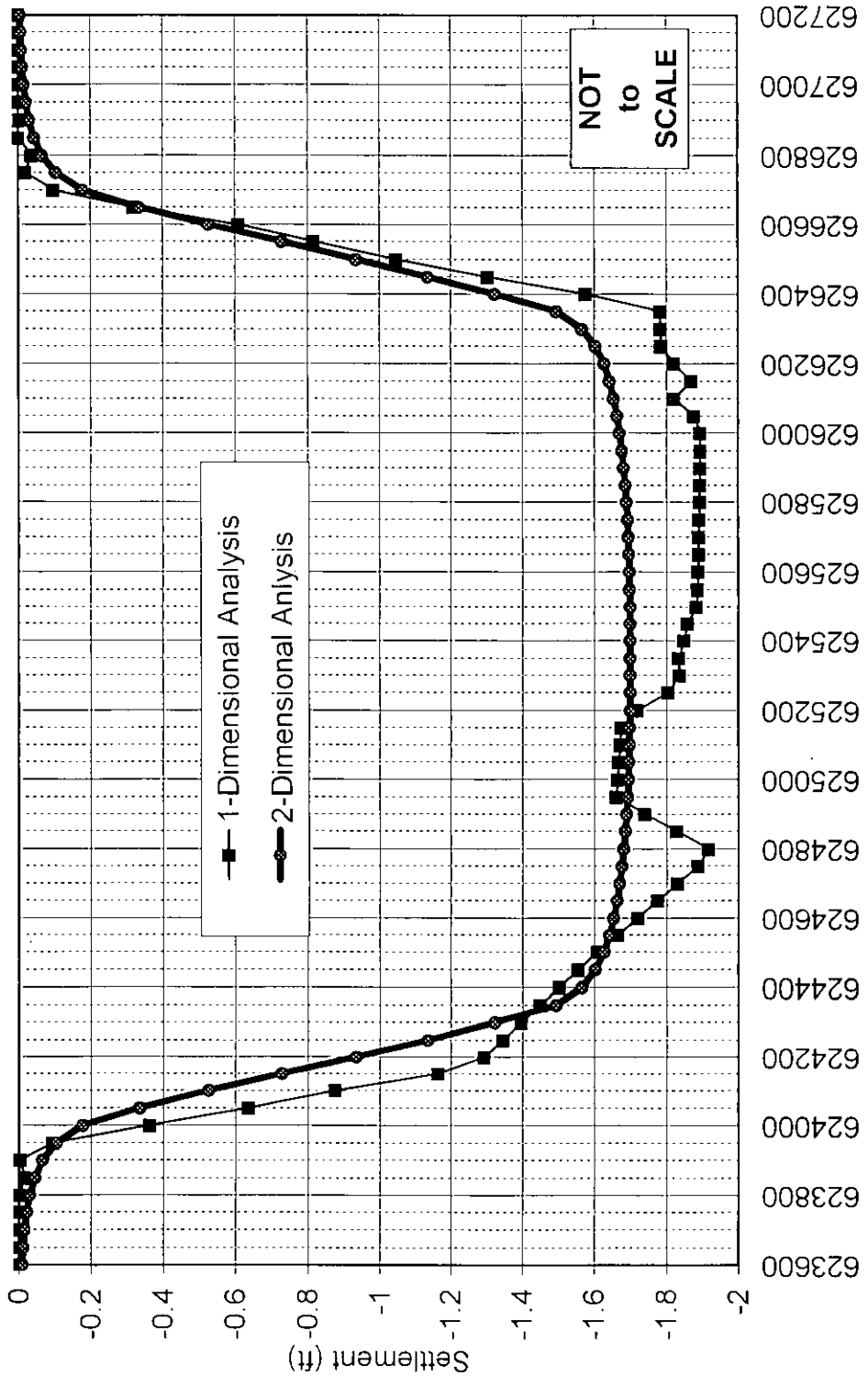

Figure 12. Comparison of Settlement of Cross-Section at Northing 1354300 (ft)

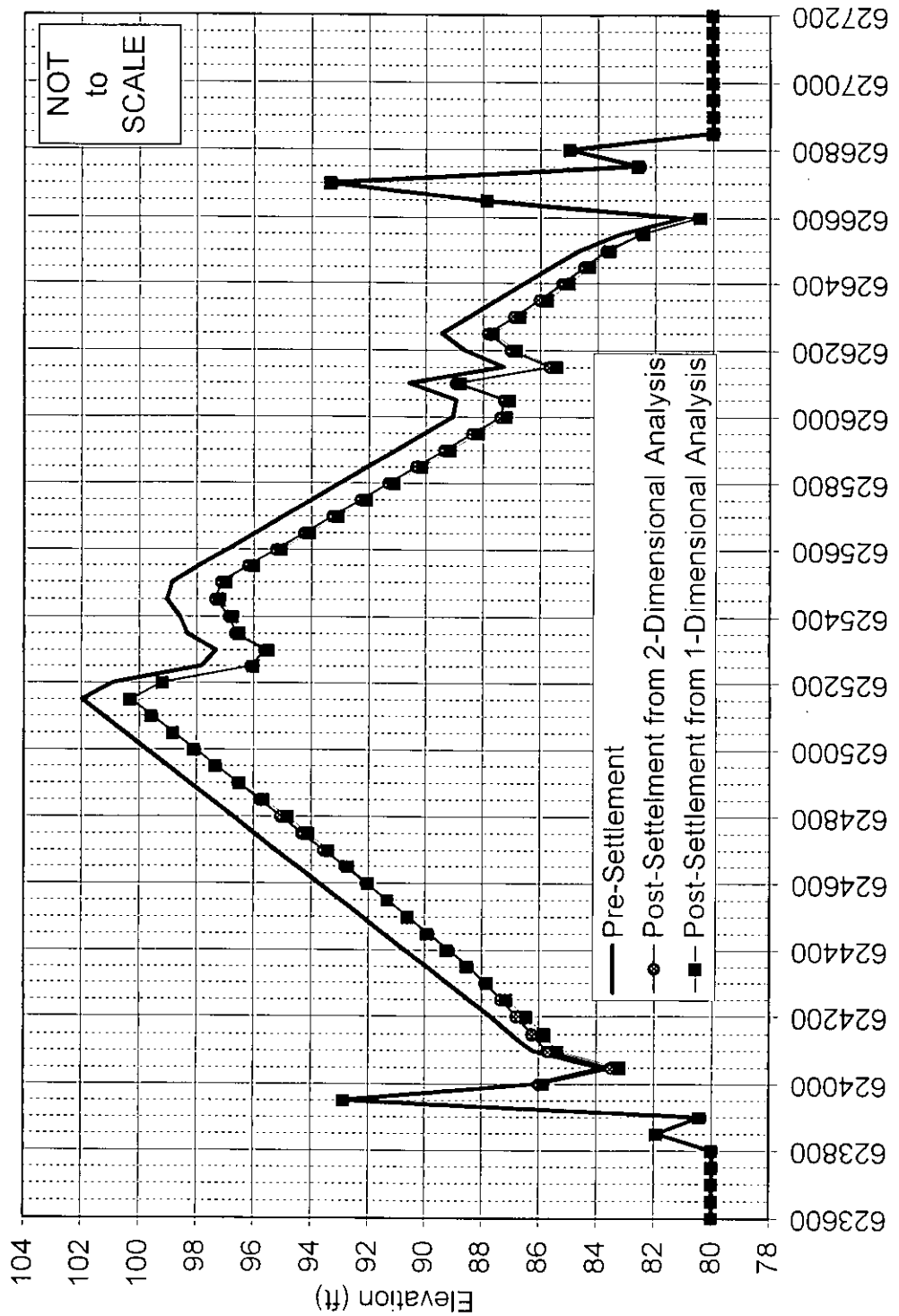

Figure 13. Comparison of Elevations of Cross-Section at: Northing 1354300 (ft)

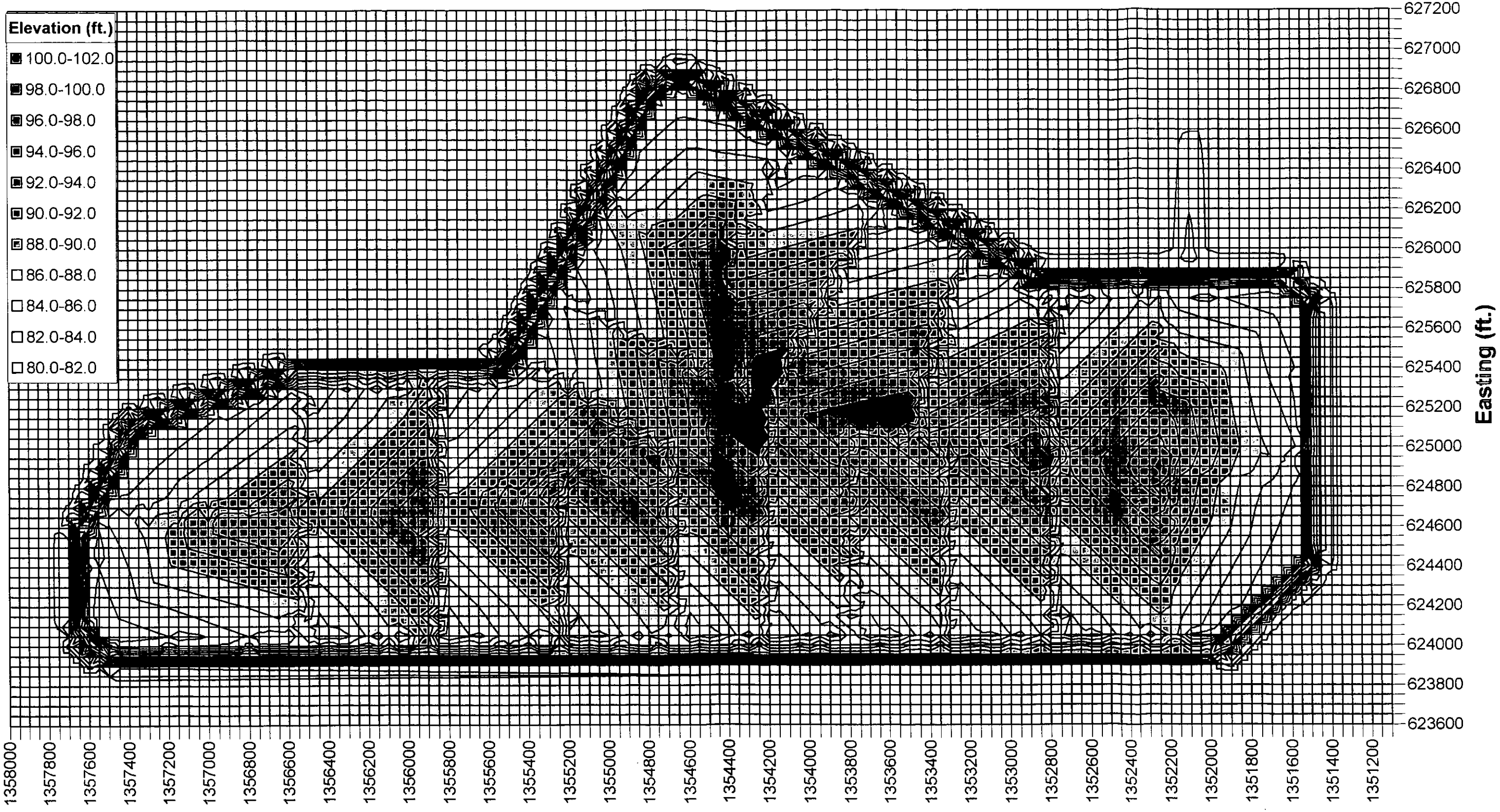

Figure 14. Subgrade Elevations: Post-Settlement.

$$y = f(x) \text{ at } x_i$$

$$y_i' = \frac{y_{i+1} - y_{i-1}}{2(\Delta x)} \qquad \text{central difference}$$

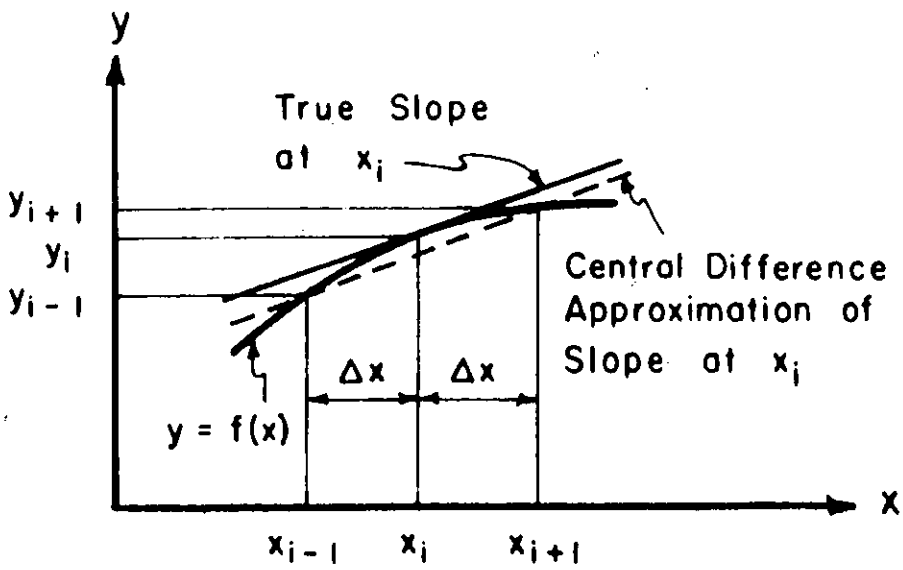

Figure 15. Central Difference Approximation of Slope, from Dunn (1980).

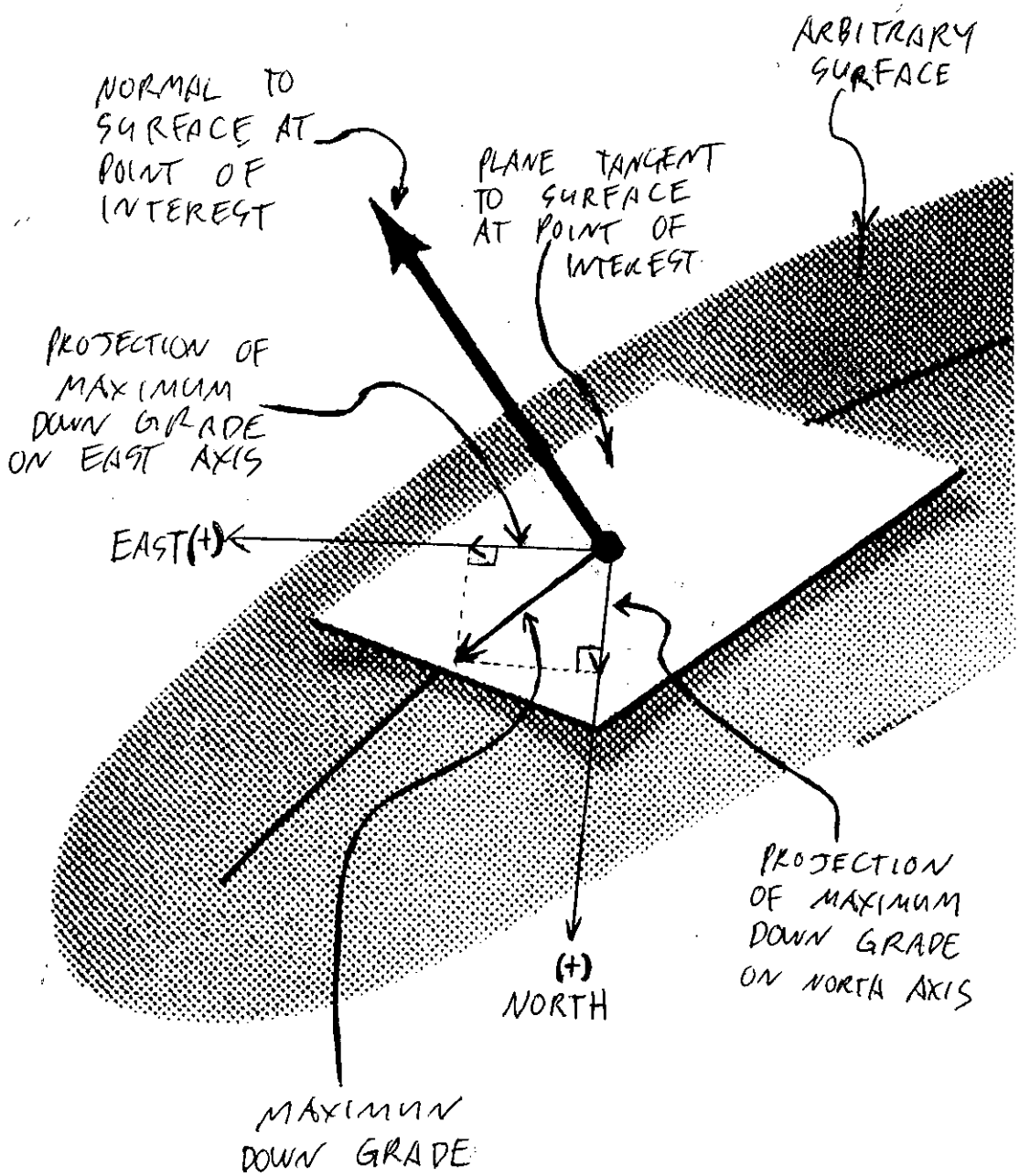

Figure 16. Gradients Within a Plane Tangent to an Arbitrary Surface.

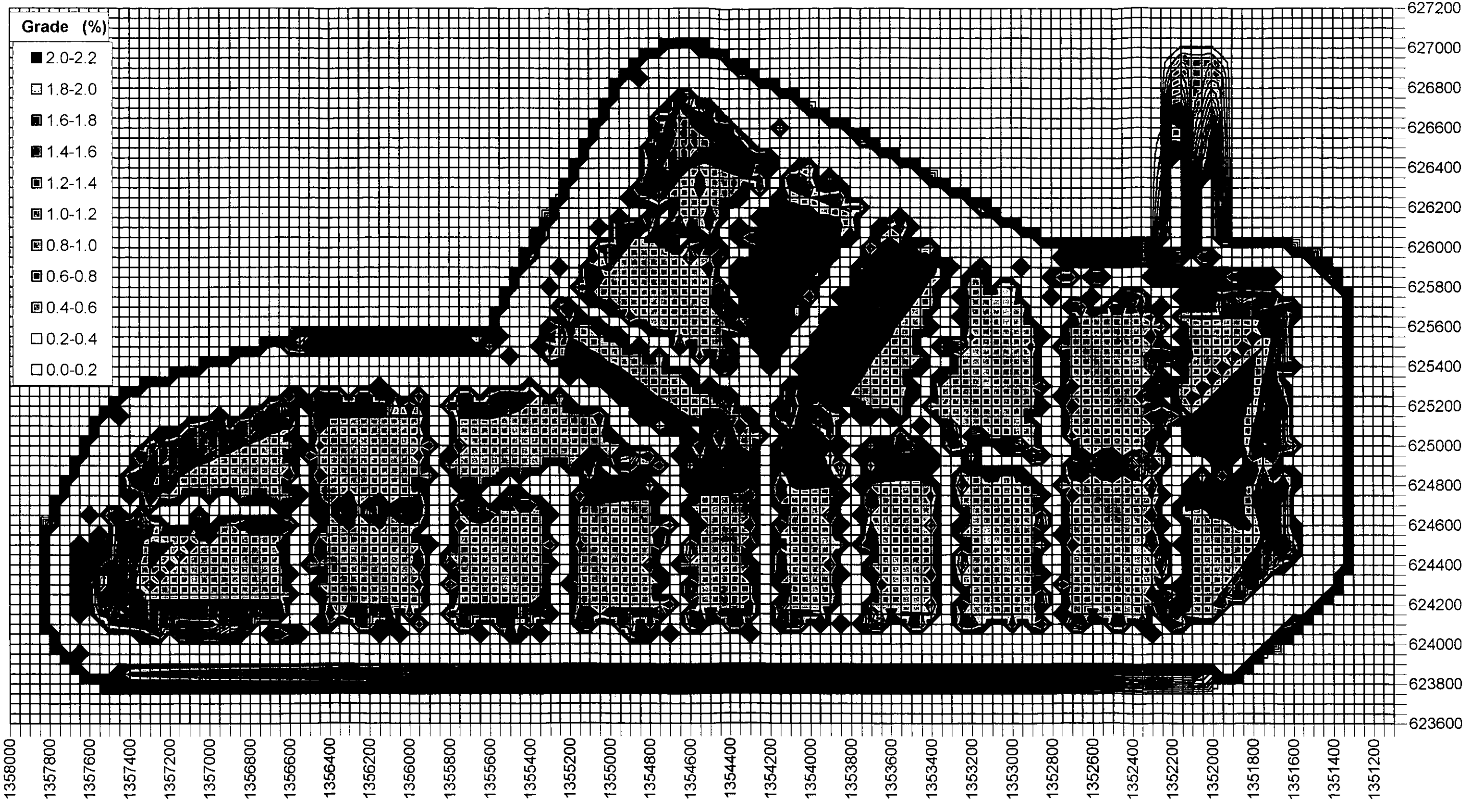

Figure 17. Maximum Grade (Only Cell Floor's are Shown): Post-Settlement.

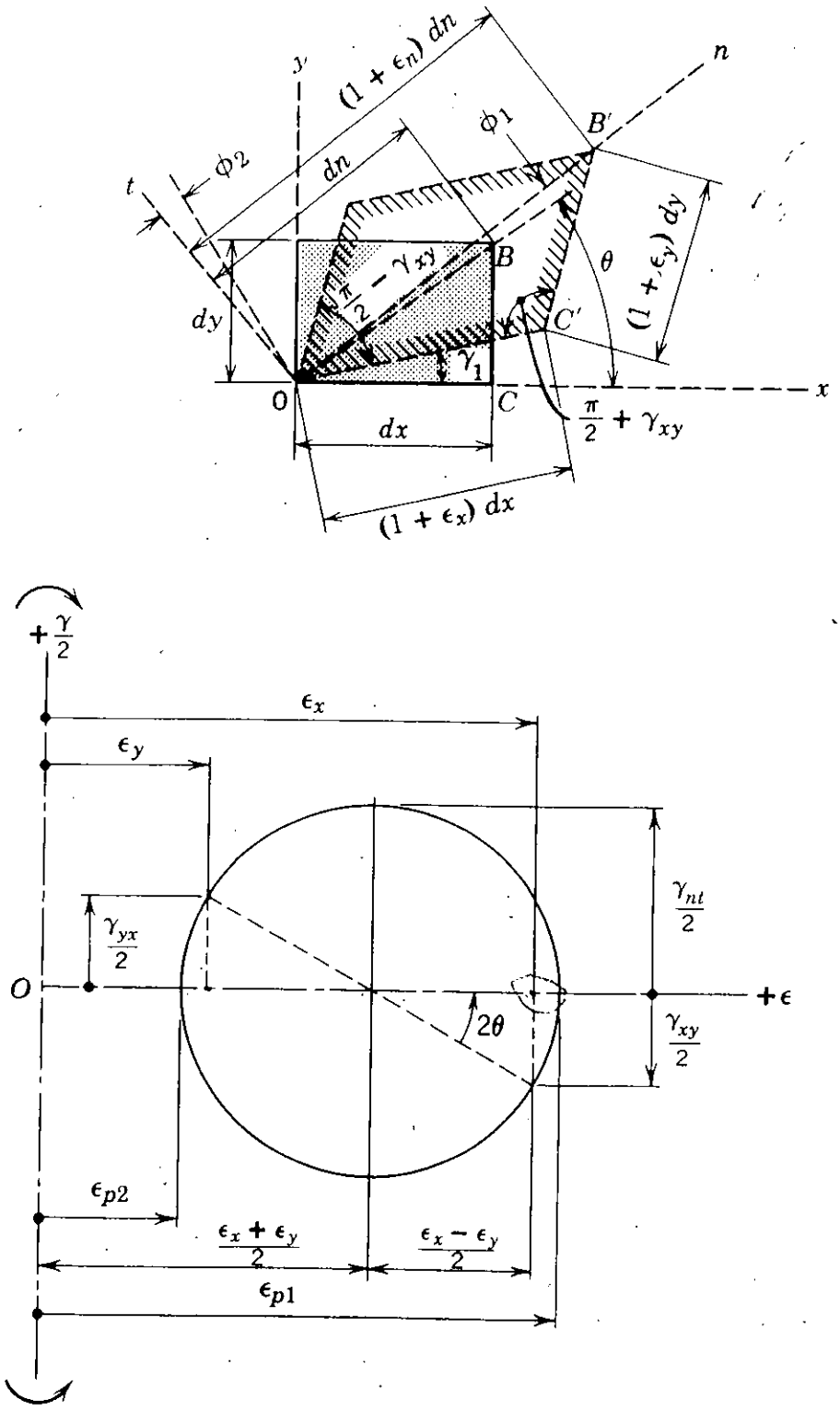

Figure 18. Plane Strain Condition, from Higdon (1985).

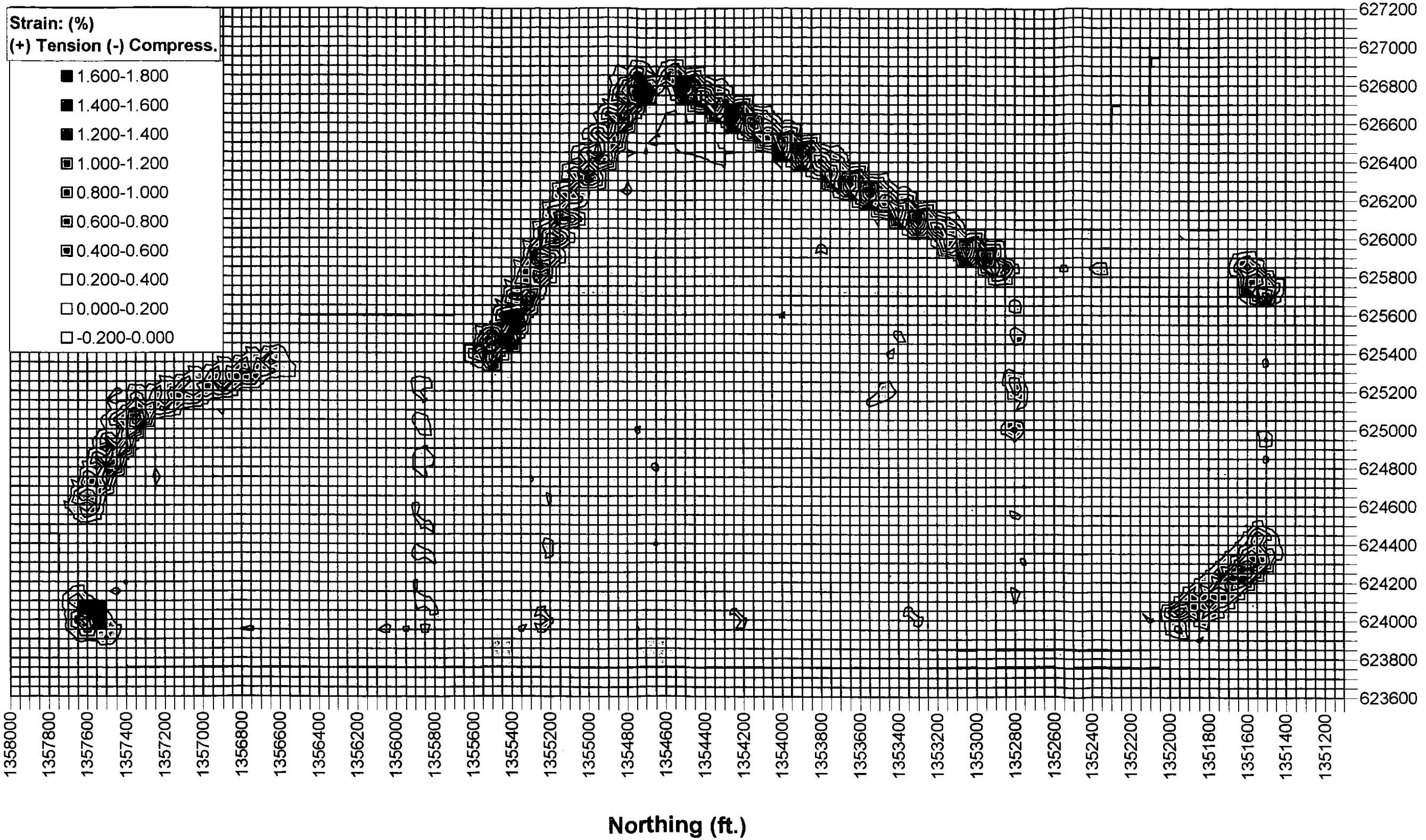

Figure 19. Major Principal Strain (Largest Normal Tensile Strain): Post-Settlement.

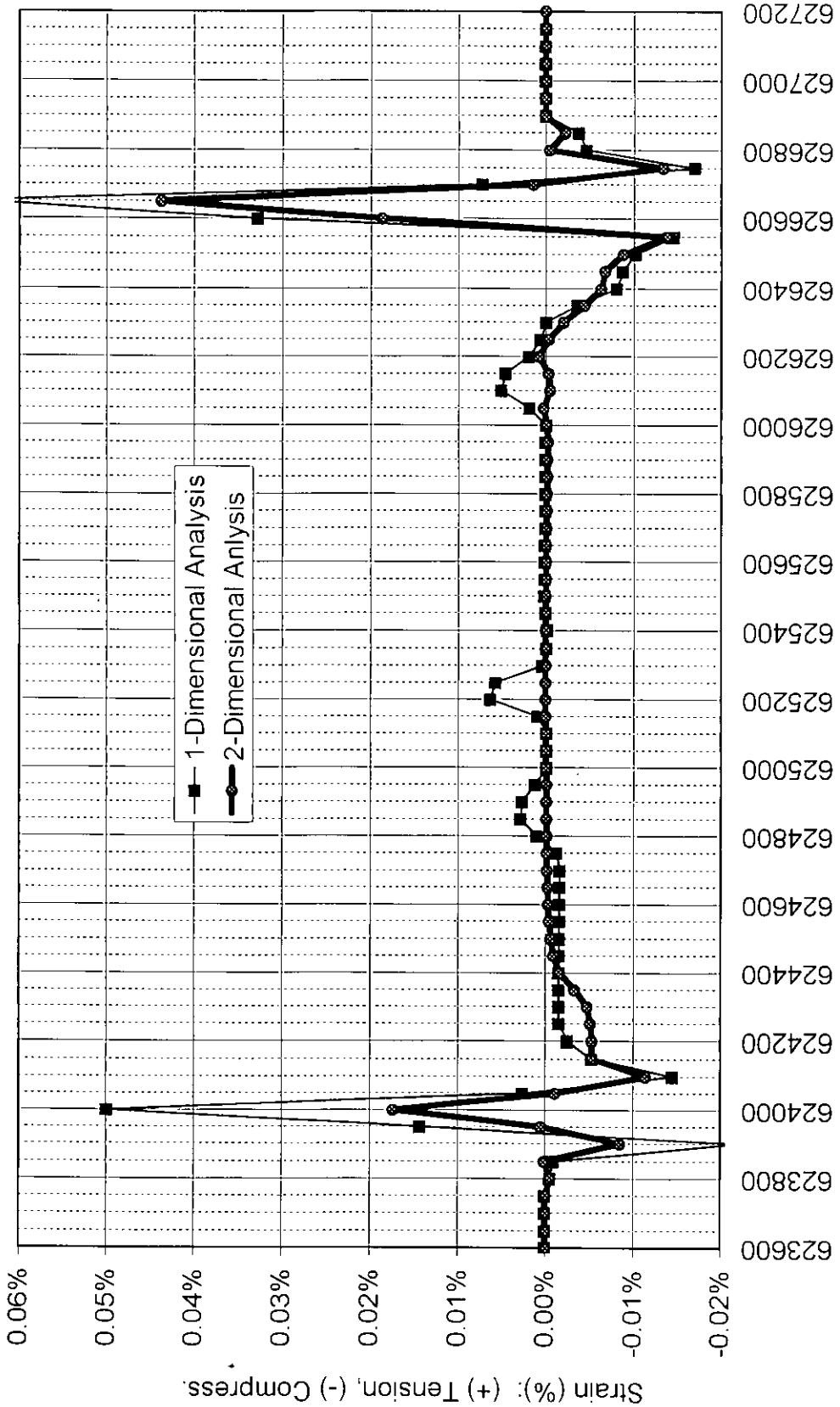

Figure 20. Comparison of Normal Strain of Cross-Section at: Northing 1354300 (ft)

ATTACHMENT 1

Cover Elevations

39/104

Cover Elevations (sheet 1 of 6)

EASTING (ft)	NORTHING (ft) 1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650	1357600	1357550	1357500	1357450	1357400	1357350	1357300	1357250	1357200	1357150	1357100	1357050	1357000	1356950	1356900	1356850
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.0	83.2	83.2	83.2	83.2	83.2	83.2	83.1	83.1	83.1	83.1	83.1	83.0	83.0
623900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.5	80.3	81.7	81.7	81.7	81.7	81.7	81.7	81.6	81.6	81.6	81.6	81.6	81.5
623950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.4	88.0	92.4	94.2	94.2	94.2	94.2	94.2	94.2	94.1	94.1	94.1	94.1	94.1	94.0	94.0
624000	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.5	90.9	98.8	104.5	106.7	106.7	106.7	106.7	106.7	106.7	106.6	106.6	106.6	106.6	106.6	106.5	106.5
624050	80.0	80.0	80.0	80.0	80.0	80.0	82.1	88.3	99.0	108.6	116.0	119.2	119.2	119.2	119.2	119.2	119.2	119.1	119.1	119.1	119.1	119.1	119.0	119.0
624100	80.0	80.0	80.0	80.0	80.0	82.5	86.8	93.0	104.8	116.2	126.2	131.7	131.7	131.7	131.7	131.7	131.7	131.6	131.6	131.6	131.6	131.6	131.5	131.5
624150	80.0	80.0	80.0	80.0	80.0	83.8	82.3	94.8	107.3	119.8	132.2	143.9	144.2	144.2	144.2	144.2	144.2	144.1	144.1	144.1	144.1	144.1	144.0	144.0
624200	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	107.4	119.9	132.4	144.9	155.1	154.6	154.5	154.5	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4
624250	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	107.4	119.9	132.4	144.9	157.0	157.0	157.0	157.0	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9
624300	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	107.4	119.9	132.4	144.9	157.4	159.5	159.5	159.5	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4
624350	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	107.4	119.9	132.4	144.9	157.4	162.0	162.0	162.0	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9
624400	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	107.4	119.9	132.4	144.9	157.4	164.5	164.5	164.5	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4
624450	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	107.4	119.9	132.4	144.9	157.4	167.0	167.0	167.0	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9
624500	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	107.4	119.9	132.4	144.9	157.4	169.4	169.5	169.5	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4
624550	80.0	80.0	80.0	80.0	80.0	83.5	81.8	94.3	106.5	118.6	130.2	141.5	152.7	164.0	172.0	172.0	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9
624600	80.0	80.0	80.0	80.0	80.0	81.1	80.0	90.8	102.3	113.5	124.8	136.0	147.3	158.6	169.8	174.5	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4
624650	80.0	80.0	80.0	80.0	80.0	80.0	85.0	85.6	96.8	108.1	119.4	130.6	141.9	153.1	164.4	175.6	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9
624700	80.0	80.0	80.0	80.0	80.0	80.0	82.9	80.1	91.4	102.7	113.9	125.2	136.4	147.7	158.9	170.2	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.6
624750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	86.0	97.2	108.5	119.7	131.0	142.3	153.5	164.8	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.1
624800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.3	80.5	91.8	103.1	114.3	125.6	136.8	148.1	159.3	170.6	171.6	171.6	171.6	171.6	171.6	171.6	171.6
624850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.5	86.4	97.6	108.9	120.1	131.4	142.6	153.9	165.2	169.1	169.1	169.1	169.1	169.1	169.1	169.1
624900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.7	80.9	92.2	103.4	114.7	126.0	137.2	148.5	159.7	164.5	166.6	166.6	166.6	166.6	166.6	166.6
624950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.0	86.8	98.0	109.3	120.5	131.8	143.0	148.6	152.6	156.6	160.6	164.1	164.1	164.1	164.1
625000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.1	81.3	92.6	103.8	115.1	125.7	132.8	136.8	140.8	144.7	148.7	152.7	156.7	160.6	161.6
625050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.5	87.1	98.0	108.1	116.1	121.0	124.9	128.9	132.9	136.9	140.8	144.8	148.8	152.8
625100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.2	80.7	90.4	98.8	104.9	109.1	113.1	117.1	121.0	125.0	129.0	133.0	136.9	140.9
625150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.3	88.2	93.3	97.3	101.2	105.2	109.2	113.2	117.1	121.1	125.1	129.1
625200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.9	81.4	85.4	89.4	93.4	97.3	101.3	105.3	109.3	113.2	117.2
625250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.6	85.0	81.3	81.5	85.5	89.5	93.4	97.4	101.4	105.4
625300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.7	85.0	81.2	81.6	85.6	89.5	93.5
625350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.7	85.0	81.1	81.7
625400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.8
625450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Cover Elevations (sheet 2 of 6)

(ft)	NORTHING (ft)																													
	1358800	1358750	1358700	1358650	1358600	1358550	1358500	1358450	1358400	1358350	1358300	1358250	1358200	1358150	1358100	1358050	1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	83.0	83.0	82.9	82.9	82.9	82.9	82.9	82.8	82.8	82.8	82.8	82.8	82.7	82.7	82.7	82.7	82.7	82.6	82.6	82.6	82.6	82.5	82.5	82.5
623900	81.5	81.5	81.4	81.4	81.4	81.4	81.4	81.3	81.3	81.3	81.3	81.3	81.2	81.2	81.2	81.2	81.2	81.1	81.1	81.1	81.1	81.1	81.0	81.0
623950	94.0	94.0	93.9	93.9	93.9	93.9	93.9	93.8	93.8	93.8	93.8	93.8	93.7	93.7	93.7	93.7	93.7	93.6	93.6	93.6	93.6	93.5	93.5	93.5
624000	106.5	106.5	106.4	106.4	106.4	106.4	106.4	106.3	106.3	106.3	106.3	106.3	106.2	106.2	106.2	106.2	106.2	106.2	106.1	106.1	106.1	106.1	106.0	106.0
624050	119.0	119.0	118.9	118.9	118.9	118.9	118.9	118.8	118.8	118.8	118.8	118.8	118.7	118.7	118.7	118.7	118.7	118.6	118.6	118.6	118.6	118.5	118.5	118.5
624100	131.5	131.5	131.4	131.4	131.4	131.4	131.4	131.3	131.3	131.3	131.3	131.3	131.2	131.2	131.2	131.2	131.2	131.1	131.1	131.1	131.1	131.0	131.0	131.0
624150	144.0	144.0	143.9	143.9	143.9	143.9	143.9	143.8	143.8	143.8	143.8	143.8	143.8	143.7	143.7	143.7	143.7	143.7	143.6	143.6	143.6	143.6	143.5	143.5
624200	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.4	154.3	154.3	154.3	154.3	154.2	154.0	153.8
624250	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.9	156.8	156.8	156.8	156.8	156.7	156.5	156.3
624300	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.4	159.3	159.3	159.3	159.3	159.2	159.0	158.8
624350	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.9	161.8	161.8	161.8	161.8	161.7	161.5	161.3
624400	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.3	164.3	164.3	164.3	164.2	164.0	163.8
624450	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.9	166.8	166.8	166.8	166.8	166.6	166.5	166.3
624500	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.4	169.3	169.3	169.3	169.3	169.1	168.9	168.8
624550	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.9	171.8	171.8	171.8	171.8	171.6	171.4	171.3
624600	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.4	174.3	174.3	174.3	174.3	174.1	173.9
624650	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.9	176.8	176.8	176.8	176.8	176.8	176.4	176.2
624700	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.6	176.7	176.7	176.7	176.7	176.7	176.7	176.7	176.9	177.1	177.3
624750	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.1	174.2	174.2	174.2	174.2	174.2	174.2	174.2	174.4	174.6	174.8
624800	171.6	171.6	171.6	171.6	171.6	171.6	171.6	171.6	171.6	171.6	171.6	171.6	171.6	171.6	171.7	171.7	171.7	171.7	171.7	171.7	171.7	171.9	172.1	172.3
624850	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.2	169.2	169.2	169.2	169.2	169.2	169.2	169.4	169.6	169.8
624900	166.6	166.6	166.6	166.6	166.6	166.6	166.6	166.6	166.6	166.6	166.6	166.6	166.6	166.6	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.9	167.1	167.3
624950	164.1	164.1	164.1	164.1	164.1	164.1	164.1	164.1	164.1	164.1	164.1	164.1	164.1	164.1	164.2	164.2	164.2	164.2	164.2	164.2	164.2	164.4	164.6	164.8
625000	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.7	161.7	161.7	161.7	161.7	161.7	161.6	161.9	162.1	162.3
625050	156.8	159.1	159.1	159.1	159.1	159.1	159.1	159.1	159.1	159.1	159.1	159.1	159.1	159.1	159.2	159.2	159.2	159.2	159.2	159.2	159.3	159.5	159.8	159.8
625100	144.9	148.9	152.9	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.7	156.7	156.7	156.7	156.7	156.7	156.8	157.0	157.1	157.3
625150	133.1	137.0	141.0	145.0	149.0	152.9	154.1	154.1	154.1	154.1	154.1	154.1	154.1	154.1	154.2	154.2	154.2	154.2	154.2	154.2	154.3	154.3	154.3	154.4
625200	121.2	125.2	129.2	133.1	137.1	141.1	142.5	142.5	142.6	142.6	142.6	142.6	142.7	142.7	142.7	142.7	142.7	142.7	142.8	142.8	142.8	142.8	142.8	142.9
625250	109.4	113.3	117.3	121.3	125.3	129.2	130.0	130.0	130.1	130.1	130.1	130.1	130.2	130.2	130.2	130.2	130.2	130.2	130.3	130.3	130.3	130.3	130.3	130.4
625300	97.5	101.5	105.5	109.4	113.4	117.0	117.5	117.5	117.6	117.6	117.6	117.6	117.6	117.7	117.7	117.7	117.7	117.7	117.7	117.8	117.8	117.8	117.8	117.9
625350	85.6	89.6	93.6	97.6	101.6	104.6	105.0	105.0	105.1	105.1	105.1	105.1	105.2	105.2	105.2	105.2	105.2	105.3	105.3	105.3	105.3	105.3	105.4	105.4
625400	85.0	81.0	81.6	85.7	89.7	92.2	92.5	92.5	92.6	92.6	92.6	92.6	92.7	92.7	92.7	92.7	92.7	92.8	92.8	92.8	92.8	92.8	92.9	92.9
625450	80.0	80.0	83.9	85.0	81.1	80.0	80.0	80.0	80.1	80.1	80.1	80.1	80.2	80.2	80.2	80.2	80.2	80.3	80.3	80.3	80.3	80.3	80.4	80.4
625500	80.0	80.0	80.0	80.0	80.0	81.2	81.5	81.5	81.6	81.6	81.6	81.6	81.6	81.7	81.7	81.7	81.7	81.7	81.8	81.8	81.8	81.8	81.8	81.9
625550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

4/1/04

Cover Elevations (sheet 3 of 6)

EASTING (ft)	NORTHING (ft) 1355600	1355550	1355500	1355450	1355400	1355350	1355300	1355250	1355200	1355150	1355100	1355050	1355000	1354950	1354900	1354850	1354800	1354750	1354700	1354650	1354600	1354550	1354500	1354450
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	82.5	82.5	82.4	82.4	82.4	82.4	82.4	82.3	82.3	82.3	82.3	82.2	82.2	82.2	82.2	82.2	82.1	82.1	82.1	82.1	82.1	82.0	82.0	82.0
623900	81.0	81.0	80.9	80.9	80.9	80.9	80.9	80.8	80.8	80.8	80.8	80.7	80.7	80.7	80.7	80.7	80.6	80.6	80.6	80.6	80.6	80.5	80.5	80.5
623950	93.5	93.5	93.4	93.4	93.4	93.4	93.4	93.3	93.3	93.3	93.3	93.2	93.2	93.2	93.2	93.2	93.1	93.1	93.1	93.1	93.1	93.0	93.0	93.0
624000	106.0	106.0	105.9	105.9	105.9	105.9	105.9	105.8	105.8	105.8	105.8	105.7	105.7	105.7	105.7	105.7	105.7	105.6	105.6	105.6	105.6	105.6	105.5	105.5
624050	118.5	118.5	118.4	118.4	118.4	118.4	118.4	118.3	118.3	118.3	118.3	118.2	118.2	118.2	118.2	118.2	118.1	118.1	118.1	118.1	118.1	118.0	118.0	118.0
624100	131.0	131.0	130.9	130.9	130.9	130.9	130.9	130.8	130.8	130.8	130.8	130.7	130.7	130.7	130.7	130.7	130.6	130.6	130.6	130.6	130.6	130.5	130.5	130.5
624150	143.5	143.5	143.4	143.4	143.4	143.4	143.4	143.3	143.3	143.3	143.3	143.2	143.2	143.2	143.2	143.2	143.1	143.1	143.1	143.1	143.1	143.0	143.0	143.0
624200	153.4	153.2	153.1	152.9	152.7	152.5	152.3	152.1	151.9	151.7	151.6	151.4	151.2	151.0	150.8	150.6	150.4	150.2	150.0	149.9	149.7	149.5	149.3	149.1
624250	155.9	155.7	155.5	155.4	155.2	155.0	154.8	154.6	154.4	154.2	154.0	153.9	153.7	153.5	153.3	153.1	152.9	152.7	152.5	152.4	152.2	152.0	151.8	151.6
624300	158.4	158.2	158.0	157.9	157.7	157.5	157.3	157.1	156.9	156.7	156.5	156.3	156.2	156.0	155.8	155.6	155.4	155.2	155.0	154.8	154.7	154.5	154.3	154.1
624350	160.9	160.7	160.5	160.3	160.2	160.0	159.8	159.6	159.4	159.2	159.0	158.8	158.7	158.5	158.3	158.1	157.9	157.7	157.5	157.3	157.2	157.0	156.8	156.6
624400	163.4	163.2	163.0	162.8	162.6	162.5	162.3	162.1	161.9	161.7	161.5	161.3	161.1	161.0	160.8	160.6	160.4	160.2	160.0	159.8	159.6	159.5	159.3	159.1
624450	165.9	165.7	165.5	165.3	165.1	165.0	164.8	164.6	164.4	164.2	164.0	163.8	163.6	163.5	163.3	163.1	162.9	162.7	162.5	162.3	162.1	162.0	161.8	161.6
624500	168.4	168.2	168.0	167.8	167.6	167.4	167.3	167.1	166.9	166.7	166.5	166.3	166.1	165.9	165.8	165.6	165.4	165.2	165.0	164.8	164.6	164.4	164.3	164.1
624550	170.9	170.7	170.5	170.3	170.1	169.9	169.8	169.6	169.4	169.2	169.0	168.8	168.6	168.4	168.3	168.1	167.9	167.7	167.5	167.3	167.1	166.9	166.7	166.6
624600	173.4	173.2	173.0	172.8	172.6	172.4	172.2	172.1	171.9	171.7	171.5	171.3	171.1	170.9	170.7	170.6	170.4	170.2	170.0	169.8	169.6	169.4	169.2	169.1
624650	175.9	175.7	175.5	175.3	175.1	174.9	174.7	174.6	174.4	174.2	174.0	173.8	173.6	173.4	173.2	173.0	172.9	172.7	172.5	172.3	172.1	171.9	171.7	171.5
624700	177.7	177.8	178.0	177.8	177.6	177.4	177.2	177.0	176.9	176.7	176.5	176.3	176.1	175.9	175.7	175.5	175.4	175.2	175.0	174.8	174.6	174.4	174.2	174.0
624750	175.2	175.3	175.5	175.7	175.9	176.1	176.3	176.5	176.7	176.8	177.0	177.2	177.4	177.6	177.8	178.0	177.8	177.7	177.5	177.3	177.1	176.9	176.7	176.5
624800	172.7	172.9	173.0	173.2	173.4	173.6	173.8	174.0	174.2	174.4	174.5	174.7	174.9	175.1	175.3	175.5	175.7	175.9	176.0	176.2	176.4	176.6	176.8	177.0
624850	170.2	170.4	170.5	170.7	170.9	171.1	171.3	171.5	171.7	171.9	172.1	172.2	172.4	172.6	172.8	173.0	173.2	173.4	173.6	173.7	173.9	174.1	174.3	174.5
624900	167.7	167.9	168.1	168.2	168.4	168.6	168.8	169.0	169.2	169.4	169.6	169.7	169.9	170.1	170.3	170.5	170.7	170.9	171.1	171.2	171.4	171.6	171.8	172.0
624950	165.2	165.4	165.6	165.8	165.9	166.1	166.3	166.5	166.7	166.9	167.1	167.3	167.4	167.6	167.8	168.0	168.2	168.4	168.6	168.8	168.9	169.1	169.3	169.5
625000	162.7	162.9	163.1	163.3	163.4	163.6	163.8	164.0	164.2	164.4	164.6	164.8	164.9	165.1	165.3	165.5	165.7	165.9	166.1	166.3	166.4	166.6	166.8	167.0
625050	160.2	160.4	160.6	160.8	161.0	161.1	161.3	161.5	161.7	161.9	162.1	162.3	162.5	162.6	162.8	163.0	163.2	163.4	163.6	163.8	164.0	164.1	164.3	164.5
625100	157.7	157.9	158.1	158.3	158.5	158.6	158.8	159.0	159.2	159.4	159.6	159.8	160.0	160.1	160.3	160.5	160.7	160.9	161.1	161.3	161.5	161.7	162.8	165.2
625150	154.6	155.1	155.6	155.8	156.0	156.2	156.3	156.5	156.7	156.9	157.1	157.3	157.5	157.7	157.8	158.0	158.2	158.4	158.6	158.8	159.0	161.1	163.5	165.9
625200	143.4	145.4	149.0	153.3	153.5	153.7	153.8	154.0	154.2	154.4	154.6	154.8	155.0	155.2	155.4	155.5	155.7	155.9	156.1	157.0	159.4	161.8	164.2	166.6
625250	130.9	133.3	137.3	142.6	149.3	151.2	151.4	151.5	151.7	151.9	152.1	152.3	152.5	152.7	152.9	153.0	153.2	153.4	155.3	157.7	160.1	162.5	164.9	167.3
625300	118.6	121.2	125.8	132.0	139.4	147.8	148.9	149.1	149.2	149.4	149.6	149.8	150.0	150.2	150.4	150.6	151.2	153.6	156.0	158.4	160.8	163.2	165.6	168.0
625350	106.2	109.4	114.8	121.8	130.1	139.3	148.0	148.0	148.0	148.0	148.0	148.0	148.0	148.0	148.0	148.0	149.5	151.9	154.3	156.7	159.1	161.5	163.9	166.3
625400	93.9	97.9	104.3	112.5	121.9	132.0	142.7	144.1	144.5	144.9	145.3	145.6	146.0	146.6	148.0	150.2	152.6	155.0	157.4	159.8	162.2	164.6	167.0	169.4
625450	81.8	86.9	94.7	104.3	114.8	125.7	136.8	141.6	141.8	141.9	142.1	142.3	143.7	146.6	148.5	150.9	153.3	155.7	158.1	160.5	162.9	165.3	167.7	170.1
625500	83.9	81.9	86.9	97.8	108.9	119.9	131.0	139.1	139.3	139.5	139.6	141.9	144.4	146.8	149.2	151.6	154.0	156.4	158.8	161.2	163.6	166.0	168.4	170.8
625550	80.0	83.8	80.9	92.0	103.1	114.1	125.2	136.3	136.8	137.8	140.2	142.6	145.0	147.4	149.8	152.2	154.7	157.1	159.5	161.9	164.3	166.7	169.1	171.5
625600	80.0	80.0	84.5	86.2	97.3	108.4	119.4	130.5	136.1	136.5	140.9	143.3	145.7	148.1	150.5	152.9	155.3	157.7	160.1	162.6	165.0	167.4	169.8	172.2
625650	80.0	80.0	83.3	80.4	91.5	102.6	113.6	124.7	135.8	139.2	141.6	144.0	146.4	148.8	151.2	153.6	156.0	158.4	160.8	163.2	165.6	168.0	170.5	172.9
625700	80.0	80.0	80.0	85.0	85.7	96.8	107.9	118.9	130.0	139.9	142.3	144.7	147.1	149.5	151.9	154.3	156.7	159.1	161.5	163.9	166.3	168.7	171.1	173.5
625750	80.0	80.0	80.0	82.8	80.0	91.0	102.1	113.1	124.2	135.3	143.0	145.4	147.8	150.2	152.6	155.0	157.4	159.8	162.2	164.6	167.0	169.4	171.8	174.2
625800	80.0	80.0	80.0	80.0	85.0	85.2	96.3	107.3	118.4	129.5	140.6	146.1	148.5	150.9	153.3	155.7	158.1	160.5	162.9	165.3	167.7	170.1	172.5	174.9
625850	80.0	80.0	80.0	80.0	82.3	80.0	90.5	101.6	112.6	123.7	134.8	145.9	149.2	151.6	154.0	156.4	158.8	161.2	163.6	166.0	168.4	170.8	173.2	175.6
625900	80.0	80.0	80.0	80.0	80.0	85.0	84.7	95.8	106.8	117.9	129.0	140.1	149.9	152.3	154.7	157.1	159.5	161.9	164.3	166.7	169.1	171.5	173.9	176.3
625950	80.0	80.0	80.0	80.0	80.0	81.8	80.0	90.0	101.1	112.1	123.2	134.3	145.4	153.0	155.4	157.8	160.2	162.6	165.0	167.4	169.8	172.2	174.6	177.0
626000	80.0	80.0	80.0	80.0	80.0	80.0	85.0	84.2	95.3	106.3	117.4	128.5	139.6	150.7	156.1	158.5	160.9	163.3	165.7	168.1	170.5	172.9	175.3	177.7
626050	80.0	80.0	80.0	80.0	80.0	80.0	81.3	80.1	89.5	100.6	111.6	122.7	133.8	144.9	155.9	159.2	161.6	164.0	166.4	168.8	171.2	173.6	176.0	177.6
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	83.7	94.8	105.8	116.9	128.0	139.1	150.2	159.9	162.3	164.7	167.1	169.5	171.9	174.3	176.7	176.9
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.8	80.8	89.0	100.1	111.1	122.2	133.3	144.4	155.4	163.0	165.4	167.8	170.2	172.6	175.0	177.4	176.2
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	83.2	94.3	105.3	116.4	127.5	138.6	149.7	160.7	166.1	168.5	170.9	173.3	175.7	177.9	175.5
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.3	81.5	88.5	99.6	110.6	121.7	132.8	143.9	154.9	166.0	169.2	171.6	174.0	176.4	177.2	174.8
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.7	93.8	104.8	115.9	127.0	138.1	149.2	160.2	169.9	172.3	174.7	177.1	176.5	174.1
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.2	88.0	99.1	110.1	121.2	132.3	143.4	154.4	165.5	173.0	175.4	177.8	175.8	173.4
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.2	93.3	104.3	115.4	126.5	137.6	148.7	159.7	170.8	176.1	177.6	175.2	172.7
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.8	87.5	98.5	109.6	120.7	131.8	142.9	153.9	165.0	176.1	176.9	172.6	168.3
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.6	81.7	92.8	103.8	114.9	126.0	137.1	148.2	159.2	170.3	168.1	161.8	155.5
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.5	87.0	98.0	109.1	120.2	131.3	142.4	153.4	163.6	157.3	151.0	144.7
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.1	81.2	92.3	103.3	114.4	125.5	136.6	147.6	152.7	146.5	140.2	133.9
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.2	86.5	97.5	108.6	119.7	130.8	141.9	141.9	135.7	129.4	123.1
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.6	80.7	91.8	102.8	113.9	124.7	132.5	131.1	124.9	118.6	112.3
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.8	86.0	96.9	107.1	115.6	120.4	119.8	114.0	107.8	101.5
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.0	80.0	88.5	98.0	104.6	108.1	107.6	103.1	97.0	90.7
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	80.5	87.7	93.0	95.6	95.2	91.9	86.2	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.4	82.4	81.0	83.2	82.8	80.1	84.5	83.1
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.9	84.7	84.4	82.1	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

4/2/104

Cover Elevations (sheet 4 of 6)

EASTING (ft) \ NORTHING (ft)	1354400	1354350	1354300	1354250	1354200	1354150	1354100	1354050	1354000	1353950	1353900	1353850	1353800	1353750	1353700	1353650	1353600	1353550	1353500	1353450	1353400	1353350	1353300	1353250
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	82.0	81.9	81.9	81.9	81.9	81.9	81.8	81.8	81.8	81.8	81.8	81.7	81.7	81.7	81.7	81.6	81.6	81.6	81.6	81.6	81.5	81.5	81.5	81.5
623900	80.5	80.4	80.4	80.4	80.4	80.4	80.3	80.3	80.3	80.3	80.3	80.2	80.2	80.2	80.2	80.1	80.1	80.1	80.1	80.1	80.0	80.0	80.0	80.0
623950	93.0	92.9	92.9	92.9	92.9	92.9	92.8	92.8	92.8	92.8	92.8	92.7	92.7	92.7	92.7	92.6	92.6	92.6	92.6	92.6	92.5	92.5	92.5	92.5
624000	105.5	105.4	105.4	105.4	105.4	105.4	105.3	105.3	105.3	105.3	105.3	105.2	105.2	105.2	105.2	105.1	105.1	105.1	105.1	105.1	105.0	105.0	105.0	105.0
624050	118.0	117.9	117.9	117.9	117.9	117.9	117.8	117.8	117.8	117.8	117.8	117.7	117.7	117.7	117.7	117.6	117.6	117.6	117.6	117.6	117.5	117.5	117.5	117.5
624100	130.5	130.4	130.4	130.4	130.4	130.4	130.3	130.3	130.3	130.3	130.3	130.2	130.2	130.2	130.2	130.1	130.1	130.1	130.1	130.1	130.0	130.0	130.0	130.0
624150	143.0	142.9	142.9	142.9	142.9	142.9	142.8	142.8	142.8	142.8	142.8	142.7	142.7	142.7	142.7	142.6	142.6	142.6	142.6	142.6	142.5	142.5	142.3	142.1
624200	148.9	148.7	148.5	148.4	148.2	148.0	147.8	147.6	147.4	147.2	147.0	146.9	146.7	146.5	146.3	146.1	145.9	145.7	145.5	145.4	145.2	145.0	144.8	144.6
624250	151.4	151.2	151.0	150.9	150.7	150.5	150.3	150.1	149.9	149.7	149.5	149.4	149.2	149.0	148.8	148.6	148.4	148.2	148.0	147.8	147.7	147.5	147.3	147.1
624300	153.9	153.7	153.5	153.3	153.2	153.0	152.8	152.6	152.4	152.2	152.0	151.8	151.7	151.5	151.3	151.1	150.9	150.7	150.5	150.3	150.2	150.0	149.8	149.6
624350	156.4	156.2	156.0	155.8	155.7	155.5	155.3	155.1	154.9	154.7	154.5	154.3	154.1	154.0	153.8	153.6	153.4	153.2	153.0	152.8	152.6	152.5	152.3	152.1
624400	158.9	158.7	158.5	158.3	158.1	158.0	157.8	157.6	157.4	157.2	157.0	156.8	156.6	156.5	156.3	156.1	155.9	155.7	155.5	155.3	155.1	155.0	154.8	154.6
624450	161.4	161.2	161.0	160.8	160.6	160.4	160.3	160.1	159.9	159.7	159.5	159.3	159.1	158.9	158.8	158.6	158.4	158.2	158.0	157.8	157.6	157.4	157.3	157.1
624500	163.9	163.7	163.5	163.3	163.1	162.9	162.8	162.6	162.4	162.2	162.0	161.8	161.6	161.4	161.3	161.1	160.9	160.7	160.5	160.3	160.1	159.9	159.7	159.6
624550	166.4	166.2	166.0	165.8	165.6	165.4	165.2	165.1	164.9	164.7	164.5	164.3	164.1	163.9	163.7	163.6	163.4	163.2	163.0	162.8	162.6	162.4	162.2	162.1
624600	168.9	168.7	168.5	168.3	168.1	167.9	167.7	167.6	167.4	167.2	167.0	166.8	166.6	166.4	166.2	166.1	165.9	165.7	165.5	165.3	165.1	164.9	164.7	164.5
624650	171.4	171.2	171.0	170.8	170.6	170.4	170.2	170.0	169.9	169.7	169.5	169.3	169.1	168.9	168.7	168.5	168.4	168.2	168.0	167.8	167.6	167.4	167.2	167.0
624700	173.9	173.7	173.5	173.3	173.1	172.9	172.7	172.5	172.4	172.2	172.0	171.8	171.6	171.4	171.2	171.0	170.8	170.7	170.5	170.3	170.1	169.9	169.7	169.5
624750	176.3	176.2	176.0	175.8	175.6	175.4	175.2	175.0	174.8	174.7	174.5	174.3	174.1	173.9	173.7	173.5	173.3	173.2	173.0	172.8	172.6	172.4	172.2	172.0
624800	177.2	177.4	177.5	177.7	177.9	177.9	177.7	177.5	177.3	177.1	177.0	176.8	176.6	176.4	176.2	176.0	175.8	175.6	175.5	175.3	175.1	174.9	174.7	174.5
624850	174.7	174.9	175.1	175.2	175.4	176.2	177.4	176.0	176.2	176.4	176.6	176.7	176.9	177.1	177.3	177.5	177.7	177.9	178.0	177.8	177.6	177.4	177.2	177.0
624900	172.2	172.4	172.6	172.7	174.5	176.9	176.8	174.4	173.7	173.9	174.1	174.3	174.4	174.6	174.8	175.0	175.2	175.4	175.6	175.8	175.9	176.1	176.3	176.5
624950	169.7	169.9	170.3	172.7	175.1	177.5	176.1	173.7	171.3	171.4	171.6	171.8	171.9	172.1	172.3	172.5	172.7	172.9	173.1	173.3	173.4	173.6	173.8	174.0
625000	167.2	168.6	171.0	173.4	175.8	177.8	175.4	173.0	170.6	168.9	169.1	169.3	169.5	169.6	169.8	170.0	170.2	170.4	170.6	170.8	171.0	171.1	171.3	171.5
625050	166.9	169.3	171.7	174.1	176.5	177.1	174.7	172.3	169.9	167.5	166.6	166.8	167.0	167.1	167.3	167.5	167.7	167.9	168.1	168.3	168.5	168.6	168.8	169.0
625100	167.6	170.0	172.4	174.8	177.2	176.4	174.0	171.6	169.2	166.8	164.4	164.3	164.5	164.7	164.8	165.0	165.2	165.4	165.6	165.8	166.0	166.2	166.3	166.5
625150	168.3	170.7	173.1	175.5	177.9	175.7	173.3	170.9	168.5	166.1	163.7	161.8	162.0	162.2	162.3	162.5	162.7	162.9	163.1	163.3	163.5	163.7	163.9	164.0
625200	169.0	171.4	173.8	176.2	177.4	175.0	172.6	170.2	167.8	165.4	163.0	160.6	159.5	159.7	159.9	160.0	160.2	160.4	160.6	160.8	161.0	161.2	161.4	161.5
625250	169.7	172.1	174.5	176.9	176.7	174.3	171.9	169.5	167.1	164.7	162.3	159.9	157.5	157.2	157.4	157.6	157.7	157.9	158.1	158.3	158.5	158.7	158.9	159.1
625300	170.4	172.8	175.2	177.6	176.0	173.6	171.2	168.8	166.4	164.0	161.6	159.2	156.8	154.7	154.9	155.1	155.2	155.4	155.6	155.8	156.0	156.2	156.4	156.6
625350	171.1	173.5	175.9	177.7	175.3	172.9	170.5	168.1	165.7	163.3	160.9	158.5	156.1	153.7	152.4	152.6	152.8	152.9	153.1	153.3	153.5	153.7	153.9	154.1
625400	171.8	174.2	176.6	177.0	174.6	172.2	169.8	167.4	165.0	162.6	160.2	157.8	155.4	153.0	150.6	150.1	150.3	150.4	150.6	150.8	151.0	151.2	151.4	151.6
625450	172.5	174.9	177.3	176.3	173.9	171.5	169.1	166.7	164.3	161.9	159.5	157.1	154.7	152.3	149.9	147.6	147.8	148.0	148.1	148.3	148.5	148.7	148.9	149.1
625500	173.2	175.6	178.0	175.6	173.2	170.8	168.4	166.0	163.6	161.2	158.8	156.4	154.0	151.6	149.2	146.8	145.3	145.5	145.7	145.8	146.0	146.2	146.4	146.6
625550	173.9	176.3	177.3	174.9	172.5	170.1	167.7	165.3	162.9	160.5	158.1	155.7	153.3	150.9	148.5	146.1	143.7	143.0	143.2	143.3	143.5	143.7	143.9	144.1
625600	174.6	177.0	176.6	174.2	171.8	169.4	167.0	164.6	162.2	159.8	157.4	155.0	152.6	150.2	147.8	145.4	143.0	140.6	140.7	140.9	141.0	141.2	141.4	141.6
625650	175.3	177.7	176.0	173.6	171.1	168.7	166.3	163.9	161.5	159.1	156.7	154.3	151.9	149.5	147.1	144.7	142.3	139.9	138.2	138.4	138.5	138.7	138.9	139.1
625700	175.9	177.7	175.3	172.9	170.5	168.1	165.7	163.3	160.8	158.4	156.0	153.6	151.2	148.8	146.4	144.0	141.6	139.2	136.8	135.9	136.1	136.2	136.4	136.6
625750	176.6	177.0	174.6	172.2	169.8	167.4	165.0	162.6	160.2	157.8	155.4	152.9	150.5	148.1	145.7	143.3	140.9	138.5	136.1	133.7	133.6	133.7	133.9	134.1
625800	177.3	176.3	173.9	171.5	169.1	166.7	164.3	161.9	159.5	157.1	154.7	152.3	149.9	147.5	145.0	142.6	140.2	137.8	135.4	133.0	131.1	131.3	131.4	131.6
625850	178.0	175.6	173.2	170.8	168.4	166.0	163.6	161.2	158.8	156.4	154.0	151.6	149.2	146.8	144.4	142.0	139.6	137.2	134.7	132.3	129.9	128.8	129.0	129.1
625900	177.3	174.9	172.5	170.1	167.7	165.3	162.9	160.5	158.1	155.7	153.3	150.9	148.5	146.1	143.7	141.3	138.9	136.5	134.1	131.7	129.3	126.8	126.5	126.6
625950	176.6	174.2	171.8	169.4	167.0	164.6	162.2	159.8	157.4	155.0	152.6	150.2	147.8	145.4	143.0	140.6	138.2	135.8	133.4	131.0	128.6	126.2	124.0	123.6
626000	175.9	173.5	171.1	168.7	166.3	163.9	161.5	159.1	156.7	154.3	151.9	149.5	147.1	144.7	142.3	139.9	137.5	135.1	132.7	130.3	127.9	125.4	119.1	112.8
626050	175.2	172.8	170.4	168.0	165.6	163.2	160.8	158.4	156.0	153.6	151.2	148.8	146.4	144.0	141.6	139.2	136.8	134.4	132.0	127.1	120.8	114.5	108.3	102.0
626100	174.5	172.1	169.7	167.3	164.9	162.5	160.1	157.7	155.3	152.9	150.5	148.1	145.7	143.3	140.9	138.5	135.2	128.9	122.6	116.3	110.0	103.7	97.5	91.2
626150	173.8	171.4	169.0	166.6	164.2	161.8	159.4	157.0	154.6	152.2	149.8	147.4	145.0	142.6	136.9	130.6	124.3	118.1	111.8	105.5	99.2	92.9	86.6	80.4
626200	173.1	170.7	168.3	165.9	163.5	161.1	158.7	156.3	153.9	151.5	149.1	145.0	138.7	132.4	126.1	119.8	113.5	107.3	101.0	94.7	88.4	82.1	83.6	83.6
626250	172.4	170.0	167.6	165.2	162.8	160.4	158.0	155.6	153.0	146.7	140.4	134.1	127.9	121.6	115.3	109.0	102.7	96.5	90.2	83.9	81.2	85.0	80.0	80.0
626300	171.7	169.3	166.9	164.5	162.1	159.7	154.8	148.5	142.2	135.9	129.6	123.3	117.1	110.8	104.5	98.2	91.9	85.6	80.0	85.0	80.0	80.0	80.0	80.0
626350	171.0	168.6	166.2	162.8	156.5	150.2	144.0	137.7	131.4	125.1	118.8	112.5	106.3	100.0	93.7	87.4	81.1	84.9	82.6	80.0	80.0	80.0	80.0	80.0
626400	170.3	164.6	158.3	152.0	145.7	139.4	133.1	126.9	120.6	114.3	108.0	101.7	95.4	89.2	82.9	82.5	84.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	160.0	153.8	147.5	141.2	134.9	128.6	122.3	116.1	109.8	103.5	97.2	90.9	84.6	80.2	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	149.2	142.9	136.7	130.4	124.1	117.8	111.5	105.2	99.0	92.7	86.4	80.1	85.0	81.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	138.4	132.1	125.9	119.6	113.3	107.0	100.7	94.4	88.2	81.9	83.9	83.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	127.6	121.3	115.1	108.8	102.5	96.2	89.9	83.6	81.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	116.8	110.5	104.2	98.0	91.7	85.4	80.0	85.0	80.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	106.0	99.7	93.4	87.2	80.9	85.0	82.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	95.2	88.9	82.6	82.9	84.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	84.4	80.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	85.0	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Cover Elevations (sheet 5 of 6)

EASTING (ft) \ NORTHING (ft)	1353200	1353150	1353100	1353050	1353000	1352950	1352900	1352850	1352800	1352750	1352700	1352650	1352600	1352550	1352500	1352450	1352400	1352350	1352300	1352250	1352200	1352150	1352100	1352050
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	81.5	81.4	81.4	81.4	81.4	81.3	81.3	81.3	81.3	81.3	81.2	81.2	81.2	81.2	81.2	81.1	81.1	81.1	81.1	81.1	81.0	81.0	81.0	81.0
623900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623950	92.5	92.4	92.4	92.4	92.4	92.3	92.3	92.3	92.3	92.3	92.2	92.2	92.2	92.2	92.2	92.1	92.1	92.1	92.1	92.1	92.0	92.0	92.0	92.0
624000	105.0	104.9	104.9	104.9	104.9	104.8	104.8	104.8	104.8	104.8	104.7	104.7	104.7	104.7	104.7	104.7	104.6	104.6	104.6	104.6	104.6	104.5	104.5	104.5
624050	117.5	117.4	117.4	117.4	117.4	117.3	117.3	117.3	117.3	117.3	117.2	117.2	117.2	117.2	117.2	117.1	117.1	117.1	117.1	117.1	117.0	117.0	117.0	117.0
624100	130.0	129.9	129.9	129.9	129.9	129.8	129.8	129.8	129.8	129.8	129.7	129.7	129.7	129.7	129.7	129.6	129.6	129.6	129.6	129.6	129.5	129.5	129.5	129.5
624150	141.6	141.3	140.9	140.9	140.7	140.6	140.5	140.2	140.4	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.2	140.2	140.2	140.2	140.2	140.2
624200	144.4	144.2	144.0	143.9	143.7	143.5	143.3	143.1	142.9	142.8	142.8	142.8	142.8	142.8	142.8	142.8	142.8	142.7	142.7	142.7	142.7	142.7	142.7	142.7
624250	146.9	146.7	146.5	146.3	146.2	146.0	145.8	145.6	145.4	145.3	145.3	145.3	145.3	145.3	145.3	145.3	145.3	145.2	145.2	145.2	145.2	145.2	145.2	145.2
624300	149.4	149.2	149.0	148.8	148.7	148.5	148.3	148.1	147.9	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.7	147.7	147.7	147.7	147.7	147.7	147.7
624350	151.9	151.7	151.5	151.3	151.1	151.0	150.8	150.6	150.4	150.3	150.3	150.3	150.3	150.3	150.3	150.3	150.3	150.3	150.2	150.2	150.2	150.2	150.2	150.2
624400	154.4	154.2	154.0	153.8	153.6	153.4	153.3	153.1	152.9	152.8	152.8	152.8	152.8	152.8	152.8	152.8	152.8	152.8	152.7	152.7	152.7	152.7	152.7	152.7
624450	156.9	156.7	156.5	156.3	156.1	155.9	155.8	155.6	155.4	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.2	155.2	155.2	155.2	155.2	155.2	155.2
624500	159.4	159.2	159.0	158.8	158.6	158.4	158.2	158.1	157.9	157.8	157.8	157.8	157.8	157.8	157.8	157.8	157.8	157.7	157.7	157.7	157.7	157.7	157.7	157.7
624550	161.9	161.7	161.5	161.3	161.1	160.9	160.7	160.6	160.4	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.2	160.2	160.2	160.2	160.2	160.2	160.2
624600	164.4	164.2	164.0	163.8	163.6	163.4	163.2	163.0	162.9	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.7	162.7	162.7	162.7	162.7	162.7	162.7
624650	166.9	166.7	166.5	166.3	166.1	165.9	165.7	165.5	165.4	165.3	165.3	165.3	165.3	165.3	165.3	165.3	165.3	165.2	165.2	165.2	165.2	165.2	165.2	165.2
624700	169.3	169.2	169.0	168.8	168.6	168.4	168.2	168.0	167.8	167.8	167.8	167.8	167.8	167.8	167.8	167.8	167.8	167.7	167.7	167.7	167.7	167.7	167.7	167.7
624750	171.8	171.7	171.5	171.3	171.1	170.9	170.7	170.5	170.3	170.3	170.3	170.3	170.3	170.3	170.3	170.3	170.3	170.2	170.2	170.2	170.2	170.2	170.2	170.2
624800	174.3	174.1	174.0	173.8	173.6	173.4	173.2	173.0	172.8	172.8	172.8	172.8	172.8	172.8	172.8	172.8	172.8	172.7	172.7	172.7	172.7	172.7	172.7	172.7
624850	176.8	176.6	176.4	176.3	176.1	175.9	175.7	175.5	175.3	175.3	175.3	175.3	175.3	175.3	175.3	175.3	175.3	175.3	175.2	175.2	175.2	175.2	175.2	175.2
624900	176.7	176.9	177.1	177.3	177.4	177.6	177.8	178.0	177.8	177.8	177.8	177.8	177.8	177.8	177.8	177.8	177.8	177.8	177.7	177.7	177.7	177.7	177.7	177.7
624950	174.2	174.4	174.6	174.8	175.0	175.1	175.3	175.5	175.7	175.7	175.7	175.7	175.7	175.7	175.7	175.7	175.7	175.8	175.8	175.8	175.8	175.8	175.8	175.8
625000	171.7	171.9	172.1	172.3	172.5	172.6	172.8	173.0	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.3	173.3	173.3	173.3	173.3	173.3	173.3	173.3
625050	169.2	169.4	169.6	169.8	170.0	170.2	170.3	170.5	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.8	170.8	170.8	170.8	170.8	170.8	170.8	170.8
625100	166.7	166.9	167.1	167.3	167.5	167.7	167.8	168.0	168.2	168.2	168.2	168.2	168.2	168.2	168.2	168.2	168.3	168.3	168.3	168.3	168.3	168.3	168.3	168.3
625150	164.2	164.4	164.6	164.8	165.0	165.2	165.4	165.5	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.8	165.8	165.8	165.8	165.8	165.8	165.8	165.8
625200	161.7	161.9	162.1	162.3	162.5	162.7	162.9	163.0	163.2	163.2	163.2	163.2	163.2	163.2	163.2	163.2	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3
625250	159.2	159.4	159.6	159.8	160.0	160.2	160.4	160.6	160.7	160.7	160.7	160.7	160.7	160.7	160.7	160.7	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8
625300	156.7	156.9	157.1	157.3	157.5	157.7	157.9	158.1	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.3	158.3	158.3	158.3	158.3	158.3	158.3	158.3	158.3
625350	154.3	154.4	154.6	154.8	155.0	155.2	155.4	155.6	155.7	155.7	155.7	155.7	155.7	155.7	155.7	155.8	155.8	155.8	155.8	155.8	155.8	155.8	155.8	155.8
625400	151.8	152.0	152.1	152.3	152.5	152.7	152.9	153.1	153.2	153.2	153.2	153.2	153.2	153.2	153.2	153.3	153.3	153.3	153.3	153.3	153.3	153.3	153.3	153.3
625450	149.3	149.5	149.6	149.8	150.0	150.2	150.4	150.6	150.7	150.7	150.7	150.7	150.7	150.7	150.7	150.8	150.8	150.8	150.8	150.8	150.8	150.8	150.8	150.8
625500	146.8	147.0	147.2	147.3	147.5	147.7	147.9	148.1	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.3	148.3	148.3	148.3	148.3	148.3	148.3	148.3	148.3
625550	144.3	144.5	144.7	144.8	145.0	145.2	145.4	145.6	145.7	145.7	145.7	145.7	145.7	145.7	145.7	145.8	145.8	145.8	145.8	145.8	145.8	145.8	145.8	145.8
625600	141.8	142.0	142.2	142.4	142.5	142.7	142.9	143.1	143.2	143.2	143.2	143.2	143.2	143.2	143.2	143.3	143.3	143.3	143.3	143.3	143.3	143.3	143.3	143.3
625650	139.3	139.5	139.7	139.9	140.0	140.2	140.4	140.6	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.9	140.9	140.9	140.9	140.9	140.9	140.9	140.9	140.9
625700	136.8	137.0	137.2	137.4	137.6	137.7	136.0	133.2	132.1	132.0	132.0	132.0	132.1	132.1	132.1	132.1	132.1	132.2	132.2	132.2	132.2	132.3	132.3	132.3
625750	134.3	134.5	134.7	134.9	135.1	129.3	124.1	120.9	119.6	119.5	119.5	119.5	119.5	119.6	119.6	119.6	119.5	119.6	119.7	119.7	119.7	119.7	119.8	119.8
625800	131.8	132.0	132.2	130.9	124.6	118.3	112.6	108.6	107.1	107.0	107.0	107.0	107.1	107.1	107.1	107.1	107.1	107.2	107.2	107.2	107.2	107.3	107.3	107.3
625850	129.3	129.5	126.4	120.1	113.8	107.5	101.3	96.5	94.6	94.5	94.5	94.5	94.6	94.6	94.6	94.6	94.6	94.7	94.7	94.7	94.7	94.8	94.8	94.8
625900	126.8	121.8	115.5	109.3	103.0	96.7	90.4	84.8	82.1	82.0	82.0	82.0	82.1	82.1	82.1	82.1	82.1	82.2	82.2	82.2	82.2	82.3	82.3	82.3
625950	117.3	111.0	104.7	98.5	92.2	85.9	80.0	85.0	83.6	83.5	83.5	83.5	83.6	83.6	83.6	83.6	83.6	83.7	83.7	83.7	83.7	83.8	85.0	83.8
626000	106.5	100.2	93.9	87.7	81.4	84.6	82.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.3	83.0	84.7	83.3
626050	95.7	89.4	83.1	82.2	84.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.2	82.9	84.6	83.3
626100	84.9	80.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.1	82.8	84.4	83.3
626150	85.0	81.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.0	82.7	84.2	83.2
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.9	82.6	83.9	83.2
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.8	82.5	83.7	83.1
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.7	82.4	83.4	83.1
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.7	82.4	83.2	83.0
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.6	82.3	82.9	82.9
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.5	82.2	82.7	82.7
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.4	82.1	82.5	82.5
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.3	82.0	82.2	82.2
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.2	81.9	82.0	82.0
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.1	81.7	81.7	81.7
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.5	81.5	81.5
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.2	81.2	81.2
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.0	81.0	81.0
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.7	80.7	80.7
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.5	80.5	80.5
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.2	80.2	80.2
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

4/4/104

Cover Elevations (sheet 6 of 6)

EASTING (ft) \ NORTHING (ft)	1352000	1351950	1351900	1351850	1351800	1351750	1351700	1351650	1351600	1351550	1351500	1351450	1351400	1351350	1351300	1351250	1351200	1351150	1351100
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623900	80.0	83.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623950	91.1	87.7	81.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624000	103.3	99.0	92.1	83.6	84.7	80.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624050	115.4	109.6	101.3	92.6	84.0	84.2	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624100	126.9	118.9	110.3	101.7	93.0	84.4	83.6	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624150	136.6	128.0	119.4	110.7	102.1	93.5	84.8	83.1	81.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624200	142.7	137.0	128.4	119.8	111.1	102.5	93.9	85.2	82.6	82.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624250	145.2	145.2	137.4	128.8	120.2	111.5	102.9	94.3	85.6	82.0	82.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624300	147.7	147.7	146.5	137.8	129.2	120.6	111.9	103.3	94.7	86.0	81.5	82.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624350	150.2	150.2	150.2	146.9	138.2	129.6	121.0	112.3	103.7	95.1	86.0	83.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624400	152.7	152.7	152.7	152.7	147.3	138.6	130.0	121.4	112.7	103.5	92.9	81.6	84.1	80.0	80.0	80.0	80.0	80.0	80.0
624450	155.2	155.2	155.2	155.2	155.2	147.7	139.0	130.4	120.8	109.5	97.6	85.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624500	157.7	157.7	157.7	157.7	157.7	156.7	148.1	136.9	124.4	111.9	99.4	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624550	160.2	160.2	160.2	160.2	160.2	160.2	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624600	162.7	162.7	162.7	162.7	162.7	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624650	165.2	165.2	165.2	165.2	165.2	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624700	167.7	167.7	167.7	167.7	167.7	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624750	170.2	170.2	170.2	170.2	170.2	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624800	172.7	172.7	172.7	172.7	172.7	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624850	175.2	175.2	175.2	175.2	174.5	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624900	177.7	177.7	177.7	177.7	174.5	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624950	175.8	175.8	175.8	175.8	174.5	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625000	173.3	173.3	173.3	173.3	173.3	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625050	170.8	170.8	170.8	170.8	170.8	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625100	168.3	168.3	168.3	168.3	168.3	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625150	165.8	165.8	165.8	165.8	165.8	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625200	163.3	163.3	163.3	163.3	163.3	162.0	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625250	160.8	160.8	160.8	160.8	160.8	160.8	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625300	158.3	158.3	158.3	158.3	158.3	158.3	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625350	155.8	155.8	155.8	155.8	155.8	155.8	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625400	153.3	153.3	153.3	153.3	153.3	153.3	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625450	150.8	150.8	150.8	150.8	150.8	150.8	149.5	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625500	148.3	148.3	148.3	148.3	148.3	148.3	148.3	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625550	145.8	145.8	145.8	145.8	145.8	145.8	145.8	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	143.3	143.3	143.3	143.3	143.3	143.3	143.3	137.0	124.5	112.0	99.5	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	140.9	140.9	140.9	140.9	140.9	140.9	140.9	136.8	124.3	111.9	99.4	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	132.3	132.3	132.4	132.4	132.4	132.4	132.4	129.7	120.5	109.3	97.5	85.4	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	119.8	119.8	119.9	119.9	119.9	119.9	119.9	118.3	112.1	103.0	92.6	81.4	83.8	80.0	80.0	80.0	80.0	80.0	80.0
625800	107.3	107.3	107.4	107.4	107.4	107.4	107.4	106.3	101.8	94.6	85.5	84.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	94.8	94.8	94.9	94.9	94.9	94.9	94.9	94.1	90.5	84.6	82.2	81.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	82.3	82.3	82.4	82.4	82.4	82.4	82.4	81.7	80.0	85.0	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	83.8	83.8	83.9	83.9	83.9	83.9	83.9	83.3	80.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	81.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	81.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	81.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	81.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	81.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	81.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

ATTACHMENT 2

Subgrade Elevations: Pre-Settlement

Subgrade Elevations: Pre-Settlement (sheet 1 of 6)

EASTING (ft)	NORTHING (ft) 1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650	1357600	1357550	1357500	1357450	1357400	1357350	1357300	1357250	1357200	1357150	1357100	1357050	1357000	1356950	1356900	1356850
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.0	83.2	83.2	83.2	83.2	83.2	83.2	83.1	83.1	83.1	83.1	83.1	83.1	83.0	83.0
623900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.5	80.3	81.7	81.7	81.7	81.7	81.7	81.7	81.6	81.6	81.6	81.6	81.6	81.5	81.5
623950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.4	88.0	92.4	94.2	94.2	94.2	94.2	94.2	94.2	94.1	94.1	94.1	94.1	94.1	94.0	94.0
624000	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.5	90.9	94.9	87.5	84.4	84.3	84.4	84.4	84.4	85.9	84.5	84.5	84.5	84.6	84.6	84.6	85.0
624050	80.0	80.0	80.0	80.0	80.0	80.0	82.1	88.3	94.7	81.9	80.8	81.1	81.4	81.8	82.2	82.4	82.7	81.6	82.0	82.2	82.9	83.5	84.2	84.4
624100	80.0	80.0	80.0	80.0	80.0	82.5	80.8	93.0	86.9	80.8	82.1	82.4	82.6	82.9	83.1	83.4	83.6	83.7	84.1	84.4	84.6	84.9	85.1	85.4
624150	80.0	80.0	80.0	80.0	80.0	83.8	82.3	94.8	83.6	81.2	82.4	83.4	83.6	83.9	84.1	84.4	84.6	84.8	85.1	85.3	85.6	85.8	86.1	86.3
624200	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	83.4	81.3	82.7	83.6	84.8	84.8	85.1	85.3	85.6	85.8	86.1	86.3	86.6	86.8	87.1	87.3
624250	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	83.4	81.9	82.9	83.9	84.9	85.8	86.0	86.3	86.5	86.8	87.0	87.3	87.5	87.8	88.0	88.3
624300	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	83.4	82.2	83.2	84.1	85.1	86.1	87.0	87.3	87.5	87.8	88.0	88.3	88.5	88.7	89.0	89.2
624350	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	83.8	82.5	83.4	84.4	85.4	86.3	87.3	88.2	88.5	88.7	89.0	89.2	89.5	89.7	90.0	90.2
624400	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	85.0	82.7	83.7	84.6	85.6	86.6	87.6	88.5	89.4	89.7	89.9	90.2	90.4	90.7	90.9	91.2
624450	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	83.4	81.7	83.9	84.9	85.9	86.8	87.8	88.8	89.7	90.7	90.9	91.2	91.4	91.7	91.9	92.2
624500	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.9	83.4	81.9	84.2	85.1	86.1	87.1	88.1	89.0	90.0	91.0	91.9	92.1	92.4	92.6	92.9	93.1
624550	80.0	80.0	80.0	80.0	80.0	83.5	81.8	94.3	84.7	82.2	84.4	85.4	86.4	87.3	88.3	89.3	90.2	91.2	92.2	93.1	93.3	93.6	93.8	94.1
624600	80.0	80.0	80.0	80.0	80.0	81.1	80.0	90.8	90.8	82.7	84.7	85.6	86.6	87.6	88.1	89.1	90.0	90.9	92.4	93.4	93.2	94.6	94.8	95.1
624650	80.0	80.0	80.0	80.0	80.0	80.0	85.0	85.6	96.0	85.7	84.9	85.9	85.5	87.8	86.7	88.8	89.2	88.9	92.7	93.6	91.4	94.9	95.8	95.6
624700	80.0	80.0	80.0	80.0	80.0	82.9	80.1	91.4	90.6	82.8	84.8	83.8	86.0	85.4	86.8	87.1	87.6	89.9	92.0	89.9	92.3	91.9	91.5	91.5
624750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	86.0	96.0	82.2	82.8	83.2	83.9	84.7	85.5	86.2	87.0	87.8	88.5	89.0	89.6	90.1	90.7
624800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.3	80.5	91.8	89.3	81.4	82.5	83.3	84.1	84.8	85.8	86.4	87.1	87.8	88.2	88.7	89.3	89.8
624850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.5	86.4	96.0	81.5	81.7	82.7	83.4	84.2	84.9	85.7	86.2	86.8	87.3	87.9	88.4	89.0
624900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.7	80.9	92.2	88.8	80.8	82.0	82.8	83.5	84.3	84.9	85.4	86.0	86.5	87.0	87.6	88.1
624950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.0	86.8	96.0	81.0	81.2	82.1	82.9	83.5	84.0	84.6	85.1	85.7	86.2	86.8	87.3	87.3
625000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.1	81.3	92.6	88.2	80.5	81.4	82.1	82.6	83.2	83.7	84.3	84.8	85.4	85.9	86.5	86.5
625050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.5	87.1	96.0	82.5	80.6	81.1	81.7	82.3	82.9	83.4	84.0	84.5	85.1	85.6	85.6
625100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.2	80.7	90.4	95.0	86.8	81.2	80.3	81.1	82.1	82.6	83.1	83.7	84.2	84.8	84.8
625150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.3	88.2	93.3	96.0	91.7	86.4	81.1	81.4	82.3	82.9	82.7	83.9	83.9
625200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.9	81.4	85.4	89.4	93.4	96.0	91.6	87.1	92.2	80.7	81.6	81.6
625250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.6	85.0	81.3	81.5	85.5	89.5	93.4	96.0	91.5	86.2
625300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.7	85.0	81.2	81.6	85.6	89.5	93.5
625350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.7	85.0	81.1	81.7
625400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.8
625450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

47/104

Subgrade Elevations: Pre-Settlement (sheet 2 of 6)

EASTING (ft)	NORTHING (ft)																								
	1356800	1356750	1356700	1356650	1356600	1356550	1356500	1356450	1356400	1356350	1356300	1356250	1356200	1356150	1356100	1356050	1356000	1355950	1355900	1355850	1355800	1355750	1355700	1355650
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	83.0	83.0	82.9	82.9	82.9	82.9	82.9	82.8	82.8	82.8	82.8	82.8	82.7	82.7	82.7	82.7	82.7	82.6	82.6	82.6	82.6	82.5	82.5	82.5
623900	81.5	81.5	81.4	81.4	81.4	81.4	81.4	81.3	81.3	81.3	81.3	81.3	81.2	81.2	81.2	81.2	81.2	81.1	81.1	81.1	81.1	81.0	81.0	81.0
623950	94.0	94.0	93.9	93.9	93.9	93.9	93.9	93.8	93.8	93.8	93.8	93.8	93.7	93.7	93.7	93.7	93.7	93.6	93.6	93.6	93.6	93.5	93.5	93.5
624000	87.5	84.7	84.7	84.8	84.8	84.8	84.9	85.2	86.3	84.9	85.0	86.5	87.3	86.2	89.2	85.1	85.1	88.6	89.6	85.2	85.3	86.0	86.7	85.3
624050	84.7	83.7	82.5	83.3	83.6	85.2	83.9	81.2	81.5	81.6	82.4	84.2	84.9	83.7	86.2	83.2	84.3	88.2	88.8	82.2	80.8	81.9	82.6	82.1
624100	85.6	85.9	86.1	86.4	85.3	84.2	83.0	82.3	83.0	83.2	84.3	85.0	85.6	86.3	86.9	86.3	88.3	88.9	89.6	87.8	82.0	82.7	83.4	84.0
624150	86.6	86.8	87.1	87.3	86.6	83.4	85.9	83.1	83.7	84.4	85.0	85.7	86.4	87.0	87.7	88.3	89.0	89.7	87.0	82.1	82.8	83.4	84.1	84.8
624200	87.6	87.8	88.1	88.3	88.5	88.8	86.8	83.8	84.5	85.1	85.8	86.5	87.1	87.8	88.4	89.1	89.8	90.4	91.1	87.5	83.5	84.2	84.9	85.5
624250	88.5	88.8	89.0	89.3	89.5	89.8	85.6	84.6	85.2	85.9	86.6	87.2	87.9	88.5	89.2	89.9	90.5	91.2	91.8	87.5	84.3	84.9	85.6	86.3
624300	89.5	89.7	90.0	90.2	90.5	87.5	84.7	85.3	86.0	86.6	87.3	88.0	88.6	89.3	89.9	90.6	91.3	91.9	90.4	85.1	85.0	85.7	86.4	87.0
624350	90.5	90.7	91.0	91.2	91.5	91.7	88.8	86.1	86.7	87.4	88.1	88.7	89.4	90.0	90.7	91.4	92.0	92.7	93.3	91.7	85.8	86.5	87.1	87.8
624400	91.4	91.7	91.9	92.2	91.3	88.2	86.2	86.8	87.5	88.1	88.8	89.5	90.1	90.8	91.4	92.1	92.8	93.4	93.3	87.1	86.5	87.2	87.9	88.5
624450	92.4	92.6	92.9	93.1	92.2	90.9	87.8	87.6	88.2	88.9	89.6	90.2	90.9	91.5	92.2	92.9	93.5	94.2	94.3	89.2	87.3	88.0	88.6	89.3
624500	93.4	93.6	93.9	94.1	93.0	91.8	89.6	88.3	89.0	89.6	90.3	91.0	91.6	92.3	92.9	93.6	94.3	94.9	95.6	93.8	88.0	88.7	89.4	90.0
624550	94.3	94.6	94.8	95.1	94.3	89.9	88.4	89.1	89.7	90.4	91.1	91.7	92.4	93.0	93.7	94.4	95.0	95.7	92.9	88.1	88.8	89.5	90.1	90.8
624600	95.3	95.6	95.8	95.9	95.3	94.5	92.9	89.8	90.5	91.1	91.8	92.5	93.1	93.8	94.4	95.1	95.8	96.4	97.1	94.0	90.1	90.2	90.9	91.5
624650	94.3	95.1	94.9	94.5	94.9	92.0	90.3	90.0	91.2	91.9	92.1	93.2	93.9	94.2	95.2	95.9	96.4	97.2	97.8	93.4	90.3	91.0	91.6	92.1
624700	92.1	92.9	93.1	93.7	94.2	92.1	90.5	90.1	91.2	91.8	92.1	93.2	93.8	94.2	95.1	95.8	96.4	97.1	97.8	93.8	90.5	91.7	92.0	92.0
624750	91.2	91.7	92.3	92.8	93.4	93.9	92.2	89.8	90.4	91.1	91.7	92.4	93.1	93.7	94.4	95.1	95.7	96.4	96.8	93.7	90.4	90.3	91.2	91.5
624800	90.4	90.9	91.4	92.0	92.5	90.4	88.3	89.0	89.7	90.3	91.0	91.7	92.3	93.0	93.6	94.3	95.0	95.6	93.3	88.1	88.8	89.4	90.1	90.7
624850	89.5	90.1	90.6	91.2	91.7	91.3	89.4	88.3	88.9	89.6	90.2	90.9	91.6	92.2	92.9	93.6	94.2	94.9	95.5	94.1	88.0	88.7	89.3	90.0
624900	88.7	89.2	89.8	90.3	90.9	91.2	86.8	87.5	88.2	88.8	89.5	90.2	90.8	91.5	92.1	92.8	93.5	94.1	94.8	89.1	87.3	87.9	88.6	89.2
624950	87.8	88.4	88.9	89.5	89.9	88.0	86.1	86.8	87.4	88.1	88.7	89.4	90.1	90.7	91.4	92.1	92.7	93.4	93.6	87.5	86.5	87.2	87.8	88.5
625000	87.0	87.5	88.1	88.6	89.2	89.7	87.6	86.0	86.7	87.3	88.0	88.7	89.3	90.0	90.6	91.3	92.0	92.6	93.3	91.6	87.0	86.4	87.1	87.7
625050	86.2	86.7	87.3	87.8	88.3	86.4	84.6	85.3	85.9	86.6	87.2	87.9	88.6	89.2	89.9	90.6	91.2	91.9	92.3	85.0	85.0	85.7	86.3	87.0
625100	85.3	85.9	86.4	87.0	87.5	87.8	84.8	84.5	85.2	85.8	86.5	87.2	87.8	88.5	89.2	89.8	90.5	91.1	91.8	87.8	84.3	84.9	85.6	86.3
625150	84.5	85.0	85.6	86.1	86.7	86.3	83.8	83.8	84.4	85.1	85.8	86.4	87.1	87.7	88.4	89.1	89.7	90.4	91.1	87.0	83.5	84.2	84.8	85.5
625200	83.0	84.2	84.7	85.3	85.8	83.7	82.4	83.0	83.7	84.3	85.0	85.7	86.3	87.0	87.7	88.3	89.0	89.6	87.2	82.1	82.8	83.4	84.1	84.8
625250	80.9	81.1	83.5	84.4	85.0	85.5	83.5	82.3	82.9	83.6	84.3	84.9	85.6	86.2	86.9	87.0	88.2	88.8	89.6	88.0	82.0	82.7	83.3	84.0
625300	98.0	91.4	86.1	81.5	84.2	81.8	80.9	81.1	82.2	82.8	82.0	84.2	84.8	83.2	86.2	84.1	84.6	88.1	88.8	84.5	81.1	81.8	82.6	82.1
625350	85.6	89.6	93.6	96.0	92.5	87.2	86.6	86.6	87.8	87.3	86.5	86.5	88.9	87.2	89.9	88.8	86.4	86.3	91.2	87.5	86.3	86.2	87.4	86.5
625400	85.0	81.0	81.8	85.7	89.7	92.2	92.5	92.5	92.6	92.6	92.6	92.6	92.7	92.7	92.7	92.7	92.7	92.8	92.8	92.8	92.8	92.8	92.9	92.9
625450	80.0	80.0	83.9	85.0	81.1	80.0	80.0	80.0	80.1	80.1	80.1	80.1	80.2	80.2	80.2	80.2	80.2	80.3	80.3	80.3	80.3	80.3	80.4	80.4
625500	80.0	80.0	80.0	80.0	80.0	81.2	81.5	81.5	81.6	81.6	81.6	81.6	81.7	81.7	81.7	81.7	81.7	81.8	81.8	81.8	81.8	81.8	81.9	81.9
625550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Subgrade Elevations: Pre-Settlement (sheet 3 of 6)

EASTING (ft)	NORTHING (ft)																							
	1356600	1356500	1356400	1356300	1356200	1356100	1356000	1355900	1355800	1355700	1355600	1355500	1355400	1355300	1355200	1355100	1355000	1354900	1354800	1354700	1354600	1354500	1354400	1354300
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	82.5	82.5	82.4	82.4	82.4	82.4	82.4	82.3	82.3	82.3	82.3	82.2	82.2	82.2	82.2	82.2	82.1	82.1	82.1	82.1	82.1	82.0	82.0	82.0
623900	81.0	81.0	80.9	80.9	80.9	80.9	80.9	80.8	80.8	80.8	80.8	80.8	80.7	80.7	80.7	80.7	80.7	80.7	80.6	80.6	80.6	80.6	80.6	80.5
623950	93.5	93.5	93.4	93.4	93.4	93.4	93.4	93.3	93.3	93.3	93.3	93.2	93.2	93.2	93.2	93.2	93.2	93.1	93.1	93.1	93.1	93.1	93.0	93.0
624000	85.4	88.1	86.5	87.8	89.4	85.5	85.5	90.8	87.5	86.4	86.9	85.7	85.7	88.3	86.6	85.8	85.8	89.4	86.4	85.9	85.9	85.9	87.2	86.3
624050	83.0	84.6	85.2	85.4	86.5	84.3	85.5	88.5	82.3	81.5	82.4	82.0	82.6	84.4	85.0	83.3	86.3	85.2	84.3	85.5	80.9	82.2	81.2	82.2
624100	84.7	85.3	86.0	86.7	87.3	87.9	88.6	89.3	83.2	82.5	83.1	83.6	84.5	85.1	85.8	86.4	87.1	87.8	86.3	83.6	82.3	82.9	82.9	84.2
624150	85.4	86.1	86.7	87.4	88.1	88.7	89.4	87.5	82.6	83.2	83.9	84.5	85.2	85.9	86.5	87.2	87.8	88.5	86.9	84.8	83.0	83.7	84.3	85.0
624200	86.2	86.8	87.5	88.2	88.8	89.5	88.8	86.4	83.3	84.0	84.6	85.3	86.0	86.6	87.3	87.9	88.6	89.3	89.9	87.7	83.8	84.4	85.1	85.7
624250	86.9	87.6	88.2	88.9	89.6	90.2	90.9	90.4	84.1	84.7	85.4	86.1	86.7	87.4	88.0	88.7	89.4	90.0	87.3	84.6	84.5	85.2	85.8	86.5
624300	87.7	88.3	89.0	89.7	90.3	91.0	91.6	85.8	84.8	85.5	86.1	86.8	87.5	88.1	88.8	89.4	90.1	90.8	91.4	85.7	85.3	85.9	86.6	87.2
624350	88.4	89.1	89.8	90.4	91.1	91.7	92.4	89.3	85.6	86.2	86.9	87.6	88.2	88.9	89.5	90.2	90.9	91.5	91.3	88.6	86.0	86.7	87.3	88.0
624400	89.2	89.8	90.5	91.2	91.8	92.5	93.1	93.8	86.3	87.0	87.6	88.3	89.0	89.6	90.3	90.9	91.6	90.9	88.3	86.1	86.8	87.4	88.1	88.7
624450	89.9	90.6	91.3	91.9	92.6	93.2	93.9	89.2	87.1	87.7	88.4	89.1	89.7	90.4	91.0	91.7	92.4	93.0	93.7	87.7	87.5	88.2	88.8	89.5
624500	90.7	91.3	92.0	92.7	93.3	94.0	94.6	93.2	90.1	88.5	89.1	89.8	90.5	91.1	91.8	92.4	93.1	93.8	92.3	89.6	88.3	88.9	89.6	90.2
624550	91.4	92.1	92.8	93.4	94.1	94.7	95.4	93.0	88.6	89.2	89.9	90.6	91.2	91.9	92.5	93.2	93.9	94.5	93.5	88.4	89.0	89.7	90.3	91.0
624600	92.2	92.8	93.5	94.2	94.8	95.5	96.1	92.5	89.3	90.0	90.6	91.3	92.0	92.6	93.3	93.9	94.6	95.3	95.9	93.6	91.0	90.4	91.1	91.8
624650	92.9	93.6	94.3	94.9	95.6	96.2	96.9	96.5	90.1	90.7	91.4	92.1	92.7	93.4	94.0	94.7	95.4	96.0	93.3	90.6	90.5	91.2	91.8	92.5
624700	93.0	94.3	95.0	95.7	96.3	97.0	97.7	91.8	90.8	91.5	92.2	92.8	93.5	94.1	94.8	95.5	96.1	96.8	93.1	90.6	91.3	91.9	92.6	93.3
624750	93.4	93.6	95.8	95.3	96.2	97.7	98.4	95.8	93.4	92.2	92.9	93.6	94.2	94.9	95.5	96.2	96.9	97.5	97.3	94.8	92.0	92.7	93.3	94.0
624800	91.4	92.2	94.2	93.4	94.5	96.3	98.6	99.8	94.2	93.0	93.7	94.3	95.0	95.6	96.3	97.0	97.6	97.0	94.2	92.1	92.8	93.4	94.1	94.8
624850	90.7	91.3	92.0	92.6	93.3	94.0	96.4	97.0	96.0	94.4	94.4	95.1	95.7	96.4	97.0	97.7	98.4	99.0	99.7	92.9	93.5	94.2	94.8	95.5
624900	89.9	90.6	91.2	91.9	92.6	93.2	93.9	94.5	95.2	95.9	95.1	95.8	97.9	97.5	97.8	98.5	99.3	99.8	98.3	95.6	94.3	94.9	95.6	96.3
624950	89.2	89.8	90.5	91.1	91.8	92.5	93.1	93.8	94.5	95.1	95.8	96.5	97.1	97.8	98.0	98.8	99.8	100.0	96.8	94.0	95.0	95.7	96.3	97.0
625000	88.4	89.1	89.7	90.4	91.1	91.7	92.4	93.1	93.7	94.4	95.0	95.7	96.4	97.0	97.7	98.4	98.2	95.0	97.9	94.2	95.8	96.0	97.1	97.8
625050	87.7	88.3	89.0	89.7	90.3	91.0	91.6	92.3	93.0	93.6	94.3	95.0	95.6	96.3	94.9	95.1	96.5	92.1	93.1	94.2	95.6	96.2	97.9	98.0
625100	86.9	87.6	88.2	88.9	89.6	90.2	90.9	91.6	92.2	92.9	93.5	94.2	94.7	93.7	94.8	90.3	91.6	92.3	93.3	94.3	95.2	96.5	97.8	98.4
625150	86.2	86.8	87.5	88.2	88.8	89.5	90.1	90.8	91.5	92.1	92.8	93.5	92.0	89.7	91.3	90.4	91.4	92.4	93.4	94.4	95.4	96.4	97.4	98.7
625200	85.4	86.1	86.7	87.4	88.1	88.7	89.4	90.1	90.7	91.4	92.0	92.7	92.0	88.6	89.6	90.6	91.6	92.6	93.6	94.6	95.5	96.5	97.5	98.5
625250	84.7	85.3	86.0	86.7	87.3	88.0	88.6	89.3	89.7	90.0	86.6	89.5	88.6	88.8	89.6	90.7	91.7	92.7	93.7	94.7	95.7	96.7	97.7	98.7
625300	83.6	84.6	85.2	85.7	86.6	87.2	87.5	88.6	84.4	89.1	86.2	86.9	87.9	88.9	89.9	90.9	91.9	92.9	93.9	94.8	95.8	96.8	97.8	97.6
625350	85.0	80.8	81.2	83.2	85.4	84.3	84.2	86.9	84.4	86.2	86.1	87.1	88.1	89.1	90.0	91.0	92.0	93.0	94.0	95.0	96.0	95.6	98.0	95.2
625400	93.9	96.0	87.7	80.7	82.9	85.2	82.3	83.3	84.3	85.2	86.2	87.2	88.2	89.2	90.2	91.2	92.2	93.2	94.2	95.1	95.6	92.3	94.6	94.4
625450	81.8	86.9	94.7	87.6	81.1	81.3	82.4	83.4	84.4	85.4	86.4	87.4	88.4	89.4	90.3	91.3	92.3	93.3	92.9	91.8	94.7	92.2	93.1	94.1
625500	83.9	81.9	86.9	96.0	81.5	81.5	82.6	83.6	84.6	85.5	86.5	87.5	88.5	89.5	90.5	91.5	89.9	91.5	92.1	90.5	91.4	92.4	93.4	94.4
625550	80.0	83.8	80.9	92.0	89.3	81.1	82.7	83.7	84.7	85.7	86.7	87.7	88.7	89.6	89.0	90.9	89.0	88.8	89.9	90.7	91.7	92.7	93.6	94.6
625600	80.0	80.0	84.5	86.2	96.0	83.9	82.7	83.6	84.8	85.8	86.8	87.8	87.7	89.8	86.1	87.1	88.0	89.0	90.0	90.9	91.9	92.9	93.9	94.8
625650	80.0	80.0	83.3	80.4	91.5	89.9	81.3	84.0	85.0	86.0	87.0	88.0	84.4	85.6	86.3	87.3	88.3	89.2	90.2	91.2	92.2	93.1	94.1	95.1
625700	80.0	80.0	80.0	85.0	85.7	96.0	82.9	84.2	85.1	84.8	83.5	84.8	84.6	85.6	86.6	87.5	88.5	89.5	90.5	91.4	92.4	93.4	94.3	95.3
625750	80.0	80.0	80.0	82.8	80.0	91.0	91.9	83.8	83.4	82.5	82.9	83.9	84.9	85.8	86.8	87.8	88.8	89.7	90.7	91.7	92.6	93.6	94.6	95.5
625800	80.0	80.0	80.0	80.0	85.0	85.2	96.0	84.0	81.0	82.2	83.2	84.1	85.1	86.1	87.0	88.0	89.0	90.0	90.9	91.9	92.9	93.8	94.8	95.8
625850	80.0	80.0	80.0	80.0	82.3	80.0	90.5	91.3	80.6	82.4	83.4	84.4	85.3	86.3	87.3	88.3	89.2	90.2	91.2	92.1	93.1	94.1	95.1	95.9
625900	80.0	80.0	80.0	80.0	80.0	85.0	84.7	95.8	85.3	82.7	83.5	84.6	85.6	86.6	87.5	88.5	89.5	90.4	91.4	92.4	93.4	94.3	95.3	96.0
625950	80.0	80.0	80.0	80.0	80.0	81.8	80.0	90.0	92.4	80.7	83.5	84.9	85.8	86.8	87.8	88.7	89.7	90.7	91.6	92.6	93.6	94.2	95.5	96.0
626000	80.0	80.0	80.0	80.0	80.0	80.0	85.0	84.2	95.3	86.4	84.1	85.1	86.1	87.0	88.0	89.0	89.9	90.9	91.9	92.9	93.8	94.0	94.4	95.1
626050	80.0	80.0	80.0	80.0	80.0	80.0	81.3	80.1	89.5	93.5	80.4	83.7	86.3	87.3	88.2	89.2	90.2	91.2	90.8	91.3	92.2	92.8	93.5	94.1
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	83.7	94.8	85.6	83.0	86.5	87.5	88.5	89.5	89.0	90.5	91.5	90.6	91.4	92.1	92.0	93.1
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.8	80.8	89.0	93.3	83.8	86.8	87.7	87.4	89.2	88.7	89.0	89.6	90.0	90.7	91.5	92.2	92.2
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	83.2	94.3	89.5	84.9	88.0	85.6	87.0	87.7	87.8	88.6	89.3	90.0	90.8	91.5	91.2
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.3	81.5	88.5	93.9	80.4	85.0	84.9	85.7	86.4	87.1	87.9	88.6	89.4	90.1	90.5	90.3
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.7	93.8	86.9	81.9	84.2	85.0	85.7	86.5	87.2	88.0	88.7	89.4	89.6	89.3
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.2	88.0	94.6	80.0	82.7	84.3	85.1	85.8	86.5	87.3	88.0	88.8	88.6	88.3
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.2	93.3	87.6	81.2	83.2	84.4	85.1	85.9	86.6	87.4	87.9	87.6	87.4
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.8	87.5	95.3	80.5	82.5	83.7	84.5	85.2	85.9	86.7	86.9	86.7	86.4
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.6	81.7	92.8	89.2	82.3	83.0	83.8	84.5	85.3	86.0	86.0	85.7	85.4
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.5	87.0	96.0	81.2	82.4	83.1	83.9	84.6	85.3	85.0	84.8	84.5
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.1	81.2	92.3	88.9	81.0	82.5	83.2	83.9	84.3	84.1	83.8	83.5
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.2	86.5	96.0	81.8	81.5	82.5	83.3	83.4	83.1	82.8	82.6
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.6	80.7	91.8	89.6	80.6	81.8	82.6	82.4	82.1	81.7	80.9
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.8	86.0	96.0	83.9	80.7	81.5	81.2	80.7	83.0	91.4	
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.0	80.0	89.5	96.0	87.2	82.6	83.3	89.1	96.0	90.7	
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	80.5	87.7	93.0	95.6	95.2	91.9	86.2	80.0	
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.4	82.4	81.0	83.2	82.8	80.1	84.5	83.1	
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.9	84.7	84.4	82.1	80.0	80.0	
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

49/104

Subgrade Elevations: Pre-Settlement (sheet 4 of 6)

EASTING (ft)	NORTHING (ft) 1354400	1354350	1354300	1354250	1354200	1354150	1354100	1354050	1354000	1353950	1353900	1353850	1353800	1353750	1353700	1353650	1353600	1353550	1353500	1353450	1353400	1353350	1353300	1353250
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	82.0	81.9	81.9	81.9	81.9	81.9	81.8	81.8	81.8	81.8	81.8	81.7	81.7	81.7	81.7	81.6	81.6	81.6	81.6	81.6	81.5	81.5	81.5	81.5
623900	80.5	80.4	80.4	80.4	80.4	80.4	80.3	80.3	80.3	80.3	80.3	80.2	80.2	80.2	80.2	80.1	80.1	80.1	80.1	80.1	80.0	80.0	80.0	80.0
623950	93.0	92.9	92.9	92.9	92.9	92.9	92.8	92.8	92.8	92.8	92.8	92.7	92.7	92.7	92.7	92.6	92.6	92.6	92.6	92.6	92.5	92.5	92.5	92.5
624000	86.1	88.6	88.2	89.6	88.2	86.2	86.3	87.5	86.5	88.7	86.3	86.4	86.4	86.4	86.7	87.7	86.5	86.5	88.4	88.6	87.7	90.2	86.7	86.7
624050	84.1	84.8	83.8	85.8	81.1	81.3	82.0	82.7	82.2	84.0	81.7	82.5	86.0	83.4	81.2	82.3	81.4	82.1	84.3	84.9	83.6	86.2	80.7	80.9
624100	84.9	85.6	86.2	85.1	83.0	82.1	82.8	83.5	84.1	84.8	84.2	85.8	84.2	82.7	82.4	83.0	83.3	84.4	85.0	85.7	86.3	87.0	83.6	82.1
624150	85.7	86.3	87.0	87.6	82.2	82.9	83.5	84.2	84.9	85.5	86.2	84.5	82.5	83.3	83.1	83.8	84.4	85.1	85.8	86.4	87.1	87.7	82.2	82.8
624200	86.4	87.1	87.7	86.0	84.1	83.6	84.3	85.0	85.6	86.3	86.9	87.6	87.4	85.9	83.9	84.5	85.2	85.9	86.5	87.2	87.8	86.5	83.8	83.6
624250	87.2	87.8	88.5	89.1	87.2	84.4	85.0	85.7	86.4	87.0	87.7	88.1	85.8	84.1	84.6	85.3	85.9	86.6	87.3	87.9	88.6	89.2	87.0	84.3
624300	87.9	88.6	89.2	89.9	84.5	85.1	85.8	86.5	87.1	87.8	88.4	89.1	85.2	86.0	85.9	86.0	86.7	87.4	88.0	88.7	89.3	90.0	84.4	85.1
624350	88.7	89.3	90.0	89.1	86.3	85.9	86.6	87.2	87.9	88.5	89.2	89.9	88.8	87.3	86.1	86.8	87.5	88.1	88.8	89.4	90.1	90.2	87.6	85.8
624400	89.4	90.1	90.7	91.4	88.1	86.6	87.3	88.0	88.6	89.3	89.9	88.6	87.0	86.2	86.9	87.5	88.2	88.9	89.5	90.2	90.8	91.5	87.9	86.6
624450	90.2	90.8	91.5	88.9	87.2	87.4	88.1	88.7	89.4	90.0	90.7	91.4	92.0	90.4	87.6	88.3	89.0	89.6	90.3	90.9	91.6	89.6	87.2	87.3
624500	90.9	91.6	92.2	92.0	90.3	88.1	88.8	89.5	90.1	90.8	91.4	91.9	90.2	88.7	88.4	89.0	89.7	90.4	91.0	91.7	92.3	93.0	90.6	88.1
624550	91.7	92.3	93.0	93.6	88.2	88.9	89.6	90.2	90.9	91.5	92.2	92.9	88.9	90.3	89.1	89.8	90.5	91.1	91.8	92.4	93.1	93.8	88.2	88.8
624600	92.4	93.1	93.7	92.4	89.8	88.6	90.3	91.0	91.6	92.3	92.9	93.6	93.4	91.6	89.9	90.5	91.2	91.9	92.5	93.2	93.8	93.7	90.2	89.6
624650	93.2	93.8	94.5	95.1	92.9	90.4	91.1	91.7	92.4	93.0	93.7	93.2	91.6	90.1	90.6	91.3	92.0	92.6	93.3	93.9	94.6	95.3	93.6	90.3
624700	93.9	94.6	95.2	95.9	90.5	91.1	91.8	92.5	93.1	93.8	94.4	95.1	95.4	92.4	91.4	92.0	92.7	93.4	94.0	94.7	95.3	95.9	90.4	91.1
624750	94.7	95.3	96.0	94.9	93.3	91.9	92.6	93.2	93.9	94.5	95.2	95.9	94.8	93.2	92.1	92.8	93.5	94.1	94.8	95.4	96.1	96.4	93.6	91.9
624800	95.4	96.1	96.7	97.4	93.3	92.7	93.3	94.0	94.6	95.3	96.0	96.6	93.0	92.2	92.9	93.6	94.2	94.9	95.5	96.2	96.9	97.5	93.7	92.6
624850	96.2	96.8	97.5	95.6	93.0	93.4	94.1	94.7	95.4	96.0	96.7	97.4	98.0	93.0	93.6	94.3	95.0	95.6	96.3	96.9	97.6	95.3	93.3	93.4
624900	96.9	97.6	98.2	98.7	96.2	94.2	94.8	95.5	96.1	96.8	97.5	97.7	96.2	94.6	94.4	95.1	95.7	96.4	97.0	97.7	98.4	98.7	96.6	94.2
624950	97.7	98.3	99.0	99.7	94.2	94.9	95.6	96.2	96.9	97.5	98.2	98.1	94.6	94.5	95.1	95.8	96.5	97.1	97.8	98.4	99.1	99.8	94.4	95.8
625000	98.4	99.1	99.7	100.4	97.4	95.7	96.3	97.0	97.6	98.3	99.0	99.6	99.4	95.8	95.9	96.6	97.2	97.9	98.5	99.2	99.9	97.5	95.3	97.2
625050	99.2	99.8	100.5	101.2	99.7	96.4	97.1	97.7	98.4	99.0	99.7	99.2	97.6	96.0	96.6	97.3	98.0	96.9	97.0	99.9	96.3	96.8	95.9	97.0
625100	99.8	100.5	101.2	101.9	96.5	97.2	97.8	98.5	99.1	99.8	100.5	101.1	97.7	100.3	100.8	98.3	100.9	98.9	94.2	96.0	94.9	95.3	95.7	96.1
625150	100.0	100.6	102.0	100.7	99.5	97.9	98.0	99.2	99.9	100.0	100.5	101.2	101.5	101.0	101.1	101.3	101.4	101.6	101.8	97.8	93.9	94.4	94.6	95.2
625200	99.5	100.3	100.9	100.3	98.0	98.0	98.0	99.2	99.2	99.1	99.3	99.5	99.7	99.9	100.1	100.3	100.5	100.7	100.9	93.8	93.0	93.4	93.9	94.3
625250	99.6	98.3	97.8	103.2	102.9	97.3	97.5	97.7	97.9	98.1	98.3	98.5	98.7	98.9	99.1	99.3	99.5	99.7	99.9	98.8	92.1	92.5	92.9	93.4
625300	99.8	97.9	97.3	102.7	100.3	96.4	96.6	98.7	96.9	97.1	97.3	97.5	97.7	97.9	98.1	98.3	98.5	98.7	98.9	97.9	92.5	91.6	92.0	92.4
625350	94.6	96.6	98.3	101.9	100.8	99.7	97.5	95.8	96.0	96.2	96.4	96.5	96.7	96.9	97.1	97.3	97.5	97.7	97.9	95.5	90.3	90.7	91.1	91.5
625400	94.8	95.8	98.6	101.0	101.2	101.4	95.0	94.8	95.0	95.2	95.4	95.6	95.8	96.0	96.2	96.3	96.5	96.7	96.9	97.1	96.9	92.1	90.2	90.8
625450	95.1	96.1	99.0	100.1	100.3	100.4	96.3	95.2	94.0	94.2	94.4	94.6	94.8	95.0	95.2	95.4	95.6	95.8	96.0	96.1	96.3	92.5	89.3	89.7
625500	95.3	96.5	98.8	99.1	99.3	99.5	99.7	96.5	93.0	93.2	93.4	93.6	93.8	94.0	94.2	94.4	94.6	94.8	95.0	95.2	90.2	88.1	88.4	88.8
625550	95.6	96.9	97.9	98.1	98.3	98.5	98.7	94.5	92.0	92.2	92.4	92.6	92.8	93.0	93.2	93.4	93.6	93.8	94.0	94.2	92.7	91.9	90.2	88.5
625600	95.8	96.7	96.9	97.1	97.3	97.5	97.7	97.9	97.5	91.3	91.4	91.6	91.8	92.0	92.2	92.4	92.6	92.8	93.0	93.2	93.4	91.2	86.6	87.0
625650	96.0	95.9	95.9	96.1	96.3	96.5	96.7	96.9	96.7	90.3	90.5	90.7	90.9	91.1	91.2	91.4	91.6	91.8	92.0	92.2	92.4	89.3	87.8	86.1
625700	95.8	94.8	95.0	95.2	95.3	95.5	95.7	95.9	95.6	94.2	92.2	89.7	89.9	90.1	90.3	90.5	90.7	90.9	91.0	91.2	91.4	91.6	87.7	85.2
625750	95.1	93.8	94.0	94.2	94.4	94.6	94.8	95.0	95.1	95.3	89.2	88.7	88.9	89.1	89.3	89.5	89.7	89.9	90.1	90.3	90.5	89.9	85.1	84.2
625800	93.5	92.8	93.0	93.2	93.4	93.6	93.8	94.0	94.2	94.3	90.8	89.7	87.9	88.1	88.3	88.5	88.7	88.9	89.1	89.3	89.5	89.7	89.9	84.7
625850	91.6	91.8	92.0	92.2	92.4	92.6	92.8	93.0	93.2	93.4	93.6	90.1	86.9	87.1	87.3	87.5	87.7	87.9	88.1	88.3	88.5	88.7	87.9	82.4
625900	90.6	90.8	91.0	91.2	91.4	91.6	91.8	92.0	92.2	92.4	92.6	88.2	86.3	86.1	86.3	86.5	86.7	86.9	87.1	87.3	87.5	87.7	87.9	87.2
625950	94.8	91.4	90.1	90.2	90.4	90.6	90.8	91.0	91.2	91.4	91.6	91.8	91.8	85.2	85.4	85.6	85.8	85.9	86.1	86.3	86.5	86.7	86.9	87.1
626000	94.8	92.2	89.1	89.3	89.5	89.7	89.9	90.0	90.2	90.4	90.6	90.8	88.9	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.5	85.1	85.0	86.1
626050	90.4	88.3	88.9	88.3	88.5	88.7	88.9	89.1	89.3	89.5	89.6	89.8	89.8	88.7	83.9	83.6	83.8	84.0	84.2	84.4	84.6	81.6	82.3	91.0
626100	91.1	90.7	90.6	88.3	87.5	87.7	87.9	88.1	88.3	88.5	88.7	88.9	89.1	89.3	82.4	82.6	82.8	83.0	82.8	81.8	82.4	90.3	96.0	91.2
626150	91.8	89.3	87.3	86.3	86.5	86.7	86.9	87.1	87.3	87.5	87.7	87.9	88.1	88.2	85.3	84.2	81.8	82.0	82.0	86.8	94.8	92.9	86.6	80.4
626200	90.9	89.6	88.7	88.9	85.5	85.7	85.9	86.1	86.3	86.5	86.7	86.9	87.1	87.3	85.9	84.9	80.5	83.7	92.5	94.7	88.4	82.1	83.8	83.8
626250	90.0	89.7	89.4	87.0	84.6	84.8	84.9	85.1	85.3	85.5	85.7	85.9	86.1	86.3	81.8	81.3	89.7	96.0	90.2	83.9	81.2	85.0	80.0	80.0
626300	89.0	88.8	88.5	86.6	86.8	83.8	84.0	84.2	84.4	84.6	84.7	84.9	83.4	82.8	90.6	95.7	91.9	85.6	80.0	85.0	80.8	80.0	80.0	80.0
626350	88.1	87.8	87.5	87.2	85.6	82.8	83.0	83.2	83.3	83.1	82.6	83.7	87.0	94.4	93.7	87.4	81.1	84.9	82.6	80.0	80.0	80.0	80.0	80.0
626400	87.1	86.8	86.6	86.3	84.4	85.5	82.0	82.2	82.0	81.0	82.7	91.4	95.4	89.2	82.9	82.5	84.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	86.1	85.9	85.6	85.3	85.1	84.8	83.3	80.7	81.4	89.6	96.0	90.9	84.6	80.2	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	85.2	84.9	84.6	84.4	84.1	83.0	80.9	86.3	84.9	92.7	86.4	80.1	85.0	81.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	84.2	83.9	83.2	82.1	81.0	84.0	92.4	94.4	88.2	81.9	83.9	83.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	83.2	82.8	81.0	81.7	90.0	96.0	89.9	83.6	81.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	82.3	82.0	88.2	96.0	91.7	85.4	80.0	85.0	80.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	85.3	94.0	93.4	87.2	80.9	85.0	82.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	95.2	88.9	82.6	82.9	84.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	84.4	80.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	85.0	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Subgrade Elevations: Pre-Settlement (sheet 5 of 6)

EASTING (ft) \ NORTHING (ft)	1353200	1353150	1353100	1353050	1353000	1352950	1352900	1352850	1352800	1352750	1352700	1352650	1352600	1352550	1352500	1352450	1352400	1352350	1352300	1352250	1352200	1352150	1352100	1352050
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	81.5	81.4	81.4	81.4	81.4	81.3	81.3	81.3	81.3	81.3	81.2	81.2	81.2	81.2	81.2	81.1	81.1	81.1	81.1	81.1	81.0	81.0	81.0	81.0
623900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623950	92.5	92.4	92.4	92.4	92.4	92.3	92.3	92.3	92.3	92.3	92.2	92.2	92.2	92.2	92.2	92.1	92.1	92.1	92.1	92.1	92.0	92.0	92.0	92.0
624000	87.4	87.9	88.8	86.8	89.1	88.1	89.2	90.3	87.0	87.0	87.6	88.2	87.1	87.1	89.4	88.5	89.1	90.5	87.2	87.3	89.9	90.6	87.4	87.4
624050	82.0	82.3	82.0	82.6	84.6	83.8	85.6	86.6	83.4	83.2	81.4	82.3	81.7	82.3	84.3	84.9	84.0	86.3	83.5	85.7	87.2	86.2	82.2	81.9
624100	82.7	83.4	84.1	84.7	85.4	86.0	86.7	87.4	87.9	83.7	82.4	83.0	83.4	84.4	85.0	85.7	86.4	87.0	86.6	86.0	87.6	86.7	85.9	85.0
624150	83.5	84.2	84.8	85.5	86.1	86.8	87.5	88.1	83.2	82.5	83.1	83.8	84.5	85.1	85.8	86.4	87.1	87.8	88.4	89.0	88.2	87.3	86.4	85.6
624200	84.2	84.9	85.6	86.2	86.9	87.5	88.2	88.9	88.4	83.2	83.9	84.6	85.2	85.9	86.5	87.2	87.9	88.5	89.2	89.8	89.2	87.8	87.0	86.1
624250	85.0	85.7	86.3	87.0	87.6	88.3	89.0	89.6	88.3	84.1	84.6	85.3	86.0	86.6	87.3	87.9	88.6	89.3	89.9	90.0	89.3	88.3	87.5	86.6
624300	85.8	86.4	87.1	87.7	88.4	89.1	89.7	90.4	86.4	84.7	85.4	86.1	86.7	87.4	88.0	88.7	89.4	90.0	90.7	91.1	89.7	88.9	88.0	87.2
624350	86.5	87.2	87.8	88.5	89.1	89.8	90.5	91.1	91.8	85.5	86.1	86.8	87.5	88.1	88.8	89.4	90.1	90.8	91.4	92.1	90.7	89.4	88.5	87.7
624400	87.3	87.9	88.6	89.2	89.9	90.6	91.2	91.9	88.7	86.2	86.9	87.6	88.2	88.9	89.5	90.2	90.9	91.5	92.2	92.8	91.6	89.9	89.1	88.2
624450	88.0	88.7	89.3	90.0	90.6	91.3	92.0	92.6	90.2	87.0	87.6	88.3	89.0	89.6	90.3	90.9	91.6	92.3	92.9	93.6	91.9	90.4	89.6	88.7
624500	88.8	89.4	90.1	90.7	91.4	92.1	92.7	93.4	93.8	89.7	88.4	89.1	89.7	90.4	91.0	91.7	92.4	93.0	93.7	93.0	91.8	91.0	90.1	89.3
624550	89.5	90.2	90.8	91.5	92.1	92.8	93.5	94.1	89.1	88.5	89.1	89.8	90.5	91.1	91.8	92.5	93.1	93.8	94.4	94.6	93.0	91.5	90.6	89.8
624600	90.3	90.9	91.6	92.2	92.9	93.6	94.2	94.9	94.6	89.2	89.9	90.6	91.2	91.9	92.5	93.2	93.9	94.5	95.2	95.8	94.6	92.0	91.2	90.3
624650	91.0	91.7	92.3	93.0	93.6	94.3	95.0	95.6	94.2	90.1	90.7	91.3	92.0	92.6	93.3	94.0	94.6	95.3	95.9	94.7	93.4	92.5	91.7	90.8
624700	91.8	92.4	93.1	93.7	94.4	95.1	95.7	96.4	92.7	90.7	91.4	92.1	92.7	93.4	94.0	94.7	95.4	96.0	96.7	97.3	93.9	93.1	92.1	91.1
624750	92.5	93.2	93.8	94.5	95.2	95.8	96.5	97.1	97.8	92.4	92.2	92.8	93.5	94.1	94.8	95.5	96.1	96.8	97.4	97.8	95.5	93.3	92.4	91.4
624800	93.3	93.9	94.6	95.2	95.9	96.6	97.2	97.9	94.6	92.2	92.9	93.6	94.2	94.9	95.5	96.2	96.9	97.5	98.2	97.1	95.0	93.6	92.6	91.6
624850	94.0	94.7	95.3	96.0	96.7	97.3	98.0	98.6	95.8	93.0	93.7	94.3	95.0	95.6	96.3	97.0	97.6	98.3	98.9	99.6	97.2	93.9	92.9	91.9
624900	94.8	95.4	96.2	96.7	97.4	98.2	100.7	100.1	99.8	95.4	94.0	94.5	95.7	96.0	96.4	97.6	98.0	98.6	99.6	100.0	97.8	94.3	94.3	92.3
624950	95.5	96.2	98.2	98.7	98.6	100.6	101.7	101.8	101.0	97.6	94.9	94.5	95.1	95.8	96.4	97.1	97.8	98.4	99.1	99.8	98.2	96.0	95.0	93.3
625000	96.4	97.3	99.1	99.6	100.0	100.4	100.8	101.2	93.2	97.1	93.0	93.7	94.4	95.0	95.7	96.4	97.0	97.7	98.3	98.3	97.0	95.7	94.8	93.8
625050	97.4	97.8	98.2	98.8	99.1	99.5	99.9	100.3	97.0	93.9	92.3	93.0	93.6	94.3	94.9	95.6	96.3	96.9	97.6	97.8	97.0	95.5	94.5	93.5
625100	96.5	96.9	97.3	97.7	98.2	98.6	99.0	98.1	96.1	90.9	91.5	92.2	92.9	93.5	94.2	94.9	95.5	96.2	96.9	97.5	96.4	95.2	94.3	93.3
625150	95.6	96.0	96.4	96.8	97.2	97.7	98.1	95.4	93.2	90.1	90.8	91.5	92.1	92.8	93.5	94.1	94.8	95.4	96.1	96.0	95.8	95.0	94.0	93.0
625200	94.7	95.1	95.5	95.9	96.3	96.7	97.2	97.6	97.7	90.3	90.1	90.7	91.4	92.0	92.7	93.4	94.0	94.7	95.4	96.0	95.2	94.5	93.8	92.8
625250	93.8	94.2	94.6	95.0	95.4	95.8	96.2	96.4	89.3	88.6	89.3	90.0	90.6	91.3	92.0	92.6	93.3	93.9	94.0	94.0	93.7	93.5	93.2	92.5
625300	92.9	93.3	93.7	94.1	94.5	94.9	95.3	95.7	94.8	89.1	88.6	89.2	89.9	90.5	91.2	91.9	92.5	93.2	93.9	93.3	92.8	92.5	92.3	92.0
625350	91.9	92.4	92.8	93.2	93.6	94.0	94.4	94.8	91.6	87.1	87.8	88.5	89.1	89.8	90.5	91.1	91.8	92.4	93.1	93.8	92.9	91.5	91.3	91.1
625400	91.0	91.4	91.9	92.3	92.7	93.1	93.5	93.9	89.7	86.4	87.1	87.7	88.4	89.0	89.7	90.4	91.0	91.7	92.4	92.2	91.7	90.7	90.3	90.1
625450	90.1	90.5	90.9	91.4	91.8	92.2	92.6	93.0	91.8	85.6	86.3	87.0	87.6	88.3	89.0	89.6	90.3	90.9	91.6	90.9	90.5	89.9	89.4	89.1
625500	89.2	89.6	90.0	90.4	90.9	91.3	91.7	91.3	86.7	84.9	85.6	86.2	86.9	87.5	88.2	88.9	89.5	90.2	90.9	91.5	90.6	88.9	88.4	88.1
625550	88.3	88.7	89.1	89.5	90.0	90.4	90.8	91.2	91.6	84.1	84.8	85.5	86.1	86.8	87.5	88.1	88.8	89.4	90.1	88.8	87.9	87.7	87.4	87.2
625600	87.4	87.8	88.2	88.6	89.0	89.5	89.9	90.3	90.7	86.0	84.1	84.7	85.4	86.0	86.7	87.4	88.0	88.7	89.4	90.0	87.8	86.7	86.5	86.2
625650	86.5	86.9	87.3	87.7	88.1	88.5	89.0	86.9	82.9	86.1	83.3	84.0	84.6	85.3	86.0	86.6	87.3	87.9	88.6	88.1	86.0	85.7	85.5	85.2
625700	85.6	86.0	86.4	86.8	87.2	87.6	88.0	86.5	85.0	82.4	82.6	83.2	83.7	84.5	85.2	85.9	86.5	87.2	87.4	87.2	85.5	84.8	84.5	84.3
625750	84.7	85.1	85.5	85.9	86.3	86.7	85.4	84.3	87.6	84.6	81.5	82.5	81.8	83.1	84.5	85.1	84.8	86.5	84.3	87.0	84.8	83.2	82.7	82.1
625800	83.7	84.2	84.6	85.0	85.4	83.6	81.1	81.8	83.9	84.0	84.0	85.5	83.9	83.9	86.5	85.4	85.6	88.4	83.8	83.7	83.7	83.7	83.6	83.6
625850	82.8	83.2	83.2	84.1	84.5	84.8	91.6	96.0	94.6	94.5	94.5	94.5	94.6	94.6	94.6	94.6	94.6	94.7	94.7	94.7	94.7	94.8	94.8	94.8
625900	81.9	82.0	80.9	81.0	89.4	96.0	96.4	84.6	82.1	82.0	82.0	82.0	82.1	82.1	82.1	82.1	82.1	82.2	82.2	82.2	82.2	82.3	82.3	82.3
625950	82.2	81.1	88.1	95.4	92.2	85.9	80.0	85.0	83.6	83.5	83.5	83.5	83.6	83.6	83.6	83.6	83.6	83.7	83.7	83.7	83.7	83.8	85.0	83.8
626000	87.2	93.4	93.9	87.7	81.4	84.6	82.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.3	83.0	84.7	83.3
626050	95.7	89.4	83.1	82.2	84.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.2	82.9	84.6	83.3
626100	84.9	80.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.1	82.8	84.4	83.3
626150	85.0	81.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.0	82.7	84.2	83.2
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.9	82.6	83.9	83.2
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.8	82.5	83.7	83.1
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.7	82.4	83.4	83.1
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.7	82.4	83.2	83.0
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.6	82.3	82.9	82.9
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.5	82.2	82.7	82.7
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.4	82.1	82.5	82.5
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.3	82.0	82.2	82.2
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.2	81.9	82.0	82.0
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.1	81.7	81.7	81.7
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.5	81.5	81.5
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.2	81.2	81.2
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.0	81.0	81.0
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.7	80.7	80.7
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.5	80.5	80.5
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.2	80.2	80.2
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

5/1/04

Subgrade Elevations: Pre-Settlement (sheet 6 of 6)

EASTING (ft)	NORTHING (ft) 1352000	1351950	1351900	1351850	1351800	1351750	1351700	1351650	1351600	1351550	1351500	1351450	1351400	1351350	1351300	1351250	1351200	1351150	1351100
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623900	80.0	83.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623950	91.1	87.7	91.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624000	88.9	94.7	92.1	83.6	84.7	80.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624050	81.2	80.5	91.6	92.6	84.0	84.2	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624100	84.0	82.2	80.1	91.1	93.0	84.4	83.6	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624150	84.7	83.7	81.8	81.2	91.2	93.5	84.8	83.1	81.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624200	85.3	84.4	83.6	82.7	80.7	90.0	93.9	85.2	82.6	82.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624250	85.8	84.9	84.1	83.2	82.4	80.5	89.5	94.3	85.6	82.0	82.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624300	86.3	85.5	84.6	83.8	82.9	82.1	80.3	88.9	94.7	86.0	81.5	82.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624350	86.8	86.0	85.1	84.3	83.4	82.6	81.6	80.3	88.4	95.1	86.0	83.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624400	87.4	86.5	85.7	84.8	84.0	83.1	82.3	81.3	80.3	88.7	92.9	81.6	84.1	80.0	80.0	80.0	80.0	80.0	80.0
624450	87.9	87.0	86.2	85.3	84.5	83.6	82.8	81.9	81.0	80.7	96.0	85.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624500	88.4	87.6	86.7	85.9	85.0	84.2	83.3	82.4	81.3	80.2	94.1	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624550	88.9	88.1	87.2	86.4	85.5	84.6	83.6	82.6	81.6	80.2	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624600	89.5	88.6	87.7	86.8	85.8	84.8	83.9	82.9	81.9	80.3	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624650	89.9	89.0	88.0	87.0	86.0	85.1	84.1	83.1	82.2	80.4	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624700	90.2	89.2	88.2	87.3	86.3	85.3	84.4	83.4	82.4	80.5	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624750	90.4	89.5	88.5	87.5	86.5	85.6	84.6	83.6	82.7	80.8	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624800	90.7	89.7	88.7	87.8	86.8	85.8	84.9	83.9	82.9	81.6	94.3	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624850	91.2	90.4	89.7	88.0	87.7	86.2	85.8	84.3	83.7	82.2	94.3	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624900	92.4	90.4	90.6	88.6	88.7	86.7	86.8	84.8	84.3	80.6	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624950	93.1	91.3	91.1	89.4	89.2	87.5	87.3	85.4	83.9	80.6	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625000	92.8	91.9	90.9	89.9	88.9	88.0	87.0	86.0	85.1	84.1	94.6	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625050	92.6	91.6	90.6	89.7	88.7	87.7	86.8	85.8	84.8	82.6	94.6	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625100	92.3	91.4	90.4	89.4	88.4	87.5	86.5	85.5	84.6	81.3	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625150	92.1	91.1	90.1	89.2	88.2	87.2	86.3	85.3	84.3	81.1	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625200	91.8	90.9	89.9	88.9	87.9	87.0	86.0	85.0	84.1	80.6	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625250	91.6	90.6	89.6	88.7	87.7	86.7	85.8	84.8	83.5	80.6	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625300	91.3	90.4	89.4	88.4	87.4	86.5	85.5	84.5	83.1	80.4	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625350	90.8	90.1	89.1	88.2	87.2	86.2	85.3	84.3	82.5	80.4	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625400	89.8	89.6	88.9	87.9	86.9	86.0	85.0	84.0	83.1	82.1	94.3	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625450	88.9	88.6	88.4	87.7	86.7	85.7	84.8	83.8	82.8	81.1	94.2	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625500	87.9	87.6	87.4	87.2	86.4	85.5	84.5	83.5	82.6	80.7	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625550	86.9	86.7	86.4	86.2	85.9	85.2	84.3	83.3	82.3	80.4	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	86.0	85.7	85.5	85.2	85.0	84.7	84.0	83.0	82.1	80.3	94.1	87.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	85.0	84.7	84.5	84.2	84.0	83.7	83.5	82.8	81.7	80.2	94.2	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	84.0	83.8	83.5	83.3	83.0	82.8	82.5	82.3	81.4	81.0	96.0	85.4	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	82.0	82.8	82.6	82.3	82.1	81.5	81.3	81.0	80.3	89.3	92.6	81.4	83.8	80.0	80.0	80.0	80.0	80.0	80.0
625800	83.6	84.8	84.4	83.5	83.5	83.5	83.4	84.9	91.0	94.6	85.5	84.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	94.8	94.8	94.9	94.9	94.9	94.9	94.9	94.1	90.5	84.6	82.2	81.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	82.3	82.3	82.4	82.4	82.4	82.4	82.4	81.7	80.0	85.0	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	83.8	83.8	83.9	83.9	83.9	83.9	83.9	83.3	80.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	81.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	81.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	81.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	81.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	81.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	81.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

ATTACHMENT 3

Vertical Load from Subgrade Fill

Vertical Load from Subgrade Fill (sheet 1 of 6)

EASTING (ft) (psf)	NORTHING (ft) 358000	357950	357900	357850	357800	357750	357700	357650	357600	357550	357500	357450	357400	357350	357300	357250	357200	357150	357100	357050	357000	356950	356900	356850
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	0	0	0	0	0	0	0	0	0	0	239	388	389	386	384	382	379	377	373	371	368	366	364	361
623900	0	0	0	0	0	0	0	0	600	300	37	205	209	206	204	202	199	197	193	191	188	186	184	181
623950	0	0	0	0	0	0	0	600	162	962	1493	1709	1709	1706	1704	1702	1699	1697	1693	1691	1688	1686	1684	1681
624000	0	0	0	0	0	0	600	180	1307	1788	898	524	521	524	528	532	708	539	541	545	548	552	556	599
624050	0	0	0	0	0	0	248	998	1760	226	91	132	170	214	259	289	319	190	235	282	350	421	498	528
624100	0	0	0	0	0	301	94	1556	827	97	257	287	316	346	376	406	436	446	494	524	554	584	614	644
624150	0	0	0	0	0	461	280	1778	431	144	290	402	432	462	492	522	552	581	611	641	671	701	731	760
624200	0	0	0	0	0	472	292	1792	410	155	320	437	548	578	608	638	667	697	727	757	787	817	846	876
624250	0	0	0	0	0	472	292	1792	410	227	350	467	583	695	725	754	784	814	844	874	904	932	962	992
624300	0	0	0	0	0	472	292	1792	410	265	380	497	613	730	840	870	900	930	960	990	1020	1049	1079	1109
624350	0	0	0	0	0	472	292	1792	451	295	410	527	643	760	876	986	1016	1046	1076	1106	1135	1165	1195	1225
624400	0	0	0	0	0	472	292	1792	599	325	440	557	673	790	906	1022	1133	1163	1193	1222	1252	1282	1312	1342
624450	0	0	0	0	0	472	292	1792	410	206	470	587	703	820	936	1052	1168	1279	1308	1338	1368	1398	1428	1458
624500	0	0	0	0	0	472	292	1792	410	222	500	617	733	850	966	1082	1198	1314	1424	1454	1484	1514	1544	1573
624550	0	0	0	0	0	419	216	1711	564	265	530	647	763	880	996	1112	1228	1344	1460	1571	1601	1631	1661	1690
624600	0	0	0	0	0	127	0	1294	1290	320	560	677	793	910	972	1087	1195	1312	1490	1607	1588	1747	1776	1806
624650	0	0	0	0	0	0	600	670	1920	686	590	707	664	940	808	1050	1102	1066	1520	1637	1370	1768	1892	1898
624700	0	0	0	0	0	0	347	17	1368	1268	338	580	458	715	642	812	851	917	1189	1444	1182	1470	1430	1378
624750	0	0	0	0	0	0	0	600	716	1920	269	338	382	473	564	656	748	839	931	1015	1081	1146	1212	1278
624800	0	0	0	0	0	0	0	394	84	1415	1112	164	304	395	487	578	670	762	850	916	980	1046	1111	1177
624850	0	0	0	0	0	0	0	0	544	763	1920	181	209	318	409	500	593	684	749	815	880	946	1010	1076
624900	0	0	0	0	0	0	0	0	440	110	1462	1050	90	240	332	424	515	583	648	714	779	845	910	976
624950	0	0	0	0	0	0	0	0	0	481	810	1920	119	144	254	346	418	482	548	613	679	744	810	875
625000	0	0	0	0	0	0	0	0	0	488	157	1508	988	58	168	251	317	382	448	512	578	643	709	774
625050	0	0	0	0	0	0	0	0	0	0	420	857	1918	302	66	134	200	261	347	412	478	542	608	673
625100	0	0	0	0	0	0	0	0	0	0	499	86	1247	1798	811	143	37	126	246	312	377	443	508	574
625150	0	0	0	0	0	0	0	0	0	0	0	600	150	988	1594	1920	1403	767	131	164	276	342	320	463
625200	0	0	0	0	0	0	0	0	0	0	0	0	600	232	172	648	1126	1603	1920	1390	856	264	88	194
625250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	430	600	155	181	658	1135	1613	1920	1378	740
625300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	439	600	143	191	667	1145	1622
625350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	449	600	130	200
625400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	458
625450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vertical Load from Subgrade Fill (sheet 2 of 6)

(psf)

EASTING (ft)	NORTHING (ft) 1358800	1358750	1358700	1358650	1358600	1358550	1358500	1358450	1358400	1358350	1358300	1358250	1358200	1358150	1358100	1358050	1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	359	355	353	350	348	346	343	341	338	335	332	330	328	325	323	320	318	314	312	310	307	305	302	300
623900	179	175	173	170	168	166	163	161	158	155	152	150	148	145	143	140	138	134	132	130	127	125	122	120
623950	1679	1675	1673	1670	1668	1666	1663	1661	1658	1655	1652	1650	1648	1645	1643	1640	1638	1634	1632	1630	1627	1625	1622	1620
624000	901	585	569	572	576	580	583	620	756	593	596	785	874	739	1102	613	617	1034	1150	628	630	719	798	641
624050	558	445	304	394	426	624	470	146	178	186	290	504	583	439	742	383	511	979	1058	266	102	223	312	257
624100	873	703	733	763	630	503	354	277	358	384	515	594	673	752	832	757	990	1069	1148	841	244	323	402	481
624150	790	820	850	880	781	413	710	367	446	526	605	684	763	842	922	1001	1080	1159	839	254	334	413	492	571
624200	906	936	966	996	1025	1055	811	457	536	616	695	774	853	932	1012	1092	1171	1250	1330	901	424	503	582	661
624250	1022	1052	1082	1111	1141	1171	667	547	628	707	786	865	944	1024	1103	1182	1261	1340	1420	899	514	593	672	751
624300	1139	1169	1199	1228	1258	904	559	638	718	797	876	955	1034	1114	1193	1272	1351	1430	1242	810	604	683	763	842
624350	1255	1285	1314	1344	1374	1404	1060	728	808	887	966	1045	1124	1204	1283	1362	1441	1520	1600	1400	695	774	853	932
624400	1372	1400	1430	1460	1352	985	739	818	898	977	1056	1135	1214	1294	1373	1452	1531	1610	1591	857	785	864	943	1022
624450	1487	1517	1547	1577	1460	1310	936	908	988	1067	1146	1225	1304	1384	1463	1542	1621	1700	1721	1108	875	954	1033	1112
624500	1603	1633	1663	1693	1562	1414	1153	998	1078	1157	1236	1315	1394	1474	1553	1632	1711	1790	1870	1650	965	1044	1123	1202
624550	1720	1750	1780	1810	1710	1188	1009	1088	1168	1247	1326	1405	1484	1564	1643	1722	1801	1880	1549	976	1055	1134	1213	1292
624600	1836	1866	1896	1912	1840	1734	1550	1178	1258	1337	1416	1495	1574	1654	1733	1812	1891	1970	2050	1685	1214	1224	1303	1382
624650	1711	1806	1787	1744	1783	1439	1238	1205	1346	1427	1451	1585	1864	1702	1824	1903	1962	2062	2141	1609	1230	1314	1393	1457
624700	1448	1542	1574	1639	1705	1448	1255	1207	1339	1418	1453	1578	1657	1705	1817	1896	1968	2054	2135	1660	1256	1403	1440	1440
624750	1343	1409	1474	1540	1604	1670	1458	1170	1249	1328	1409	1488	1567	1646	1727	1806	1886	1966	2015	1645	1249	1238	1342	1379
624800	1242	1308	1373	1439	1504	1247	1001	1080	1159	1238	1319	1398	1477	1558	1637	1716	1795	1876	1598	971	1050	1129	1210	1289
624850	1141	1207	1272	1338	1403	1356	1123	990	1069	1150	1228	1308	1387	1468	1547	1626	1705	1786	1865	1694	960	1040	1120	1199
624900	1040	1106	1172	1237	1303	1349	821	900	979	1060	1139	1218	1298	1378	1457	1536	1616	1696	1775	1086	870	950	1030	1109
624950	941	1006	1072	1138	1193	980	731	810	890	970	1049	1128	1208	1288	1367	1446	1526	1606	1632	895	780	860	940	1019
625000	840	905	971	1036	1102	1166	917	720	800	880	959	1038	1118	1198	1277	1357	1436	1516	1595	1396	836	770	850	929
625050	739	804	870	935	1001	772	551	631	710	790	869	949	1028	1108	1187	1267	1346	1426	1471	802	601	680	760	840
625100	638	704	769	835	900	935	575	541	620	700	779	859	938	1018	1098	1177	1256	1336	1416	930	511	590	670	750
625150	538	604	668	734	799	761	456	451	530	610	690	769	848	928	1008	1087	1166	1246	1326	844	421	500	580	660
625200	355	503	568	634	698	445	282	361	440	520	600	679	758	838	918	997	1076	1157	869	252	331	410	491	570
625250	104	134	425	533	599	664	422	271	350	430	510	589	668	749	828	839	986	1067	1146	964	241	320	401	480
625300	1920	1364	728	179	498	211	102	137	260	341	235	499	578	382	738	486	556	977	1056	539	134	220	311	250
625350	677	1154	1632	1920	1494	862	797	794	931	880	784	780	1062	858	1193	1036	763	760	1338	905	750	746	890	781
625400	600	116	210	686	1163	1459	1502	1505	1507	1510	1512	1514	1518	1520	1523	1525	1528	1530	1532	1535	1538	1541	1543	1546
625450	0	0	468	600	131	0	2	5	7	10	12	14	18	20	23	25	28	30	32	35	38	41	43	46
625500	0	0	0	0	0	146	182	185	187	190	192	194	198	200	203	205	208	210	212	215	218	221	223	226
625550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vertical Load from Subgrade Fill (sheet 3 of 6)

EASTING (ft) (psf)	NORTHING (ft) 1355600	1355550	1355500	1355450	1355400	1355350	1355300	1355250	1355200	1355150	1355100	1355050	1355000	1354950	1354900	1354850	1354800	1354750	1354700	1354650	1354600	1354550	1354500	1354450
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	296	294	292	289	287	284	282	280	276	274	271	269	266	264	262	258	256	253	251	248	246	244	241	238
623900	116	114	112	109	107	104	102	100	96	94	91	89	86	84	82	78	76	73	71	68	66	64	61	58
623950	1616	1614	1612	1609	1607	1604	1602	1600	1596	1594	1591	1589	1586	1584	1582	1578	1576	1573	1571	1568	1566	1564	1561	1558
624000	644	966	784	932	1132	661	665	1294	896	762	833	682	685	996	797	695	696	1133	764	709	713	866	755	722
624050	361	550	626	647	782	516	662	1020	281	185	286	241	317	523	602	392	761	629	510	654	108	259	139	260
624100	560	640	719	798	877	944	1036	1115	380	296	376	428	534	613	692	772	851	930	758	437	270	350	353	509
624150	650	730	809	888	967	1046	1128	905	307	386	466	545	624	703	782	862	941	1020	830	574	361	440	520	599
624200	740	820	899	978	1057	1136	1055	766	397	476	556	635	714	793	874	953	1032	1111	1190	919	451	530	610	689
624250	830	910	989	1068	1147	1228	1307	1249	488	568	647	726	805	884	964	1043	1122	1201	875	554	541	620	700	779
624300	922	1001	1080	1159	1238	1318	1397	892	578	658	737	816	895	974	1054	1133	1212	1291	1370	883	631	710	790	869
624350	1012	1091	1170	1249	1328	1408	1487	1120	668	748	827	906	985	1064	1144	1223	1302	1381	1357	1037	721	800	880	959
624400	1102	1181	1260	1339	1418	1498	1577	1656	758	838	917	996	1075	1154	1234	1313	1392	1313	992	732	811	890	970	1049
624450	1192	1271	1350	1429	1508	1588	1667	1104	848	928	1007	1086	1165	1244	1324	1403	1482	1561	1640	918	901	980	1060	1139
624500	1282	1361	1440	1519	1598	1678	1757	1588	1213	1018	1097	1176	1255	1334	1414	1493	1572	1651	1475	1153	991	1070	1150	1229
624550	1372	1451	1530	1609	1688	1768	1847	1562	1028	1108	1187	1266	1345	1424	1504	1583	1662	1741	1621	1002	1082	1162	1241	1320
624600	1462	1541	1620	1699	1778	1858	1937	1501	1118	1198	1277	1356	1435	1514	1594	1673	1752	1831	1910	1636	1314	1252	1331	1410
624650	1552	1631	1710	1789	1868	1948	2027	1985	1208	1288	1367	1446	1525	1606	1685	1764	1843	1922	1591	1270	1262	1342	1421	1500
624700	1561	1721	1800	1879	1960	2039	2118	1412	1300	1379	1458	1537	1618	1696	1775	1854	1933	2012	1572	1273	1352	1432	1511	1590
624750	1606	1626	1891	1837	1946	2129	2208	1898	1602	1469	1548	1627	1708	1786	1865	1944	2023	2102	2074	1752	1442	1522	1601	1680
624800	1368	1464	1704	1612	1736	1957	2230	2377	1699	1559	1638	1717	1796	1876	1955	2034	2113	2040	1708	1453	1532	1612	1691	1770
624850	1278	1358	1438	1517	1596	1676	1967	2040	1915	1732	1728	1807	1886	1970	2045	2124	2210	2282	2362	1543	1622	1702	1781	1860
624900	1188	1268	1348	1427	1507	1586	1666	1745	1825	1904	1816	1896	2143	2099	2135	2224	2317	2381	2190	1868	1712	1792	1871	1950
624950	1099	1178	1258	1337	1417	1496	1576	1655	1735	1814	1894	1974	2053	2132	2160	2261	2371	2400	1988	1680	1802	1882	1961	2040
625000	1009	1088	1168	1247	1327	1406	1486	1566	1645	1724	1804	1884	1963	2042	2122	2202	2178	1804	2147	1699	1891	1920	2052	2131
625050	919	998	1078	1158	1237	1316	1396	1476	1555	1634	1715	1794	1873	1952	1786	1808	1981	1456	1574	1704	1871	1939	2142	2160
625100	829	908	988	1068	1147	1226	1307	1386	1465	1544	1625	1704	1759	1645	1771	1235	1386	1472	1591	1710	1829	1074	2137	2210
625150	739	818	899	978	1057	1136	1217	1296	1375	1454	1535	1614	1438	1164	1354	1253	1372	1490	1609	1728	1847	1966	2084	2240
625200	649	728	809	888	967	1046	1127	1206	1285	1366	1445	1524	1441	1033	1152	1271	1390	1508	1627	1748	1864	1982	2101	2220
625250	559	640	719	798	877	958	1037	1116	1168	1196	793	1139	1037	1051	1170	1289	1408	1525	1644	1763	1882	2000	2119	2238
625300	428	550	629	682	787	868	902	1026	523	1087	742	832	950	1069	1187	1306	1424	1543	1662	1781	1900	2018	2137	2108
625350	804	101	142	385	647	514	608	822	523	746	731	848	967	1086	1205	1324	1442	1561	1680	1799	1918	1871	2154	1822
625400	1672	1920	918	80	348	610	274	391	510	629	748	866	985	1104	1223	1342	1460	1579	1698	1816	1870	1470	1751	1729
625450	210	822	1769	917	136	161	290	409	528	647	766	884	1003	1122	1241	1360	1477	1596	1544	1416	1758	1460	1577	1693
625500	473	223	833	1920	184	181	308	427	548	665	784	902	1020	1139	1258	1376	1188	1375	1453	1256	1373	1488	1606	1722
625550	0	458	108	1438	1110	133	326	445	564	682	800	919	1038	1157	1074	1306	1084	1051	1186	1284	1402	1518	1634	1751
625600	0	0	542	743	1920	472	324	436	581	700	818	937	924	1175	731	847	964	1080	1196	1313	1429	1547	1663	1780
625650	0	0	398	48	1378	1190	154	480	599	718	836	955	526	674	760	878	992	1109	1225	1342	1458	1574	1692	1808
625700	0	0	0	600	683	1920	344	498	617	572	415	570	554	671	788	905	1021	1138	1254	1370	1487	1603	1720	1836
625750	0	0	0	338	0	1318	1433	455	412	305	350	467	583	700	816	934	1050	1168	1283	1399	1516	1632	1748	1865
625800	0	0	0	0	600	623	1920	484	114	263	379	496	612	728	845	961	1079	1195	1312	1428	1544	1661	1777	1894
625850	0	0	0	0	278	0	1258	1351	74	292	408	524	641	757	874	990	1106	1223	1340	1457	1573	1690	1806	1909
625900	0	0	0	0	0	600	563	1891	636	318	416	553	670	786	902	1019	1135	1252	1368	1486	1602	1718	1835	1920
625950	0	0	0	0	0	218	0	1196	1493	84	421	582	698	815	931	1048	1164	1280	1397	1513	1631	1706	1864	1920
626000	0	0	0	0	0	0	600	502	1831	764	493	611	727	844	960	1076	1193	1309	1426	1542	1658	1678	1727	1808
626050	0	0	0	0	0	0	158	17	1136	1614	52	445	755	872	989	1105	1222	1338	1295	1357	1464	1535	1624	1692
626100	0	0	0	0	0	0	0	600	442	1771	666	360	784	900	1018	1134	1082	1258	1375	1276	1364	1454	1543	1577
626150	0	0	0	0	0	0	0	97	97	1076	1592	452	812	929	890	1105	1049	1082	1150	1195	1284	1374	1463	1462
626200	0	0	0	0	0	0	0	0	600	382	1711	1140	592	958	677	840	918	937	1026	1115	1204	1294	1379	1345
626250	0	0	0	0	0	0	0	0	37	178	1016	1673	42	595	589	678	767	857	946	1034	1123	1213	1262	1230
626300	0	0	0	0	0	0	0	0	0	600	322	1851	827	230	509	598	686	776	865	954	1043	1133	1147	1115
626350	0	0	0	0	0	0	0	0	0	0	258	956	1753	5	329	517	606	696	785	874	962	1052	1032	1000
626400	0	0	0	0	0	0	0	0	0	0	600	262	1591	906	148	386	526	616	704	793	882	949	916	883
626450	0	0	0	0	0	0	0	0	0	0	0	338	896	1832	60	305	445	535	624	713	802	833	800	768
626500	0	0	0	0	0	0	0	0	0	0	0	552	202	1530	1104	276	365	455	544	632	721	718	685	653
626550	0	0	0	0	0	0	0	0	0	0	0	0	419	835	1914	148	284	374	463	552	635	602	570	538
626600	0	0	0	0	0	0	0	0	0	0	0	0	492	140	1470	1067	124	294	383	472	518	486	454	421
626650	0	0	0	0	0	0	0	0	0	0	0	0	0	498	775	1920	221	181	302	391	403	371	338	306
626700	0	0	0	0	0	0	0	0	0	0	0	0	0	431	80	1410	1147	68	212	311	288	256	203	108
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	578	715	1920	468	89	184	138	79	359	1363
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	362	0	1136	1916	866	307	391	1097	1920	1280	
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600	62	923	1564	1867	1819	1426	738	0	
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	533	287	116	382	337	6	534	367
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	344	565	524	248	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vertical Load from Subgrade Fill (sheet 4 of 6)

EASTING (ft) (psf)	NORTHING (ft) 1354400	1354350	1354300	1354250	1354200	1354150	1354100	1354050	1354000	1353950	1353900	1353850	1353800	1353750	1353700	1353650	1353600	1353550	1353500	1353450	1353400	1353350	1353300	1353250
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	235	233	230	228	226	223	221	217	215	212	210	208	205	203	199	197	194	192	190	187	185	182	179	176
623900	55	53	50	48	46	43	41	37	35	32	30	28	25	23	19	17	14	12	10	7	5	2	0	0
623950	1555	1553	1550	1548	1546	1543	1541	1537	1535	1532	1530	1528	1525	1523	1519	1517	1514	1512	1510	1507	1505	1502	1498	1496
624000	726	1027	740	1180	739	743	761	896	774	1048	760	763	767	770	803	920	780	784	1003	1034	918	1218	800	804
624050	497	576	457	691	131	155	245	324	265	482	209	305	720	408	144	274	173	254	511	590	433	749	79	104
624100	588	667	746	613	362	256	336	414	493	572	499	685	508	322	284	364	390	522	601	680	760	839	437	250
624150	678	757	836	916	266	346	425	504	583	662	742	535	298	390	374	454	533	612	691	770	850	929	260	340
624200	768	847	926	721	496	436	515	594	673	752	832	911	888	702	464	544	623	702	781	860	940	782	428	430
624250	858	937	1016	1093	868	526	605	684	763	842	922	971	677	491	554	634	713	792	871	950	1030	1109	835	520
624300	948	1027	1106	1186	536	616	696	775	854	934	1013	1092	629	955	709	724	804	883	962	1042	1121	1200	532	611
624350	1038	1117	1196	1086	760	707	786	865	944	1024	1103	1182	1057	871	736	815	894	973	1052	1132	1211	1226	914	701
624400	1128	1207	1286	1366	971	797	876	955	1034	1114	1193	1031	845	746	826	905	984	1063	1142	1222	1301	1380	946	791
624450	1218	1297	1376	1072	865	887	966	1045	1124	1204	1283	1362	1438	1252	916	995	1074	1153	1232	1312	1391	1152	859	881
624500	1308	1387	1466	1444	1237	977	1056	1135	1214	1294	1373	1424	1225	1039	1006	1085	1164	1243	1322	1402	1481	1559	1266	971
624550	1399	1478	1558	1637	988	1067	1146	1225	1304	1384	1463	1542	1068	1236	1096	1175	1254	1333	1412	1492	1571	1650	982	1061
624600	1489	1568	1648	1484	1180	1157	1236	1315	1394	1474	1553	1632	1606	1392	1186	1265	1344	1423	1502	1582	1661	1640	1219	1151
624650	1579	1658	1738	1817	1553	1247	1326	1405	1484	1564	1643	1580	1394	1207	1276	1355	1434	1513	1592	1672	1751	1830	1626	1241
624700	1669	1748	1828	1907	1258	1337	1416	1495	1574	1654	1733	1812	1847	1484	1366	1445	1524	1603	1682	1762	1841	1904	1252	1331
624750	1759	1838	1918	1789	1596	1428	1507	1586	1666	1745	1824	1903	1775	1588	1456	1536	1615	1694	1774	1853	1932	1966	1637	1422
624800	1849	1928	2008	2087	1592	1518	1597	1676	1756	1835	1914	1993	1562	1468	1547	1626	1705	1784	1864	1943	2022	2101	1638	1512
624850	1939	2018	2098	1876	1559	1608	1687	1766	1846	1925	2004	2083	2155	1558	1637	1716	1795	1874	1954	2033	2112	1836	1590	1602
624900	2029	2108	2188	2246	1939	1698	1777	1856	1936	2015	2094	2129	1943	1757	1727	1806	1885	1964	2044	2123	2202	2243	1997	1705
624950	2119	2198	2279	2358	1709	1788	1867	1946	2026	2105	2184	2167	1754	1738	1817	1896	1975	2054	2134	2213	2292	2371	1728	1894
625000	2210	2290	2369	2443	2093	1878	1957	2036	2116	2195	2274	2353	2323	1897	1907	1986	2065	2144	2224	2303	2382	2104	1832	2065
625050	2300	2380	2459	2538	2362	1968	2047	2126	2206	2285	2364	2298	2112	1925	1997	2076	2155	2022	2040	2393	1950	2012	1904	2040
625100	2381	2455	2549	2628	1979	2058	2137	2216	2296	2375	2454	2533	2119	2436	2501	2192	2502	2273	1708	1921	1782	1831	1880	1930
625150	2398	2473	2638	2489	2335	2148	2160	2306	2366	2399	2454	2543	2578	2522	2526	2550	2573	2597	2620	2140	1673	1722	1771	1820
625200	2339	2435	2508	2431	2181	2160	2160	2299	2298	2292	2315	2339	2362	2386	2408	2432	2455	2479	2502	1660	1564	1613	1662	1711
625250	2357	2200	2137	2778	2742	2081	2104	2128	2150	2174	2197	2221	2244	2267	2291	2314	2338	2360	2384	2251	1454	1504	1553	1602
625300	2375	2149	2078	2728	2430	1963	1988	2009	2033	2056	2080	2102	2126	2149	2173	2196	2220	2243	2267	2150	1506	1394	1444	1493
625350	1752	1986	2201	2632	2495	2358	2101	1891	1915	1938	1962	1985	2009	2032	2056	2078	2102	2125	2149	1858	1235	1284	1334	1384
625400	1781	1897	2228	2524	2548	2570	1796	1774	1798	1820	1844	1867	1891	1914	1938	1961	1985	2008	2032	2054	2032	1452	1225	1274
625450	1810	1931	2284	2406	2430	2453	1955	1818	1680	1703	1727	1750	1774	1796	1820	1843	1867	1890	1914	1937	1961	1495	1115	1165
625500	1838	1976	2261	2288	2311	2335	2358	1978	1562	1585	1609	1632	1656	1679	1703	1726	1750	1772	1795	1818	1219	974	1006	1056
625550	1867	2023	2147	2171	2194	2218	2240	1738	1445	1468	1492	1514	1537	1561	1584	1608	1631	1655	1678	1702	1523	1423	1219	1016
625600	1896	1998	2029	2053	2076	2100	2123	2147	2102	1350	1373	1397	1420	1444	1466	1490	1513	1537	1560	1584	1607	1349	787	836
625650	1920	1913	1912	1936	1958	1982	2005	2029	1999	1232	1255	1279	1302	1326	1349	1373	1396	1420	1442	1466	1489	1121	936	727
625700	1890	1771	1794	1818	1841	1865	1888	1912	1874	1699	1458	1162	1184	1208	1231	1255	1278	1302	1325	1349	1372	1396	920	618
625750	1806	1654	1676	1700	1723	1747	1770	1794	1817	1840	1102	1044	1067	1091	1114	1138	1160	1184	1207	1231	1254	1192	607	509
625800	1618	1536	1559	1583	1606	1628	1652	1675	1899	1710	1296	1159	949	973	996	1020	1043	1067	1090	1112	1136	1159	1183	562
625850	1394	1417	1441	1464	1488	1511	1535	1558	1582	1604	1628	1216	832	854	878	901	925	948	972	995	1019	1042	948	290
625900	1277	1300	1324	1348	1370	1393	1417	1440	1464	1487	1511	983	756	737	761	784	808	830	854	877	901	924	948	659
625950	1776	1363	1206	1229	1253	1276	1300	1322	1346	1369	1393	1416	1421	619	643	666	690	713	737	760	784	806	830	853
626000	1776	1464	1088	1111	1135	1158	1182	1205	1229	1252	1276	1298	1068	502	526	548	572	595	619	642	665	611	600	736
626050	1242	998	1073	994	1018	1040	1064	1087	1111	1134	1157	1181	1176	1039	463	431	455	478	502	524	548	196	278	1315
626100	1328	1278	1272	1000	899	923	946	970	992	1016	1039	1063	1086	1110	290	313	337	360	337	193	284	1231	1920	1340
626150	1415	1116	875	758	781	805	828	852	875	899	922	946	968	989	636	499	215	242	242	794	1775	1552	797	43
626200	1313	1147	1038	1063	664	688	710	734	757	781	804	828	851	875	704	582	56	439	1504	1763	1008	254	426	427
626250	1196	1165	1133	844	546	570	593	617	640	664	686	710	733	757	221	158	1163	1920	1219	466	144	600	0	0
626300	1082	1050	1018	797	814	452	475	499	522	546	569	593	413	336	1271	1886	1430	677	0	600	95	0	0	0
626350	967	935	902	869	671	335	358	382	401	370	308	443	835	1723	1642	888	134	587	306	0	0	0	0	0
626400	851	818	786	754	530	658	240	263	240	122	319	1368	1853	1099	346	305	517	0	0	0	0	0	0	0
626450	736	703	671	638	606	574	390	85	163	1152	1920	1310	557	24	600	0	0	0	0	0	0	0	0	0
626500	620	588	556	523	491	362	103	761	1786	1522	768	13	600	186	0	0	0	0	0	0	0	0	0	0
626550	505	462	388	251	124	479	1484	1733	979	224	466	397	0	0	0	0	0	0	0	0	0	0	0	0
626600	389	330	125	198	1204	1920	1190	436	184	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626650	274	241	982	1920	1400	647	0	600	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626700	840	1680	1612	858	104	600	276	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626750	1823	1069	316	344	487	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626800	527	64	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626850	600	156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

57/104

Vertical Load from Subgrade Fill (sheet 5 of 6)

EASTING (ft)	NORTHING (ft)																								
	1353200	1353150	1353100	1353050	1353000	1352950	1352900	1352850	1352800	1352750	1352700	1352650	1352600	1352550	1352500	1352450	1352400	1352350	1352300	1352250	1352200	1352150	1352100	1352050
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	174	172	169	167	164	161	158	156	154	151	149	146	144	140	138	136	133	131	128	126	124	120	118	115
623900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623950	1494	1492	1489	1487	1484	1481	1478	1476	1474	1471	1469	1466	1464	1460	1458	1456	1453	1451	1448	1446	1444	1440	1438	1435
624000	887	949	815	818	1096	970	1098	1240	835	839	913	979	848	852	1122	1021	1097	1261	869	872	1184	1270	883	886
624050	236	275	241	310	556	460	674	793	403	378	163	275	206	276	512	592	484	750	421	685	863	745	282	232
624100	328	408	487	566	646	725	804	883	943	448	288	365	403	523	604	683	762	841	794	965	911	809	707	594
624150	419	498	577	656	736	815	894	973	379	298	377	456	535	614	694	773	852	931	1010	1079	985	872	770	668
624200	509	588	667	746	826	905	984	1063	1003	388	467	546	625	704	784	863	942	1021	1100	1180	1099	936	834	732
624250	599	678	757	836	917	996	1075	1154	992	497	557	636	715	794	874	953	1032	1111	1190	1200	1118	998	896	794
624300	690	769	848	928	1007	1086	1165	1244	769	568	647	726	805	884	964	1043	1122	1201	1280	1337	1164	1062	960	858
624350	780	859	938	1018	1097	1176	1255	1334	1414	658	737	816	895	974	1054	1133	1212	1291	1370	1450	1285	1126	1024	922
624400	870	949	1028	1108	1187	1266	1345	1424	1043	748	827	906	985	1064	1144	1223	1302	1381	1460	1540	1387	1188	1087	985
624450	960	1039	1118	1198	1277	1356	1435	1514	1223	838	917	996	1075	1154	1234	1313	1392	1471	1550	1630	1430	1252	1150	1048
624500	1050	1129	1208	1288	1367	1446	1525	1604	1656	1160	1007	1086	1165	1244	1324	1403	1482	1561	1640	1554	1417	1315	1213	1111
624550	1140	1219	1298	1378	1457	1536	1615	1694	1092	1018	1097	1176	1255	1334	1415	1494	1573	1652	1732	1751	1554	1379	1277	1175
624600	1230	1309	1388	1468	1547	1626	1705	1784	1756	1109	1188	1267	1346	1426	1505	1584	1663	1742	1822	1901	1746	1445	1340	1238
624650	1320	1399	1478	1558	1637	1716	1795	1874	1708	1210	1278	1357	1436	1516	1595	1674	1753	1832	1912	1769	1607	1505	1403	1301
624700	1410	1489	1568	1649	1728	1807	1886	1966	1526	1289	1368	1447	1526	1608	1685	1764	1843	1922	2002	2072	1870	1568	1452	1336
624750	1501	1580	1660	1739	1818	1897	1976	2056	2135	1489	1458	1537	1616	1698	1775	1854	1933	2012	2092	2138	1854	1598	1482	1366
624800	1591	1670	1750	1829	1908	1987	2066	2146	1756	1469	1548	1627	1706	1788	1865	1944	2023	2102	2182	2053	1795	1628	1512	1396
624850	1681	1760	1840	1919	1998	2077	2156	2231	1896	1559	1638	1717	1796	1876	1955	2034	2113	2192	2272	2351	2068	1670	1542	1426
624900	1771	1850	1945	2009	2088	2186	2479	2417	2370	1852	1680	1745	1878	1920	1984	2111	2160	2232	2356	2400	2135	1715	1717	1474
624950	1861	1949	2186	2245	2227	2488	2604	2616	2519	2117	1786	1734	1814	1894	1963	2052	2132	2212	2291	2370	2185	1916	1800	1594
625000	1963	2078	2297	2347	2396	2446	2495	2544	1584	2052	1565	1644	1724	1804	1883	1962	2042	2122	2201	2194	2041	1886	1770	1654
625050	2089	2138	2188	2237	2287	2336	2386	2435	2044	1668	1475	1554	1634	1714	1793	1873	1952	2032	2111	2130	2036	1856	1740	1624
625100	1980	2029	2078	2128	2178	2227	2278	2171	1934	1306	1385	1465	1544	1624	1703	1783	1862	1942	2022	2101	1970	1826	1710	1594
625150	1871	1920	1969	2018	2068	2118	2167	1853	1583	1216	1295	1375	1454	1534	1614	1693	1772	1852	1932	1920	1898	1798	1680	1564
625200	1760	1811	1860	1909	1958	2009	2058	2107	2125	1234	1206	1285	1364	1444	1524	1603	1682	1762	1842	1920	1822	1734	1650	1534
625250	1651	1702	1751	1800	1849	1898	1949	1967	1110	1036	1116	1195	1274	1354	1434	1513	1592	1673	1680	1680	1648	1618	1588	1504
625300	1542	1591	1642	1691	1740	1789	1840	1889	1781	1090	1026	1105	1184	1265	1344	1423	1502	1583	1662	1592	1531	1501	1471	1442
625350	1433	1482	1532	1582	1631	1680	1729	1780	1394	857	936	1015	1094	1175	1254	1333	1414	1493	1572	1651	1547	1385	1358	1326
625400	1324	1373	1422	1472	1522	1571	1620	1670	1162	767	846	925	1006	1085	1164	1243	1324	1403	1482	1463	1400	1279	1240	1210
625450	1214	1264	1313	1363	1412	1462	1511	1560	1410	677	756	835	916	995	1074	1153	1234	1313	1392	1306	1256	1187	1123	1093
625500	1105	1154	1204	1253	1303	1352	1402	1352	809	587	666	746	826	905	984	1064	1144	1223	1302	1382	1266	1066	1007	977
625550	996	1045	1094	1144	1194	1243	1292	1342	1391	497	576	656	736	815	894	974	1054	1133	1213	1054	950	920	890	860
625600	887	936	985	1034	1084	1134	1183	1232	1282	725	486	566	646	725	805	884	964	1043	1123	1195	931	804	774	744
625650	776	827	878	925	974	1025	1074	833	346	730	397	476	556	635	715	794	874	953	1033	976	718	688	658	628
625700	667	718	767	816	865	914	965	775	605	293	307	386	444	545	625	704	784	864	888	869	659	571	541	512
625750	558	607	658	707	756	805	650	510	911	554	181	296	214	376	535	614	581	774	510	845	572	378	328	256
625800	449	498	548	598	647	431	133	220	469	481	484	655	472	468	780	644	667	1004	451	448	444	440	437	434
625850	340	389	378	488	538	581	1396	1920	1750	1739	1741	1744	1746	1750	1752	1754	1757	1759	1762	1764	1766	1770	1772	1775
625900	224	238	109	118	1123	1920	1249	556	251	239	241	244	246	250	252	254	257	259	262	264	266	270	272	275
625950	263	128	977	1847	1460	707	0	600	434	419	421	424	426	430	432	434	437	439	442	444	446	455	600	455
626000	866	1607	1872	918	164	547	338	0	0	0	0	0	0	0	0	0	0	0	0	0	156	360	564	400
626050	1883	1129	376	265	547	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	145	349	553	396
626100	587	0	600	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134	338	529	390
626150	600	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122	326	499	385
626200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	316	470	380
626250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	304	440	374
626300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	293	412	370
626350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	282	382	365
626400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	270	353	353
626450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	259	323	323
626500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	247	294	294
626550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	236	264	264
626600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	226	235	235
626650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	205	205	205
626700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176	176	176
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	146	146	146
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	118	118
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	88	88
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	59	59
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	29	29
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vertical Load from Subgrade Fill (sheet 6 of 6)

(psf)	NORTHING (ft)																			
EASTING (ft)	1352000	1351950	1351900	1351850	1351800	1351750	1351700	1351650	1351600	1351550	1351500	1351450	1351400	1351350	1351300	1351250	1351200	1351150	1351100
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623900	0	422	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623950	1331	920	223	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624000	1068	1766	1446	432	565	40	0	0	0	0	0	0	0	0	0	0	0	0	0
624050	145	64	1397	1517	480	502	88	0	0	0	0	0	0	0	0	0	0	0	0
624100	478	269	10	1332	1565	529	437	137	0	0	0	0	0	0	0	0	0	0	0
624150	566	444	211	146	1349	1614	577	372	185	0	0	0	0	0	0	0	0	0	0
624200	630	528	426	324	85	1202	1662	626	307	234	0	0	0	0	0	0	0	0	0
624250	692	590	488	388	286	62	1138	1710	674	242	282	0	0	0	0	0	0	0	0
624300	756	654	552	450	348	246	40	1073	1759	722	178	277	0	0	0	0	0	0	0
624350	820	718	616	514	412	310	186	32	1008	1807	714	428	0	0	0	0	0	0	0
624400	883	781	679	577	475	373	271	156	36	1044	1550	196	486	0	0	0	0	0	0
624450	946	844	742	640	539	437	335	230	116	83	1920	662	600	0	0	0	0	0	0
624500	1009	907	805	703	601	499	397	287	157	20	1691	833	600	0	0	0	0	0	0
624550	1073	971	869	767	665	548	433	317	191	25	1687	834	600	0	0	0	0	0	0
624600	1136	1034	928	811	695	578	463	347	224	32	1687	834	600	0	0	0	0	0	0
624650	1190	1074	958	841	725	608	493	377	260	46	1687	834	600	0	0	0	0	0	0
624700	1220	1104	988	871	755	638	523	407	290	61	1687	834	600	0	0	0	0	0	0
624750	1250	1134	1018	901	785	668	553	437	320	90	1687	834	600	0	0	0	0	0	0
624800	1280	1164	1048	931	815	698	583	467	350	194	1716	834	600	0	0	0	0	0	0
624850	1339	1249	1168	962	922	738	695	515	446	266	1716	834	600	0	0	0	0	0	0
624900	1493	1249	1270	1026	1045	802	821	577	510	68	1687	834	600	0	0	0	0	0	0
624950	1568	1355	1336	1127	1103	899	871	649	468	68	1687	834	600	0	0	0	0	0	0
625000	1538	1422	1306	1189	1073	956	841	722	608	492	1746	834	600	0	0	0	0	0	0
625050	1508	1392	1276	1159	1043	926	811	695	578	310	1746	834	600	0	0	0	0	0	0
625100	1478	1362	1246	1129	1013	896	781	665	548	151	1687	834	600	0	0	0	0	0	0
625150	1448	1332	1216	1099	983	866	751	635	518	132	1687	834	600	0	0	0	0	0	0
625200	1418	1302	1186	1069	953	836	721	605	488	76	1687	834	600	0	0	0	0	0	0
625250	1388	1272	1156	1039	923	806	691	575	416	76	1687	834	600	0	0	0	0	0	0
625300	1358	1242	1126	1009	893	776	661	545	368	50	1687	834	600	0	0	0	0	0	0
625350	1296	1212	1096	979	863	746	631	515	304	50	1687	834	600	0	0	0	0	0	0
625400	1180	1150	1066	949	833	716	601	485	368	252	1716	834	600	0	0	0	0	0	0
625450	1063	1033	1003	919	803	688	571	455	338	131	1706	834	600	0	0	0	0	0	0
625500	947	917	888	858	773	656	541	425	308	88	1687	834	600	0	0	0	0	0	0
625550	830	802	772	742	712	626	511	395	278	46	1687	834	600	0	0	0	0	0	0
625600	715	685	655	625	595	565	481	365	248	35	1687	834	600	0	0	0	0	0	0
625650	599	569	539	509	479	449	420	335	206	26	1699	827	600	0	0	0	0	0	0
625700	482	452	422	392	362	334	304	274	164	118	1920	843	600	0	0	0	0	0	0
625750	239	336	306	276	247	184	155	119	36	1111	1507	182	461	0	0	0	0	0	0
625800	431	578	522	420	416	414	410	582	1325	1747	658	491	0	0	0	0	0	0	0
625850	1777	1780	1782	1784	1787	1790	1793	1693	1262	554	260	222	0	0	0	0	0	0	0
625900	277	280	282	284	287	290	293	204	0	600	134	0	0	0	0	0	0	0	0
625950	457	460	462	464	467	470	473	400	102	0	0	0	0	0	0	0	0	0	0
626000	167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626050	162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626100	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626150	151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626200	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626250	142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626300	137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626350	131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626400	126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626450	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626500	116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626550	112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626600	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626650	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626700	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626750	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626800	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626850	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Written by: STEVEN DAPP Date: 02/04/30 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___

Client: OMNI Project: OHD FACILITY Project/Proposal No.: FW0400 Task No.: 03

VERTICAL LOAD FROM SUBGRADE FILL

$h_{E.G.}$ = ELEVATION OF EXISTING GROUND = 80 ft

h_{SUB} = ELEVATION OF SUBGRADE = 89.0 ft

$$\sigma_{VERT_{(SUB.)}} = (h_{SUB} - h_{E.G.})\,\gamma_{SUB}$$

$$\gamma_{SUB} = 120 \text{ lbs/ft}^3$$

$$\sigma_{VERT_{(SUB)}} = (89 - 80)(120 \text{ lbs/ft}^3)$$

$$\boxed{\sigma_{VERT_{(SUB)}} = 1{,}080 \text{ lbs/ft}^2}$$

$\sigma_{VERT_{(SUB)}}$ = 1,075 lbs/ft² ← FROM SPREADSHEET SOLN.

∴ O.K. √√

ATTACHMENT 4

Vertical Load from Waste

6/1/04

Vertical Load from Waste (sheet 1 of 6)

(psf)	NORTHING (ft)																							
EASTING (ft)	1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650	1357600	1357550	1357500	1357450	1357400	1357350	1357300	1357250	1357200	1357150	1357100	1357050	1357000	1356950	1356900	1356850
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624000	0	0	0	0	0	0	0	0	0	172	812	1103	1107	1104	1101	1099	1016	1093	1090	1087	1085	1082	1079	1058
624050	0	0	0	0	0	0	0	0	191	1356	1877	2062	2044	2019	1993	1976	1958	2027	2000	1985	1936	1896	1854	1837
624100	0	0	0	0	0	0	0	0	861	1888	2465	2831	2821	2801	2782	2762	2743	2735	2704	2685	2666	2647	2628	2609
624150	0	0	0	0	0	0	0	0	1181	2093	2869	3685	3692	3671	3650	3629	3607	3587	3565	3544	3523	3502	3481	3461
624200	0	0	0	0	0	0	0	0	1198	2098	2868	3744	4507	4441	4407	4386	4365	4344	4323	4301	4280	4258	4238	4217
624250	0	0	0	0	0	0	0	0	1198	2058	2849	3724	4638	4559	4536	4516	4494	4473	4451	4429	4408	4387	4366	4344
624300	0	0	0	0	0	0	0	0	1198	2037	2831	3704	4657	4749	4668	4647	4624	4603	4582	4559	4538	4517	4495	4473
624350	0	0	0	0	0	0	0	0	1179	2021	2813	3685	4636	4945	4859	4779	4757	4735	4713	4691	4670	4648	4626	4604
624400	0	0	0	0	0	0	0	0	1109	2005	2795	3665	4614	5145	5058	4972	4890	4868	4846	4824	4803	4780	4758	4736
624450	0	0	0	0	0	0	0	0	1198	2070	2777	3645	4593	5348	5259	5172	5085	5003	4982	4959	4937	4914	4892	4869
624500	0	0	0	0	0	0	0	0	1198	2061	2759	3625	4571	5550	5464	5375	5287	5200	5117	5094	5072	5049	5027	5005
624550	0	0	0	0	0	0	0	0	1071	1950	2585	3338	4155	5036	5671	5581	5492	5403	5315	5231	5209	5185	5163	5141
624600	0	0	0	0	0	0	0	0	532	1603	2195	2914	3696	4541	5492	5834	5748	5658	5520	5431	5445	5323	5302	5278
624650	0	0	0	0	0	0	0	0	36	1105	1826	2510	3357	4067	5125	5974	6058	6087	5729	5638	5845	5520	5441	5435
624700	0	0	0	0	0	0	0	0	0	560	1618	2211	3077	3779	4767	5651	6222	6169	5952	5754	5959	5734	5765	5807
624750	0	0	0	0	0	0	0	0	0	53	1327	1985	2728	3510	4359	5273	6065	5992	5919	5854	5803	5753	5702	5652
624800	0	0	0	0	0	0	0	0	0	0	645	1731	2393	3145	3963	4847	5798	5817	5748	5698	5648	5598	5548	5498
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624900	0	0	0	0	0	0	0	0	0	0	0	692	1795	2456	3214	4038	4928	5300	5442	5392	5343	5294	5246	5197
624950	0	0	0	0	0	0	0	0	0	0	0	87	1447	2143	2860	3654	4055	4340	4631	4930	5193	5145	5096	5049
625000	0	0	0	0	0	0	0	0	0	0	0	0	739	1637	2477	2937	3191	3453	3722	3997	4280	4570	4866	4902
625050	0	0	0	0	0	0	0	0	0	0	0	0	69	1286	1898	2177	2409	2639	2885	3138	3398	3668	3939	4221
625100	0	0	0	0	0	0	0	0	0	0	0	0	0	168	874	1426	1721	1927	2121	2350	2588	2833	3084	3343
625150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	435	910	1437	1661	1852	2074	2351	2544
625200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	444	874	1376	1705	1900
625250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	453	930
625300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vertical Load from Waste (sheet 2 of 6)

(psf)	NORTHING (ft)																								
	1356800	1356750	1356700	1356650	1356600	1356550	1356500	1356450	1356400	1356350	1356300	1356250	1356200	1356150	1356100	1356050	1356000	1355950	1355900	1355850	1355800	1355750	1355700	1355650
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624000	919	1071	1068	1085	1082	1060	1057	1038	975	1048	1046	958	917	977	813	1032	1030	839	787	1021	1019	977	940	1010
624050	1820	1878	1952	1903	1884	1778	1858	2031	2013	2006	1949	1833	1790	1865	1705	1893	1823	1579	1538	1949	2037	1970	1921	1949
624100	2591	2571	2552	2533	2610	2683	2770	2815	2766	2747	2668	2620	2572	2525	2478	2519	2384	2337	2291	2407	2815	2766	2717	2669
624150	3440	3419	3398	3377	3432	3677	3481	3704	3650	3596	3543	3490	3437	3385	3333	3281	3230	3178	3379	3758	3704	3650	3596	3543
624200	4196	4175	4154	4133	4113	4092	4259	4507	4451	4395	4339	4283	4228	4173	4118	4063	4009	3955	3901	4193	4513	4442	4370	4299
624250	4323	4302	4281	4261	4239	4218	4571	4657	4600	4542	4486	4429	4374	4318	4262	4208	4152	4098	4043	4403	4863	4590	4518	4445
624300	4452	4431	4409	4389	4367	4618	4865	4808	4750	4692	4636	4578	4522	4465	4409	4354	4297	4242	4373	4824	4814	4740	4667	4594
624350	4582	4561	4540	4518	4496	4475	4720	4961	4903	4844	4787	4729	4672	4614	4558	4501	4445	4389	4333	4473	4966	4892	4817	4744
624400	4714	4693	4671	4649	4726	4994	5176	5116	5058	4998	4940	4881	4824	4765	4708	4651	4594	4537	4550	5084	5121	5045	4970	4895
624450	4848	4826	4803	4782	4865	4975	5253	5274	5214	5154	5095	5036	4977	4918	4860	4803	4744	4687	4672	5120	5277	5201	5125	5050
624500	4982	4960	4937	4915	5011	5121	5315	5432	5372	5312	5252	5192	5133	5073	5014	4956	4897	4839	4781	4940	5435	5358	5282	5205
624550	5118	5096	5073	5051	5124	5518	5654	5593	5532	5471	5411	5350	5290	5229	5170	5111	5051	4993	5238	5674	5596	5518	5440	5362
624600	5256	5233	5210	5198	5251	5331	5469	5756	5694	5632	5571	5509	5449	5388	5328	5268	5208	5149	5089	5361	5704	5678	5600	5522
624650	5578	5506	5520	5553	5521	5788	5946	5970	5859	5795	5776	5671	5610	5580	5486	5426	5381	5305	5245	5847	5925	5841	5762	5695
624700	5752	5679	5655	5606	5556	5754	5906	5944	5840	5779	5752	5656	5595	5559	5474	5413	5360	5294	5235	5600	5932	5834	5822	5840
624750	5602	5551	5502	5452	5403	5353	5516	5738	5677	5616	5554	5495	5434	5375	5314	5255	5196	5136	5100	5381	5703	5731	5666	5655
624800	5449	5399	5351	5301	5253	5447	5637	5576	5515	5455	5394	5335	5275	5216	5157	5098	5040	4981	5187	5669	5626	5582	5538	5494
624850	5298	5248	5201	5151	5104	5139	5314	5415	5355	5295	5236	5177	5118	5059	5001	4943	4886	4827	4770	4900	5465	5421	5378	5335
624900	5149	5100	5051	5004	4956	4922	5316	5256	5197	5138	5079	5021	4962	4905	4847	4790	4732	4675	4619	5128	5308	5263	5220	5178
624950	5000	4952	4905	4858	4817	4988	5158	5100	5040	4982	4924	4867	4809	4752	4695	4638	4582	4525	4507	5047	5150	5107	5065	5022
625000	4854	4807	4760	4713	4667	4620	4801	4944	4886	4829	4771	4715	4657	4601	4545	4488	4433	4377	4323	4469	4887	4952	4910	4869
625050	4509	4663	4617	4570	4524	4688	4849	4790	4733	4677	4620	4564	4507	4452	4396	4340	4286	4231	4200	4824	4841	4799	4758	4717
625100	3609	3881	4161	4429	4384	4359	4615	4639	4582	4527	4471	4415	4359	4305	4249	4194	4141	4086	4032	4375	4689	4649	4608	4567
625150	2782	3031	3289	3553	3824	4174	4486	4490	4434	4379	4323	4268	4213	4160	4104	4050	3997	3944	3890	4228	4526	4471	4422	4365
625200	2072	2254	2489	2730	2978	3437	3655	3605	3555	3505	3455	3406	3357	3308	3259	3211	3163	3114	3296	3696	3647	3596	3546	3496
625250	1459	1686	1783	1980	2205	2438	2634	2725	2680	2634	2588	2544	2500	2455	2411	2406	2323	2279	2236	2340	2763	2717	2671	2626
625300	65	462	940	1427	1506	1879	1969	1952	1887	1845	1903	1765	1725	1830	1645	1777	1742	1527	1489	1755	1971	1927	1879	1913
625350	0	0	0	68	413	835	886	888	828	852	896	899	776	867	721	790	913	915	663	852	923	926	863	913
625400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EASTING (ft)

Vertical Load from Waste (sheet 3 of 6)

EASTING (ft)	NORTHING (ft)																							
(psf)	1356600	1356550	1356500	1356450	1356400	1356350	1356300	1356250	1356200	1356150	1356100	1356050	1356000	1355950	1355900	1355850	1355800	1355750	1355700	1355650	1355600	1355550	1355500	1355450
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624000	1007	860	941	873	784	994	991	711	883	943	910	977	975	834	922	966	964	769	932	955	953	882	932	945
624050	1891	1790	1749	1737	1666	1803	1725	1541	1923	1974	1918	1941	1899	1789	1746	1854	1661	1728	1789	1712	2000	1918	1981	1914
624100	2620	2572	2525	2478	2431	2391	2338	2291	2714	2763	2714	2682	2618	2570	2523	2475	2428	2381	2478	2665	2762	2713	2710	2618
624150	3490	3437	3385	3333	3281	3230	3178	3316	3700	3647	3593	3540	3487	3435	3382	3330	3278	3227	3345	3508	3645	3592	3539	3485
624200	4228	4159	4089	4019	3950	3882	3922	4103	4342	4271	4201	4131	4061	3992	3923	3854	3786	3719	3651	3817	4118	4048	3979	3911
624250	4375	4303	4232	4162	4093	4023	3953	3977	4488	4417	4345	4274	4203	4134	4064	3995	3926	3858	4063	4268	4262	4191	4122	4052
624300	4521	4449	4377	4307	4236	4165	4095	4572	4637	4564	4492	4420	4349	4278	4208	4137	4068	3999	3930	4387	4407	4337	4266	4195
624350	4670	4598	4525	4453	4381	4310	4240	4481	4788	4714	4642	4569	4496	4424	4353	4282	4212	4141	4142	4349	4556	4484	4412	4340
624400	4822	4748	4674	4601	4529	4457	4386	4314	4940	4866	4792	4718	4645	4572	4501	4429	4357	4396	4608	4779	4705	4632	4560	4488
624450	4974	4900	4825	4752	4679	4606	4533	4922	5095	5020	4944	4870	4797	4723	4649	4576	4504	4433	4361	4861	4857	4783	4710	4636
624500	5129	5053	4979	4904	4830	4756	4683	4789	5046	5175	5099	5024	4949	4874	4800	4727	4654	4581	4691	4908	5011	4936	4861	4787
624550	5285	5210	5133	5058	4982	4908	4834	5026	5409	5331	5256	5179	5103	5028	4953	4879	4804	4731	4801	5242	5165	5089	5013	4939
624600	5444	5367	5290	5213	5138	5062	4987	5294	5569	5491	5413	5336	5259	5184	5108	5032	4957	4883	4809	4993	5215	5245	5169	5093
624650	5604	5526	5448	5371	5294	5218	5141	5157	5731	5652	5573	5496	5418	5340	5263	5186	5111	5036	5265	5492	5481	5403	5326	5249
624700	5763	5656	5609	5531	5452	5374	5298	5822	5893	5813	5734	5655	5577	5498	5421	5344	5267	5191	5507	5720	5641	5563	5485	5408
624750	5497	5499	5315	5373	5307	5187	5145	5397	5640	5760	5716	5672	5628	5584	5541	5497	5425	5348	5353	5581	5804	5724	5646	5567
624800	5451	5395	5231	5317	5240	5092	4908	4817	5336	5460	5417	5374	5331	5288	5246	5203	5160	5232	5501	5715	5671	5627	5583	5540
624850	5293	5249	5206	5164	5122	5079	4881	4844	4952	5105	5125	5082	5040	4995	4957	4915	4868	4832	4791	5416	5372	5330	5287	5245
624900	5135	5092	5051	5009	4967	4924	4883	4842	4800	4758	4839	4797	4638	4684	4673	4626	4576	4547	4699	4949	5081	5039	4997	4955
624950	4980	4938	4897	4856	4813	4772	4731	4691	4649	4608	4568	4527	4488	4446	4443	4388	4327	4322	4629	4868	4798	4754	4713	4673
625000	4827	4786	4744	4704	4662	4622	4582	4540	4500	4460	4420	4379	4339	4300	4261	4221	4252	4531	4306	4638	4517	4512	4435	4396
625050	4676	4635	4594	4553	4513	4473	4433	4392	4353	4313	4272	4233	4194	4155	4286	4286	4182	4566	4498	4422	4321	4289	4165	4168
625100	4526	4486	4446	4406	4365	4326	4286	4247	4208	4168	4128	4090	4068	4160	4090	4478	4386	4343	4276	4209	4143	4059	4043	4190
625150	4331	4313	4299	4259	4220	4181	4141	4102	4063	4025	3986	3948	4082	4287	4171	4257	4189	4123	4058	3992	3928	4020	4137	4228
625200	3482	3592	3617	4115	4077	4038	3998	3960	3922	3883	3845	3807	3878	4170	4104	4038	3973	3908	3844	3836	3951	4068	4182	4299
625250	2617	2737	2977	3330	3801	3895	3957	3820	3801	3796	4083	3865	3949	3954	3889	3825	3761	3698	3768	3881	3995	4110	4227	4345
625300	1863	1967	2227	2619	3091	3683	3748	3681	4032	3670	3915	3870	3805	3742	3679	3616	3588	3699	3811	3924	4039	4155	4272	4495
625350	1039	1463	1773	2097	2511	3259	3942	3733	3932	3783	3783	3715	3637	3560	3483	3520	3630	3742	3854	3969	4084	4315	4318	4759
625400	0	81	795	1662	2118	2655	3675	3710	3682	3613	3565	3517	3470	3442	3471	3562	3673	3785	3899	4014	4174	4657	4663	4887
625450	0	0	0	794	1778	2486	3209	3498	3436	3374	3313	3252	3278	3428	3495	3605	3717	3829	4059	4346	4309	4724	4849	4974
625500	0	0	0	77	1390	2083	2772	3295	3234	3174	3114	3212	3321	3429	3538	3648	3966	4034	4179	4518	4640	4783	4868	5015
625550	0	0	0	0	647	1738	2357	3075	3037	3043	3148	3254	3362	3470	3712	3750	4094	4315	4423	4557	4679	4803	4929	5055
625600	0	0	0	0	55	1222	1973	2660	2979	3083	3189	3295	3488	3513	3998	4115	4233	4353	4473	4596	4719	4843	4968	5095
625650	0	0	0	0	0	588	1696	2236	2943	3124	3230	3337	3805	3898	4035	4152	4271	4391	4512	4635	4758	4883	5009	5136
625700	0	0	0	0	0	33	1254	1847	2519	3267	3553	3640	3841	3956	4072	4190	4309	4429	4551	4673	4798	4923	5050	5177
625750	0	0	0	0	0	0	463	1511	2240	3087	3649	3762	3878	3993	4110	4228	4347	4467	4590	4713	4837	4963	5090	5218
625800	0	0	0	0	0	0	12	1158	2021	2692	3441	3799	3914	4030	4147	4266	4386	4507	4629	4752	4877	5004	5131	5259
625850	0	0	0	0	0	0	0	471	1674	2274	2987	3761	3950	4068	4185	4304	4424	4546	4667	4792	4917	5044	5171	5310
625900	0	0	0	0	0	0	0	0	1059	1879	2566	3292	3988	4104	4223	4342	4462	4585	4708	4831	4957	5084	5211	5365
625950	0	0	0	0	0	0	0	0	390	1638	2168	2844	3607	4141	4260	4380	4501	4624	4747	4872	4997	5155	5253	5428
626000	0	0	0	0	0	0	0	0	0	972	1755	2419	3145	3931	4298	4418	4540	4662	4787	4912	5038	5238	5419	5577
626050	0	0	0	0	0	0	0	0	0	318	1624	2122	2705	3454	4266	4456	4579	4702	4943	5109	5245	5410	5562	5657
626100	0	0	0	0	0	0	0	0	0	0	990	1794	2287	3000	3774	4495	4738	4820	4944	5233	5383	5534	5686	5682
626150	0	0	0	0	0	0	0	0	0	0	303	1393	1890	2567	3404	4144	4823	5010	5174	5356	5508	5660	5815	5706
626200	0	0	0	0	0	0	0	0	0	0	0	752	1642	2155	3101	3853	4723	5179	5329	5480	5634	5788	5932	5732
626250	0	0	0	0	0	0	0	0	0	0	0	249	1568	1974	2732	3502	4337	5235	5454	5606	5761	5918	5958	5758
626300	0	0	0	0	0	0	0	0	0	0	0	0	863	1798	2374	3113	3915	4782	5578	5732	5888	6045	5983	5782
626350	0	0	0	0	0	0	0	0	0	0	0	0	196	1556	2086	2739	3510	4344	5244	5861	6018	6176	6008	5807
626400	0	0	0	0	0	0	0	0	0	0	0	0	0	801	1810	2409	3120	3923	4790	5721	6148	6238	6035	5833
626450	0	0	0	0	0	0	0	0	0	0	0	0	0	143	1498	2068	2746	3517	4353	5252	6216	6284	5864	5328
626500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	689	1711	2387	3127	3931	4798	5731	5527	4985	4465
626550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	1424	2045	2752	3525	4360	5179	4651	4144	3659
626600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	879	1760	2394	3134	3938	4326	3833	3363	2913
626650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	1359	2068	2759	3532	3531	3074	2638	2224
626700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	619	1757	2385	2878	2793	2372	1983	1635
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	1152	1850	2110	2087	1760	1242	463
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	834	1286	1215	657	41	0
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vertical Load from Waste (sheet 4 of 6)

(psf)	NORTHING (ft)																							
EASTING (ft)	1354400	1354350	1354300	1354250	1354200	1354150	1354100	1354050	1354000	1353950	1353900	1353850	1353800	1353750	1353700	1353650	1353600	1353550	1353500	1353450	1353400	1353350	1353300	1353250
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624000	942	806	933	738	932	929	920	857	911	788	915	913	910	907	891	838	899	896	798	783	833	701	883	880
624050	1787	1745	1806	1682	1877	1963	1913	1869	1899	1783	1927	1874	1656	1817	1956	1885	1938	1893	1756	1713	1794	1629	1980	1965
624100	2568	2521	2473	2549	2695	2757	2709	2660	2612	2564	2605	2490	2598	2706	2726	2677	2660	2581	2534	2487	2440	2393	2824	2733
624150	3432	3380	3328	3276	3694	3640	3587	3533	3480	3428	3376	3507	3661	3598	3606	3553	3500	3447	3395	3343	3291	3236	3651	3585
624200	3842	3774	3707	3828	3985	3990	3921	3853	3785	3718	3651	3584	3584	3692	3834	3786	3699	3633	3586	3500	3434	3522	3738	3723
624250	3983	3914	3846	3780	3915	4132	4063	3994	3925	3857	3789	3742	3923	4033	3975	3906	3838	3770	3703	3636	3570	3504	3867	3861
624300	4125	4056	3987	3918	4348	4277	4206	4136	4066	3997	3928	3860	4159	3921	4073	4048	3978	3909	3841	3773	3706	3639	4071	4002
624350	4270	4199	4129	4189	4402	4423	4351	4280	4209	4140	4070	4001	4070	4183	4281	4190	4120	4050	3982	3913	3845	3819	4014	4145
624400	4416	4344	4273	4203	4463	4570	4498	4427	4355	4284	4213	4310	4425	4478	4407	4335	4265	4194	4124	4054	3985	3917	4198	4289
624450	4564	4491	4420	4620	4752	4720	4648	4575	4502	4430	4359	4288	4220	4333	4554	4483	4411	4339	4268	4198	4128	4277	4467	4435
624500	4714	4641	4568	4568	4699	4872	4798	4724	4651	4579	4507	4454	4579	4696	4706	4631	4559	4486	4415	4344	4272	4203	4391	4584
624550	4865	4790	4717	4644	5101	5026	4951	4876	4803	4729	4655	4582	4909	4769	4856	4782	4708	4636	4563	4490	4418	4348	4808	4734
624600	5018	4943	4869	4972	5181	5181	5106	5030	4955	4880	4806	4733	4736	4874	5009	4935	4860	4786	4712	4639	4567	4565	4852	4886
624650	5173	5098	5022	4947	5125	5339	5262	5185	5109	5034	4959	4989	5109	5232	5165	5089	5013	4938	4864	4790	4717	4643	4774	5040
624700	5331	5254	5177	5101	5576	5497	5420	5342	5266	5190	5114	5038	4996	5249	5321	5245	5168	5093	5018	4943	4868	4805	5272	5195
624750	5489	5411	5334	5415	5545	5657	5578	5501	5423	5346	5269	5193	5273	5397	5480	5401	5325	5248	5172	5096	5021	4980	5207	5351
624800	5497	5453	5410	5367	5764	5820	5741	5662	5583	5505	5428	5351	5663	5719	5640	5562	5484	5406	5329	5253	5176	5100	5432	5510
624850	5202	5159	5117	5301	5558	5588	5646	5452	5409	5365	5322	5280	5243	5716	5672	5628	5585	5542	5488	5411	5333	5526	5699	5672
624900	4914	4872	4831	4804	5182	5583	5513	5235	5116	5074	5032	5023	5177	5334	5374	5331	5289	5246	5203	5161	5119	5105	5306	5545
624950	4632	4592	4574	4724	5418	5578	5381	5105	4835	4789	4748	4776	5095	5125	5083	5040	4998	4957	4915	4874	4832	4791	5283	5176
625000	4356	4421	4569	4722	5191	5529	5250	4977	4710	4509	4469	4429	4467	4788	4797	4756	4715	4674	4633	4593	4553	4769	4983	4829
625050	4270	4416	4564	4714	5053	5397	5121	4851	4585	4326	4198	4259	4405	4553	4518	4478	4438	4547	4551	4318	4648	4618	4712	4631
625100	4272	4422	4559	4709	5402	5266	4992	4724	4462	4206	3955	3894	4191	3990	3962	4188	3991	4163	4575	4440	4553	4535	4518	4497
625150	4318	4467	4555	4870	5197	5136	4915	4600	4341	4132	3899	3689	3681	3732	3744	3743	3743	3742	3742	4080	4419	4401	4382	4363
625200	4418	4553	4708	4974	5280	5066	4854	4546	4344	4148	3936	3728	3626	3625	3625	3624	3624	3623	3622	4204	4287	4268	4249	4231
625250	4464	4783	5039	4781	4790	5062	4834	4809	4389	4172	3960	3750	3546	3508	3507	3507	3505	3505	3504	3606	4155	4137	4118	4100
625300	4510	4879	5144	4879	4956	5088	4859	4635	4413	4196	3983	3774	3569	3391	3390	3389	3389	3389	3388	3477	3917	4007	3989	3971
625350	5020	5061	5116	4959	4848	4738	4715	4859	4437	4220	4006	3797	3591	3390	3274	3274	3273	3273	3272	3473	3898	3880	3861	3843
625400	5061	5189	5157	4977	4749	4526	4876	4684	4462	4244	4029	3820	3614	3412	3214	3160	3160	3159	3158	3158	3187	3571	3734	3717
625450	5101	5226	5178	5002	4774	4551	4701	4502	4485	4267	4053	3843	3636	3434	3236	3047	3046	3046	3046	3046	3044	3350	3611	3593
625500	5142	5255	5257	5028	4800	4575	4355	4420	4510	4292	4077	3866	3659	3456	3258	3063	2935	2935	2935	2935	3321	3493	3487	3469
625550	5183	5282	5286	5052	4824	4600	4380	4531	4535	4315	4100	3889	3682	3479	3279	3084	2894	2825	2825	2824	2948	3021	3161	3303
625600	5223	5364	5312	5078	4850	4624	4403	4186	4019	4339	4124	3912	3704	3501	3302	3106	2915	2727	2717	2718	2715	2884	3245	3228
625650	5268	5492	5338	5104	4874	4649	4428	4210	4033	4364	4147	3935	3727	3523	3324	3127	2935	2747	2610	2608	2608	2841	2967	3110
625700	5353	5602	5363	5129	4900	4673	4452	4234	4061	3984	3953	3958	3750	3545	3345	3148	2957	2768	2584	2503	2503	2502	2795	2992
625750	5481	5627	5390	5155	4925	4698	4476	4257	4044	3834	4139	3981	3773	3568	3367	3170	2976	2788	2604	2423	2398	2446	2803	2976
625800	5690	5654	5416	5180	4950	4724	4501	4282	4068	3865	3949	3848	3798	3590	3389	3191	2998	2809	2624	2444	2295	2295	2294	2666
625850	5926	5681	5442	5207	4975	4749	4524	4306	4090	3880	3673	3755	3818	3613	3411	3214	3020	2831	2644	2463	2285	2193	2258	2649
625900	5951	5708	5468	5233	5000	4773	4549	4330	4114	3903	3695	3854	3813	3636	3433	3236	3040	2851	2665	2483	2305	2131	2092	2153
625950	5498	5595	5494	5258	5026	4798	4574	4354	4137	3926	3718	3515	3327	3658	3455	3257	3062	2872	2685	2503	2324	2150	1993	1957
626000	5435	5454	5520	5284	5051	4823	4598	4378	4161	3949	3741	3536	3499	3681	3477	3279	3083	2892	2705	2523	2344	2205	1902	1351
626050	5783	5748	5469	5310	5076	4848	4623	4402	4185	3972	3764	3559	3376	3280	3464	3300	3104	2913	2726	2373	1942	1730	1310	506
626100	5652	5468	5255	5243	5103	4873	4649	4426	4209	3998	3787	3582	3380	3183	3522	3322	3057	2590	2173	1842	1410	630	63	0
626150	5520	5529	5483	5362	5128	4898	4673	4451	4233	4019	3809	3604	3402	3207	3003	2632	2360	1929	1536	913	195	0	0	0
626200	5535	5442	5305	5071	5154	4923	4698	4475	4257	4042	3833	3490	3001	2535	2203	1860	1740	1174	382	0	0	0	0	0
626250	5559	5364	5172	5173	5180	4949	4722	4499	4282	3735	3234	2757	2306	1879	1765	1412	608	19	0	0	0	0	0	0
626300	5584	5389	5196	5145	4920	4974	4526	3987	3473	2984	2521	2082	1775	1429	651	108	0	0	0	0	0	0	0	0
626350	5609	5412	5219	4939	4537	4244	3719	3217	2744	2324	1941	1481	935	249	0	0	0	0	0	0	0	0	0	0
626400	5634	5132	4606	4101	3744	3176	2968	2506	2083	1753	1275	473	0	0	0	0	0	0	0	0	0	0	0	0
626450	4794	4282	3791	3321	2874	2449	2127	1884	1455	651	52	0	0	0	0	0	0	0	0	0	0	0	0	0
626500	3968	3489	3034	2600	2188	1849	1592	914	179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626550	3196	2762	2365	2022	1690	1141	377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626600	2485	2094	1799	1378	578	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626650	1832	1461	763	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626700	1011	254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vertical Load from Waste (sheet 5 of 6)

(psf)	NORTHING (ft)																							
	1353200	1353150	1353100	1353050	1353000	1352950	1352900	1352850	1352800	1352750	1352700	1352650	1352600	1352550	1352500	1352450	1352400	1352350	1352300	1352250	1352200	1352150	1352100	1352050
623600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624000	842	814	872	870	746	800	743	681	856	854	819	789	846	843	724	766	732	661	830	827	690	653	819	817
624050	1693	1871	1888	1850	1720	1768	1655	1593	1794	1806	1918	1858	1893	1854	1728	1686	1741	1602	1771	1633	1541	1599	1849	1864
624100	2685	2636	2588	2541	2494	2446	2399	2353	2317	2801	2695	2647	2623	2551	2503	2455	2409	2362	2387	2289	2319	2374	2431	2495
624150	3494	3419	3337	3285	3220	3168	3110	3037	3425	3470	3419	3368	3317	3267	3217	3166	3117	3067	3018	2976	3033	3103	3166	3230
624200	3655	3589	3523	3457	3392	3327	3263	3199	3222	3607	3554	3503	3451	3400	3350	3298	3248	3198	3148	3098	3148	3251	3314	3379
624250	3793	3727	3659	3593	3525	3460	3395	3330	3419	3732	3692	3640	3587	3536	3484	3432	3382	3330	3280	3273	3325	3402	3466	3532
624300	3933	3865	3797	3729	3662	3596	3529	3463	3760	3885	3831	3778	3725	3673	3621	3568	3517	3465	3414	3377	3488	3554	3620	3687
624350	4075	4005	3937	3869	3801	3733	3666	3600	3533	4027	3972	3919	3865	3812	3759	3706	3654	3601	3550	3497	3604	3709	3776	3844
624400	4218	4149	4079	4010	3941	3872	3805	3737	3977	4170	4115	4061	4006	3953	3899	3845	3793	3739	3687	3634	3734	3867	3934	4003
624450	4365	4293	4223	4152	4083	4014	3945	3876	4058	4316	4260	4205	4150	4095	4041	3987	3933	3879	3826	3773	3906	4027	4095	4165
624500	4512	4440	4368	4297	4227	4156	4086	4018	3967	4300	4407	4351	4295	4240	4185	4130	4076	4021	3967	4025	4118	4189	4258	4329
624550	4661	4588	4516	4444	4372	4301	4231	4160	4586	4612	4555	4499	4442	4386	4330	4274	4219	4164	4109	4095	4231	4353	4423	4495
624600	4812	4738	4665	4592	4519	4448	4376	4305	4309	4763	4706	4648	4590	4534	4478	4421	4365	4309	4254	4198	4306	4518	4591	4664
624650	4965	4890	4816	4742	4669	4596	4524	4451	4555	4908	4857	4799	4741	4684	4627	4570	4513	4456	4401	4501	4618	4689	4762	4836
624700	5119	5044	4969	4894	4819	4745	4672	4600	4901	5070	5011	4952	4894	4836	4778	4720	4663	4606	4549	4498	4786	4860	4944	5030
624750	5274	5199	5123	5047	4972	4898	4824	4750	4676	5144	5167	5108	5048	4989	4931	4872	4815	4757	4699	4665	4871	5059	5144	5231
624800	5433	5356	5279	5202	5127	5051	4976	4901	5174	5385	5324	5265	5204	5145	5086	5027	4968	4909	4851	4944	5135	5260	5347	5436
624850	5593	5515	5437	5361	5283	5207	5131	5059	5293	5545	5484	5423	5362	5302	5243	5183	5124	5064	5005	4948	5156	5455	5553	5642
624900	5512	5468	5413	5382	5340	5283	5060	5143	5161	5551	5682	5632	5529	5497	5463	5351	5313	5258	5166	5132	5331	5652	5649	5838
624950	5217	5168	5008	4982	5012	4851	4770	4777	4865	5163	5413	5453	5392	5332	5280	5214	5154	5098	5037	4980	5118	5318	5407	5565
625000	4920	4852	4711	4690	4671	4652	4633	4614	5336	4989	5353	5293	5234	5175	5116	5058	4998	4941	4883	4889	5001	5116	5203	5291
625050	4612	4594	4574	4555	4535	4517	4497	4478	4775	5051	5195	5136	5077	5019	4960	4902	4844	4788	4731	4718	4785	4916	5003	5089
625100	4478	4456	4440	4421	4402	4382	4364	4454	4638	5097	5039	4980	4922	4865	4807	4750	4692	4636	4579	4524	4617	4720	4805	4890
625150	4344	4325	4307	4288	4269	4250	4232	4467	4675	4942	4885	4826	4770	4712	4655	4599	4542	4487	4430	4440	4455	4527	4611	4694
625200	4213	4194	4174	4156	4138	4119	4101	4082	4085	4711	4731	4674	4618	4562	4505	4450	4394	4339	4283	4230	4298	4359	4419	4501
EASTING	625250	4082	4063	4045	4027	4009	3991	3971	3975	4584	4637	4581	4524	4469	4413	4357	4302	4247	4193	4188	4189	4211	4232	4253	4312
(ft)	625300	3953	3935	3916	3899	3880	3862	3844	3826	3911	4386	4432	4376	4322	4268	4211	4157	4103	4049	3995	4043	4085	4105	4127	4146
	625350	3825	3808	3789	3771	3754	3736	3719	3700	3970	4339	4285	4230	4176	4121	4067	4014	3959	3907	3853	3801	3871	3980	4001	4021
	625400	3700	3682	3664	3646	3629	3611	3593	3575	3924	4194	4140	4086	4032	3978	3924	3872	3818	3766	3714	3727	3769	3849	3877	3897
	625450	3575	3557	3540	3522	3505	3487	3470	3453	3561	4050	3997	3943	3890	3837	3784	3732	3679	3628	3576	3633	3666	3711	3754	3774
	625500	3452	3435	3418	3401	3382	3366	3349	3395	3759	3907	3855	3801	3750	3697	3645	3593	3542	3491	3440	3389	3464	3594	3633	3653
	625550	3330	3314	3296	3279	3262	3245	3229	3211	3190	3767	3715	3662	3611	3560	3508	3457	3406	3356	3305	3408	3474	3494	3514	3533
	625600	3211	3193	3177	3160	3144	3126	3110	3093	3072	3422	3578	3525	3475	3424	3373	3323	3273	3224	3173	3129	3295	3376	3396	3415
	625650	3092	3075	3059	3043	3026	3009	2993	3156	3479	3237	3449	3398	3348	3298	3248	3198	3148	3100	3050	3086	3248	3267	3286	3305
	625700	2976	2959	2943	2926	2910	2894	2739	2653	2671	2852	2845	2799	2766	2707	2662	2617	2572	2526	2514	2526	2650	2704	2724	2742
	625750	2860	2844	2827	2811	2795	2360	2102	1968	1672	1854	2058	1994	2041	1954	1871	1830	1849	1749	1889	1715	1859	1965	1983	2034
	625800	2746	2730	2714	2591	2135	1844	1641	1360	1150	1140	1140	1061	1148	1151	1007	1071	1061	908	1165	1167	1170	1174	1177	1179
	625850	2634	2618	2405	1926	1509	1122	441	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	625900	2526	2178	1638	1447	637	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	625950	1869	1548	791	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626000	935	305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vertical Load from Waste (sheet 6 of 6)

EASTING (ft) (psf)	NORTHING (ft) 1352000	1351950	1351900	1351850	1351800	1351750	1351700	1351650	1351600	1351550	1351500	1351450	1351400	1351350	1351300	1351250	1351200	1351150	1351100
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
623950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624000	677	166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624050	1610	1495	439	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624100	2387	1971	1585	485	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624150	3024	2479	2029	1520	498	0	0	0	0	0	0	0	0	0	0	0	0	0	0
624200	3444	3078	2518	1994	1576	579	0	0	0	0	0	0	0	0	0	0	0	0	0
624250	3598	3665	3133	2568	2041	1612	627	0	0	0	0	0	0	0	0	0	0	0	0
624300	3754	3821	3789	3187	2620	2089	1649	675	0	0	0	0	0	0	0	0	0	0	0
624350	3911	3980	4049	3848	3241	2671	2149	1677	724	0	0	0	0	0	0	0	0	0	0
624400	4072	4141	4211	4282	3906	3296	2722	2193	1701	696	0	0	0	0	0	0	0	0	0
624450	4236	4306	4376	4448	4519	3965	3351	2776	2175	1478	69	0	0	0	0	0	0	0	0
624500	4400	4472	4543	4616	4689	4678	4024	3221	2398	1659	237	0	0	0	0	0	0	0	0
624550	4567	4640	4712	4786	4860	4944	4112	3204	2381	1658	239	0	0	0	0	0	0	0	0
624600	4737	4810	4887	4973	5059	5078	4091	3185	2362	1654	239	0	0	0	0	0	0	0	0
624650	4915	5001	5086	5173	5260	5056	4071	3166	2342	1647	239	0	0	0	0	0	0	0	0
624700	5115	5202	5288	5376	5464	5034	4050	3148	2325	1639	239	0	0	0	0	0	0	0	0
624750	5317	5405	5493	5582	5672	5012	4030	3129	2308	1624	239	0	0	0	0	0	0	0	0
624800	5522	5612	5701	5791	5883	4989	4010	3110	2291	1571	228	0	0	0	0	0	0	0	0
624850	5708	5778	5841	6003	5964	4960	3934	3081	2237	1535	228	0	0	0	0	0	0	0	0
624900	5822	6014	5997	6191	5867	4914	3849	3042	2201	1635	239	0	0	0	0	0	0	0	0
624950	5585	5750	5766	5930	5821	4843	3816	2998	2225	1635	239	0	0	0	0	0	0	0	0
625000	5379	5467	5557	5647	5737	4801	3836	2953	2147	1422	216	0	0	0	0	0	0	0	0
625050	5176	5263	5351	5440	5529	4823	3856	2970	2163	1513	216	0	0	0	0	0	0	0	0
625100	4975	5061	5149	5236	5323	4844	3876	2988	2180	1593	239	0	0	0	0	0	0	0	0
625150	4778	4863	4949	5035	5121	4866	3896	3007	2197	1603	239	0	0	0	0	0	0	0	0
625200	4584	4667	4752	4837	4922	4888	3916	3025	2213	1632	239	0	0	0	0	0	0	0	0
625250	4393	4475	4559	4642	4725	4810	3936	3043	2254	1632	239	0	0	0	0	0	0	0	0
625300	4205	4286	4368	4450	4532	4616	3957	3062	2281	1645	239	0	0	0	0	0	0	0	0
625350	4042	4100	4180	4261	4342	4424	3977	3081	2317	1645	239	0	0	0	0	0	0	0	0
625400	3918	3938	3996	4075	4155	4236	3997	3099	2281	1542	228	0	0	0	0	0	0	0	0
625450	3795	3815	3836	3892	3971	4050	4018	3118	2298	1603	232	0	0	0	0	0	0	0	0
625500	3674	3693	3713	3733	3789	3868	3945	3136	2314	1626	239	0	0	0	0	0	0	0	0
625550	3553	3572	3593	3612	3632	3689	3765	3155	2331	1647	239	0	0	0	0	0	0	0	0
625600	3434	3453	3473	3493	3512	3532	3587	3174	2348	1653	239	0	0	0	0	0	0	0	0
625650	3324	3343	3363	3382	3402	3421	3440	3180	2365	1651	231	0	0	0	0	0	0	0	0
625700	2762	2781	2800	2820	2839	2859	2878	2698	2130	1447	65	0	0	0	0	0	0	0	0
625750	2044	1993	2010	2028	2045	2081	2099	2011	1664	645	0	0	0	0	0	0	0	0	0
625800	1182	1113	1141	1190	1193	1196	1199	1053	495	0	0	0	0	0	0	0	0	0	0
625850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Written by: STEVEN DAPP Date: 02/05/03 (YY/MM/DD) Reviewed by: _____ Date: / / (YY/MM/DD)

Client: OMNI Project: OND FACILITY Project/Proposal No.: FW0400 Task No.: 03

VERTICAL LOAD FROM WASTE

h_{SUB} = ELEVATION OF SUBGRADE = 89.0 ft

h_{COVER} = ELEVATION OF COVER = 161.1 ft

$Z = (h_{COVER} - h_{SUB}) = (161.1\ ft) - (89.0\ ft) = 72.1\ ft$

$\gamma_{WASTE} = 42.7 + 0.30(Z)$ (EQUATION 1)

$\gamma_{WASTE} = 42.7 + 0.30(72.1\ ft)$

$\gamma_{WASTE} = 64.3\ lb/ft^3$

$\sigma_{VERT(WASTE)} = Z\gamma_{WASTE} = (72.1\ ft)(64.3\ lb/ft^2)$

$\sigma_{VERT(WASTE)} = 4,636\ lb/ft^2$

$\sigma_{VERT(WASTE)} = 4,645\ lb/ft^2$ ← FROM SPREADSHEET SOLN

∴ O.K. √√

ATTACHMENT 5

Total Settlement

Total Settlement (sheet 1 of 6)

EASTING (ft) \ NORTHING (ft)	1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650	1357600	1357550	1357500	1357450	1357400	1357350	1357300	1357250	1357200	1357150	1357100	1357050	1357000	1356950	1356900	1356850
623600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
623900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.02	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
623950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	-0.06	-0.09	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
624000	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	-0.08	-0.17	-0.33	-0.41	-0.41	-0.41	-0.41	-0.41	-0.39	-0.40	-0.40	-0.40	-0.40	-0.40	-0.40	-0.40
624050	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.06	-0.17	-0.47	-0.63	-0.70	-0.69	-0.69	-0.68	-0.68	-0.68	-0.69	-0.68	-0.68	-0.67	-0.66	-0.65	-0.65
624100	0.00	0.00	0.00	0.00	0.00	-0.02	-0.01	-0.09	-0.34	-0.64	-0.84	-0.96	-0.96	-0.96	-0.95	-0.95	-0.94	-0.94	-0.94	-0.93	-0.93	-0.92	-0.92	-0.91
624150	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.11	-0.43	-0.71	-0.97	-1.25	-1.25	-1.25	-1.24	-1.24	-1.24	-1.23	-1.23	-1.22	-1.22	-1.21	-1.21	-1.20
624200	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.11	-0.43	-0.71	-0.98	-1.27	-1.53	-1.51	-1.50	-1.49	-1.49	-1.49	-1.48	-1.48	-1.47	-1.47	-1.46	-1.46
624250	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.11	-0.43	-0.70	-0.97	-1.27	-1.57	-1.55	-1.55	-1.55	-1.54	-1.54	-1.53	-1.53	-1.52	-1.52	-1.51	-1.51
624300	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.11	-0.43	-0.70	-0.97	-1.26	-1.58	-1.62	-1.60	-1.60	-1.59	-1.59	-1.58	-1.58	-1.57	-1.57	-1.56	-1.56
624350	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.11	-0.43	-0.70	-0.97	-1.26	-1.58	-1.68	-1.67	-1.65	-1.64	-1.64	-1.63	-1.63	-1.62	-1.62	-1.61	-1.61
624400	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.11	-0.41	-0.69	-0.96	-1.25	-1.57	-1.75	-1.73	-1.71	-1.69	-1.69	-1.68	-1.68	-1.67	-1.67	-1.66	-1.66
624450	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.11	-0.43	-0.70	-0.96	-1.25	-1.57	-1.82	-1.80	-1.78	-1.76	-1.74	-1.73	-1.73	-1.72	-1.72	-1.71	-1.71
624500	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.11	-0.43	-0.70	-0.95	-1.25	-1.56	-1.89	-1.87	-1.85	-1.83	-1.81	-1.79	-1.78	-1.78	-1.77	-1.76	-1.76
624550	0.00	0.00	0.00	0.00	0.00	-0.03	-0.01	-0.10	-0.40	-0.67	-0.90	-1.15	-1.43	-1.72	-1.94	-1.92	-1.89	-1.87	-1.85	-1.83	-1.83	-1.82	-1.82	-1.81
624600	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.08	-0.26	-0.56	-0.77	-1.02	-1.28	-1.56	-1.88	-2.00	-1.98	-1.95	-1.92	-1.90	-1.90	-1.87	-1.87	-1.86
624650	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.04	-0.13	-0.42	-0.65	-0.89	-1.16	-1.41	-1.75	-2.04	-2.07	-2.08	-1.99	-1.97	-2.02	-1.94	-1.92	-1.92
624700	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	0.00	-0.08	-0.27	-0.57	-0.78	-1.05	-1.30	-1.62	-1.92	-2.10	-2.09	-2.04	-1.99	-2.04	-1.99	-2.00	-2.01
624750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.05	-0.13	-0.46	-0.69	-0.93	-1.20	-1.48	-1.78	-2.04	-2.03	-2.01	-2.00	-1.98	-1.97	-1.96	-1.95
624800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.00	-0.09	-0.29	-0.59	-0.82	-1.07	-1.35	-1.64	-1.95	-1.97	-1.95	-1.94	-1.93	-1.92	-1.90	-1.89
624850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.05	-0.14	-0.48	-0.71	-0.95	-1.22	-1.50	-1.80	-1.90	-1.89	-1.88	-1.87	-1.86	-1.85	-1.84
624900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.01	-0.09	-0.30	-0.60	-0.83	-1.09	-1.37	-1.66	-1.79	-1.84	-1.83	-1.81	-1.80	-1.79	-1.78
624950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.05	-0.14	-0.49	-0.72	-0.97	-1.23	-1.37	-1.47	-1.57	-1.67	-1.76	-1.75	-1.74	-1.73
625000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.01	-0.09	-0.31	-0.62	-0.84	-0.99	-1.08	-1.17	-1.26	-1.36	-1.46	-1.55	-1.66	-1.67
625050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.05	-0.15	-0.45	-0.64	-0.73	-0.82	-0.90	-0.98	-1.07	-1.16	-1.25	-1.35	-1.44
625100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.01	-0.08	-0.17	-0.35	-0.49	-0.58	-0.65	-0.72	-0.81	-0.89	-0.97	-1.06	-1.15
625150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	-0.06	-0.10	-0.13	-0.23	-0.36	-0.49	-0.57	-0.64	-0.72	-0.81	-0.88
625200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	-0.01	-0.04	-0.07	-0.10	-0.13	-0.24	-0.35	-0.48	-0.57	-0.65
625250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.04	-0.01	-0.01	-0.04	-0.07	-0.10	-0.14	-0.24	-0.36
625300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.04	-0.01	-0.01	-0.04	-0.07	-0.10
625350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.04	-0.01	-0.01
625400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03
625450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total Settlement (sheet 2 of 6)

EASTING (ft) \ NORTHING (ft)	1358800	1358750	1358700	1358650	1358600	1358550	1358500	1358450	1358400	1358350	1358300	1358250	1358200	1358150	1358100	1358050	1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650
623800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623850	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
623900	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
623950	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
624000	-0.37	-0.40	-0.40	-0.40	-0.40	-0.40	-0.39	-0.39	-0.38	-0.39	-0.39	-0.37	-0.37	-0.38	-0.34	-0.39	-0.39	-0.35	-0.34	-0.39	-0.38	-0.38	-0.37	-0.38
624050	-0.65	-0.66	-0.67	-0.66	-0.66	-0.64	-0.65	-0.69	-0.68	-0.68	-0.67	-0.65	-0.64	-0.65	-0.62	-0.66	-0.65	-0.59	-0.59	-0.67	-0.69	-0.67	-0.66	-0.67
624100	-0.91	-0.91	-0.90	-0.90	-0.91	-0.93	-0.95	-0.96	-0.95	-0.94	-0.92	-0.91	-0.90	-0.89	-0.88	-0.89	-0.86	-0.85	-0.84	-0.87	-0.95	-0.94	-0.93	-0.92
624150	-1.20	-1.19	-1.19	-1.18	-1.20	-1.25	-1.21	-1.25	-1.24	-1.23	-1.22	-1.21	-1.19	-1.18	-1.17	-1.16	-1.15	-1.14	-1.18	-1.26	-1.25	-1.24	-1.23	-1.22
624200	-1.45	-1.45	-1.44	-1.44	-1.43	-1.43	-1.47	-1.52	-1.51	-1.50	-1.48	-1.47	-1.46	-1.45	-1.43	-1.42	-1.41	-1.40	-1.38	-1.45	-1.52	-1.50	-1.49	-1.47
624250	-1.50	-1.50	-1.49	-1.49	-1.48	-1.48	-1.56	-1.58	-1.56	-1.55	-1.54	-1.53	-1.51	-1.50	-1.49	-1.47	-1.46	-1.45	-1.44	-1.52	-1.57	-1.56	-1.54	-1.52
624300	-1.55	-1.55	-1.54	-1.54	-1.53	-1.59	-1.64	-1.63	-1.62	-1.61	-1.59	-1.58	-1.57	-1.55	-1.54	-1.53	-1.51	-1.50	-1.53	-1.63	-1.63	-1.61	-1.59	-1.58
624350	-1.60	-1.60	-1.59	-1.59	-1.58	-1.58	-1.63	-1.69	-1.67	-1.66	-1.65	-1.64	-1.62	-1.61	-1.60	-1.58	-1.57	-1.56	-1.54	-1.58	-1.69	-1.67	-1.65	-1.63
624400	-1.65	-1.65	-1.64	-1.64	-1.65	-1.72	-1.76	-1.74	-1.73	-1.72	-1.70	-1.69	-1.68	-1.66	-1.65	-1.64	-1.62	-1.61	-1.61	-1.74	-1.74	-1.72	-1.71	-1.69
624450	-1.70	-1.70	-1.69	-1.69	-1.71	-1.73	-1.80	-1.80	-1.79	-1.77	-1.76	-1.75	-1.73	-1.72	-1.71	-1.69	-1.68	-1.66	-1.66	-1.77	-1.80	-1.78	-1.76	-1.74
624500	-1.75	-1.75	-1.74	-1.74	-1.76	-1.79	-1.83	-1.86	-1.85	-1.83	-1.82	-1.80	-1.79	-1.78	-1.76	-1.75	-1.73	-1.72	-1.70	-1.74	-1.86	-1.84	-1.82	-1.80
624550	-1.81	-1.80	-1.79	-1.79	-1.81	-1.90	-1.93	-1.92	-1.90	-1.89	-1.88	-1.86	-1.85	-1.83	-1.82	-1.80	-1.79	-1.77	-1.83	-1.94	-1.92	-1.90	-1.88	-1.86
624600	-1.86	-1.85	-1.85	-1.84	-1.86	-1.88	-1.91	-1.98	-1.96	-1.95	-1.93	-1.92	-1.90	-1.89	-1.87	-1.86	-1.85	-1.83	-1.82	-1.88	-1.98	-1.95	-1.93	-1.91
624650	-1.95	-1.94	-1.94	-1.95	-1.94	-2.00	-2.04	-2.05	-2.02	-2.01	-2.00	-1.98	-1.96	-1.95	-1.93	-1.92	-1.91	-1.89	-1.87	-1.97	-2.03	-2.01	-1.99	-1.98
624700	-1.99	-1.98	-1.97	-1.96	-1.95	-1.99	-2.03	-2.04	-2.01	-2.00	-1.99	-1.97	-1.96	-1.95	-1.93	-1.91	-1.90	-1.88	-1.87	-1.96	-2.04	-2.02	-2.02	-2.02
624750	-1.94	-1.93	-1.91	-1.90	-1.89	-1.88	-1.92	-1.97	-1.96	-1.94	-1.93	-1.91	-1.90	-1.88	-1.87	-1.86	-1.84	-1.83	-1.82	-1.89	-1.96	-1.97	-1.96	-1.96
624800	-1.88	-1.87	-1.86	-1.85	-1.84	-1.88	-1.93	-1.91	-1.90	-1.88	-1.87	-1.86	-1.84	-1.83	-1.81	-1.80	-1.78	-1.77	-1.82	-1.93	-1.93	-1.92	-1.91	-1.90
624850	-1.83	-1.81	-1.80	-1.79	-1.78	-1.79	-1.83	-1.85	-1.84	-1.83	-1.81	-1.80	-1.78	-1.77	-1.76	-1.74	-1.73	-1.71	-1.70	-1.73	-1.87	-1.86	-1.85	-1.84
624900	-1.77	-1.76	-1.75	-1.74	-1.73	-1.72	-1.81	-1.80	-1.78	-1.77	-1.76	-1.74	-1.73	-1.71	-1.70	-1.69	-1.67	-1.66	-1.65	-1.77	-1.81	-1.80	-1.79	-1.79
624950	-1.72	-1.70	-1.69	-1.68	-1.67	-1.71	-1.75	-1.74	-1.72	-1.71	-1.70	-1.69	-1.67	-1.66	-1.65	-1.63	-1.62	-1.61	-1.60	-1.73	-1.75	-1.74	-1.74	-1.73
625000	-1.66	-1.65	-1.64	-1.63	-1.62	-1.61	-1.65	-1.68	-1.67	-1.66	-1.64	-1.63	-1.62	-1.60	-1.59	-1.58	-1.56	-1.55	-1.54	-1.57	-1.67	-1.69	-1.68	-1.67
625050	-1.54	-1.60	-1.59	-1.58	-1.57	-1.60	-1.64	-1.62	-1.61	-1.60	-1.59	-1.57	-1.56	-1.55	-1.54	-1.52	-1.51	-1.50	-1.49	-1.63	-1.64	-1.63	-1.62	-1.62
625100	-1.24	-1.34	-1.43	-1.52	-1.51	-1.51	-1.56	-1.57	-1.56	-1.54	-1.53	-1.52	-1.51	-1.50	-1.48	-1.47	-1.46	-1.44	-1.43	-1.51	-1.58	-1.58	-1.57	-1.56
625150	-0.96	-1.05	-1.14	-1.23	-1.32	-1.43	-1.51	-1.51	-1.50	-1.49	-1.48	-1.47	-1.45	-1.44	-1.43	-1.42	-1.40	-1.39	-1.38	-1.46	-1.52	-1.51	-1.50	-1.49
625200	-0.72	-0.79	-0.87	-0.95	-1.04	-1.17	-1.23	-1.22	-1.21	-1.20	-1.19	-1.18	-1.17	-1.16	-1.15	-1.14	-1.13	-1.11	-1.16	-1.24	-1.23	-1.22	-1.21	-1.20
625250	-0.50	-0.57	-0.63	-0.70	-0.78	-0.86	-0.91	-0.93	-0.92	-0.91	-0.90	-0.89	-0.88	-0.87	-0.86	-0.86	-0.84	-0.83	-0.82	-0.85	-0.94	-0.93	-0.92	-0.91
625300	-0.14	-0.24	-0.36	-0.49	-0.54	-0.64	-0.66	-0.66	-0.65	-0.64	-0.65	-0.63	-0.62	-0.64	-0.60	-0.63	-0.62	-0.58	-0.57	-0.62	-0.67	-0.66	-0.65	-0.66
625350	-0.04	-0.07	-0.10	-0.14	-0.23	-0.34	-0.35	-0.35	-0.34	-0.34	-0.35	-0.35	-0.33	-0.35	-0.32	-0.33	-0.36	-0.36	-0.31	-0.35	-0.36	-0.36	-0.35	-0.36
625400	-0.04	-0.01	-0.01	-0.04	-0.07	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09
625450	0.00	0.00	-0.03	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625500	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
625550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

71/104

Total Settlement (sheet 3 of 6)

EASTING (ft)	NORTHING (ft) 1355600	1355550	1355500	1355450	1355400	1355350	1355300	1355250	1355200	1355150	1355100	1355050	1355000	1354950	1354900	1354850	1354800	1354750	1354700	1354650	1354600	1354550	1354500	1354450
623600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623850	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
623900	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623950	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.09
624000	-0.38	-0.35	-0.37	-0.35	-0.34	-0.38	-0.38	-0.32	-0.36	-0.37	-0.36	-0.37	-0.37	-0.34	-0.36	-0.37	-0.37	-0.33	-0.36	-0.37	-0.37	-0.35	-0.36	-0.37
624050	-0.66	-0.64	-0.63	-0.63	-0.61	-0.64	-0.62	-0.58	-0.66	-0.67	-0.66	-0.67	-0.66	-0.63	-0.63	-0.65	-0.61	-0.62	-0.63	-0.62	-0.67	-0.66	-0.67	-0.66
624100	-0.91	-0.90	-0.89	-0.88	-0.87	-0.86	-0.85	-0.84	-0.93	-0.94	-0.93	-0.92	-0.91	-0.90	-0.89	-0.88	-0.87	-0.86	-0.88	-0.92	-0.94	-0.93	-0.93	-0.91
624150	-1.20	-1.19	-1.18	-1.17	-1.16	-1.15	-1.13	-1.16	-1.25	-1.24	-1.22	-1.21	-1.20	-1.19	-1.18	-1.17	-1.15	-1.14	-1.17	-1.20	-1.23	-1.22	-1.21	-1.20
624200	-1.45	-1.43	-1.42	-1.40	-1.38	-1.37	-1.37	-1.41	-1.46	-1.44	-1.43	-1.41	-1.39	-1.38	-1.36	-1.34	-1.33	-1.31	-1.29	-1.33	-1.39	-1.38	-1.36	-1.34
624250	-1.51	-1.49	-1.47	-1.45	-1.43	-1.42	-1.40	-1.40	-1.52	-1.50	-1.48	-1.46	-1.45	-1.43	-1.41	-1.40	-1.38	-1.36	-1.41	-1.45	-1.45	-1.43	-1.41	-1.40
624300	-1.56	-1.54	-1.52	-1.51	-1.49	-1.47	-1.45	-1.56	-1.57	-1.55	-1.54	-1.52	-1.50	-1.48	-1.47	-1.45	-1.43	-1.41	-1.40	-1.50	-1.50	-1.48	-1.47	-1.45
624350	-1.61	-1.60	-1.58	-1.56	-1.54	-1.52	-1.50	-1.56	-1.63	-1.61	-1.59	-1.57	-1.56	-1.54	-1.52	-1.50	-1.48	-1.47	-1.48	-1.51	-1.56	-1.54	-1.52	-1.50
624400	-1.67	-1.65	-1.63	-1.61	-1.59	-1.58	-1.56	-1.54	-1.68	-1.66	-1.65	-1.63	-1.61	-1.59	-1.57	-1.56	-1.54	-1.54	-1.59	-1.63	-1.61	-1.59	-1.58	-1.56
624450	-1.72	-1.71	-1.69	-1.67	-1.65	-1.63	-1.61	-1.70	-1.74	-1.72	-1.70	-1.68	-1.67	-1.65	-1.63	-1.61	-1.59	-1.57	-1.55	-1.67	-1.67	-1.65	-1.63	-1.61
624500	-1.78	-1.76	-1.74	-1.72	-1.70	-1.68	-1.67	-1.69	-1.75	-1.78	-1.76	-1.74	-1.72	-1.70	-1.68	-1.66	-1.65	-1.63	-1.65	-1.70	-1.72	-1.70	-1.69	-1.67
624550	-1.84	-1.82	-1.80	-1.78	-1.76	-1.74	-1.72	-1.77	-1.85	-1.83	-1.82	-1.80	-1.78	-1.76	-1.74	-1.72	-1.70	-1.68	-1.70	-1.80	-1.78	-1.76	-1.74	-1.72
624600	-1.89	-1.87	-1.86	-1.84	-1.82	-1.80	-1.78	-1.85	-1.91	-1.89	-1.87	-1.85	-1.83	-1.81	-1.79	-1.77	-1.75	-1.74	-1.72	-1.76	-1.81	-1.82	-1.80	-1.78
624650	-1.95	-1.93	-1.91	-1.89	-1.87	-1.85	-1.83	-1.83	-1.97	-1.95	-1.93	-1.91	-1.89	-1.87	-1.85	-1.83	-1.81	-1.79	-1.85	-1.90	-1.89	-1.87	-1.85	-1.83
624700	-2.00	-1.98	-1.97	-1.95	-1.93	-1.91	-1.89	-2.01	-2.03	-2.01	-1.99	-1.97	-1.95	-1.93	-1.91	-1.89	-1.87	-1.85	-1.92	-1.97	-1.95	-1.93	-1.91	-1.89
624750	-1.92	-1.92	-1.88	-1.90	-1.88	-1.85	-1.84	-1.91	-1.97	-2.00	-1.99	-1.98	-1.97	-1.96	-1.95	-1.94	-1.92	-1.90	-1.90	-1.96	-2.01	-1.99	-1.97	-1.95
624800	-1.89	-1.86	-1.84	-1.86	-1.85	-1.81	-1.77	-1.75	-1.87	-1.91	-1.90	-1.89	-1.88	-1.87	-1.86	-1.85	-1.84	-1.86	-1.93	-1.98	-1.97	-1.96	-1.95	-1.95
624850	-1.83	-1.82	-1.82	-1.81	-1.80	-1.79	-1.74	-1.74	-1.76	-1.80	-1.81	-1.80	-1.79	-1.78	-1.77	-1.76	-1.75	-1.75	-1.74	-1.89	-1.88	-1.87	-1.86	-1.86
624900	-1.78	-1.77	-1.76	-1.75	-1.74	-1.73	-1.73	-1.72	-1.71	-1.70	-1.72	-1.71	-1.67	-1.69	-1.69	-1.67	-1.66	-1.66	-1.70	-1.76	-1.79	-1.78	-1.78	-1.77
624950	-1.72	-1.71	-1.70	-1.70	-1.69	-1.68	-1.67	-1.66	-1.65	-1.65	-1.64	-1.63	-1.62	-1.61	-1.61	-1.60	-1.59	-1.59	-1.66	-1.72	-1.71	-1.70	-1.68	-1.68
625000	-1.66	-1.66	-1.65	-1.64	-1.63	-1.62	-1.62	-1.61	-1.60	-1.59	-1.58	-1.57	-1.57	-1.56	-1.55	-1.54	-1.55	-1.62	-1.57	-1.65	-1.62	-1.62	-1.60	-1.59
625050	-1.61	-1.60	-1.59	-1.59	-1.58	-1.57	-1.56	-1.55	-1.55	-1.54	-1.53	-1.52	-1.51	-1.51	-1.54	-1.54	-1.52	-1.61	-1.59	-1.58	-1.55	-1.55	-1.52	-1.52
625100	-1.55	-1.55	-1.54	-1.53	-1.52	-1.52	-1.51	-1.50	-1.49	-1.48	-1.48	-1.47	-1.46	-1.49	-1.47	-1.57	-1.55	-1.54	-1.52	-1.51	-1.49	-1.47	-1.48	-1.53
625150	-1.48	-1.48	-1.49	-1.48	-1.47	-1.46	-1.46	-1.45	-1.44	-1.43	-1.42	-1.42	-1.45	-1.50	-1.47	-1.50	-1.48	-1.47	-1.45	-1.44	-1.42	-1.46	-1.51	-1.55
625200	-1.20	-1.24	-1.32	-1.42	-1.42	-1.41	-1.40	-1.40	-1.39	-1.38	-1.37	-1.37	-1.38	-1.45	-1.44	-1.42	-1.41	-1.40	-1.38	-1.39	-1.43	-1.48	-1.52	-1.57
625250	-0.91	-0.96	-1.04	-1.16	-1.32	-1.36	-1.35	-1.34	-1.34	-1.34	-1.41	-1.36	-1.38	-1.36	-1.37	-1.36	-1.34	-1.33	-1.36	-1.40	-1.45	-1.49	-1.54	-1.58
625300	-0.65	-0.70	-0.79	-0.92	-1.08	-1.28	-1.31	-1.29	-1.37	-1.29	-1.35	-1.34	-1.33	-1.31	-1.30	-1.29	-1.29	-1.33	-1.37	-1.42	-1.46	-1.51	-1.55	-1.63
625350	-0.39	-0.50	-0.60	-0.73	-0.88	-1.12	-1.34	-1.30	-1.34	-1.31	-1.31	-1.29	-1.27	-1.26	-1.24	-1.26	-1.30	-1.35	-1.39	-1.43	-1.48	-1.55	-1.57	-1.69
625400	-0.10	-0.14	-0.33	-0.56	-0.73	-0.93	-1.23	-1.26	-1.25	-1.24	-1.24	-1.23	-1.22	-1.22	-1.24	-1.27	-1.32	-1.36	-1.41	-1.45	-1.51	-1.64	-1.68	-1.73
625450	-0.01	-0.05	-0.11	-0.33	-0.60	-0.84	-1.08	-1.19	-1.18	-1.17	-1.15	-1.14	-1.16	-1.21	-1.25	-1.29	-1.33	-1.38	-1.45	-1.53	-1.54	-1.68	-1.71	-1.76
625500	-0.03	-0.01	-0.05	-0.14	-0.48	-0.71	-0.94	-1.12	-1.11	-1.10	-1.09	-1.13	-1.17	-1.22	-1.26	-1.30	-1.40	-1.43	-1.48	-1.58	-1.63	-1.68	-1.72	-1.77
625550	0.00	-0.03	-0.01	-0.09	-0.29	-0.59	-0.81	-1.05	-1.05	-1.06	-1.10	-1.15	-1.19	-1.23	-1.31	-1.33	-1.43	-1.50	-1.54	-1.60	-1.64	-1.69	-1.74	-1.79
625600	0.00	0.00	-0.03	-0.05	-0.13	-0.44	-0.68	-0.92	-1.03	-1.07	-1.12	-1.16	-1.22	-1.25	-1.38	-1.42	-1.47	-1.52	-1.56	-1.61	-1.66	-1.71	-1.75	-1.80
625650	0.00	0.00	-0.03	0.00	-0.08	-0.27	-0.58	-0.78	-1.02	-1.09	-1.13	-1.17	-1.30	-1.34	-1.39	-1.44	-1.48	-1.53	-1.58	-1.62	-1.67	-1.72	-1.77	-1.82
625700	0.00	0.00	0.00	-0.04	-0.04	-0.13	-0.44	-0.65	-0.88	-1.13	-1.21	-1.25	-1.31	-1.36	-1.40	-1.45	-1.50	-1.54	-1.59	-1.64	-1.69	-1.73	-1.78	-1.83
625750	0.00	0.00	0.00	-0.02	0.00	-0.08	-0.25	-0.54	-0.78	-1.05	-1.23	-1.28	-1.33	-1.37	-1.42	-1.46	-1.51	-1.56	-1.61	-1.65	-1.70	-1.75	-1.80	-1.85
625800	0.00	0.00	0.00	0.00	-0.04	-0.04	-0.12	-0.42	-0.68	-0.91	-1.17	-1.29	-1.34	-1.39	-1.43	-1.48	-1.53	-1.57	-1.62	-1.67	-1.72	-1.76	-1.81	-1.86
625850	0.00	0.00	0.00	0.00	-0.02	0.00	-0.08	-0.24	-0.56	-0.78	-1.02	-1.28	-1.35	-1.40	-1.45	-1.49	-1.54	-1.59	-1.63	-1.68	-1.73	-1.78	-1.83	-1.88
625900	0.00	0.00	0.00	0.00	0.00	-0.04	-0.04	-0.11	-0.40	-0.65	-0.88	-1.13	-1.37	-1.41	-1.46	-1.51	-1.55	-1.60	-1.65	-1.70	-1.75	-1.79	-1.84	-1.90
625950	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.07	-0.22	-0.55	-0.75	-0.99	-1.25	-1.43	-1.47	-1.52	-1.57	-1.62	-1.66	-1.71	-1.76	-1.82	-1.86	-1.92
626000	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.03	-0.11	-0.38	-0.62	-0.85	-1.10	-1.36	-1.49	-1.54	-1.58	-1.63	-1.68	-1.73	-1.78	-1.84	-1.90	-1.96
626050	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.07	-0.21	-0.54	-0.74	-0.95	-1.21	-1.48	-1.55	-1.60	-1.65	-1.72	-1.78	-1.83	-1.89	-1.94	-1.98
626100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.03	-0.11	-0.38	-0.63	-0.82	-1.06	-1.32	-1.57	-1.64	-1.68	-1.73	-1.81	-1.87	-1.92	-1.98	-1.98
626150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.07	-0.20	-0.50	-0.69	-0.92	-1.19	-1.45	-1.67	-1.73	-1.79	-1.85	-1.90	-1.96	-2.01	-1.98
626200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.02	-0.10	-0.33	-0.59	-0.78	-1.08	-1.34	-1.62	-1.77	-1.83	-1.88	-1.94	-1.99	-2.05	-1.98
626250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.06	-0.19	-0.53	-0.70	-0.96	-1.21	-1.49	-1.79	-1.86	-1.92	-1.97	-2.03	-2.05	-1.98
626300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.02	-0.10	-0.34	-0.62	-0.83	-1.08	-1.35	-1.63	-1.90	-1.95	-2.01	-2.07	-2.05	-1.98
626350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.06	-0.17	-0.52	-0.72	-0.95	-1.21	-1.49	-1.78	-1.99	-2.05	-2.10	-2.05	-1.98
626400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.02	-0.10	-0.33	-0.61	-0.83	-1.07	-1.34	-1.63	-1.94	-2.08	-2.12	-2.05	-1.98
626450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.06	-0.16	-0.50	-0.71	-0.95	-1.20	-1.48	-1.78	-2.10	-2.11	-1.99	-1.81
626500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	-0.09	-0.30	-0.59	-0.82	-1.07	-1.34	-1.63	-1.93	-1.87	-1.69	-1.52
626550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.05	-0.16	-0.49	-0.70	-0.94	-1.20	-1.48	-1.75	-1.58	-1.41	-1.25
626600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.01	-0.09	-0.30	-0.60	-0.82	-1.07	-1.34	-1.47	-1.30	-1.15	-1.00
626650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.05	-0.14	-0.47	-0.70	-0.94	-1.20	-1.20	-1.05	-0.90	-0.76
626700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.01	-0.09	-0.28	-0.59	-0.81	-0.98	-0.95	-0.81	-0.68	-0.55
626750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.05	-0.13	-0.42	-0.62	-0.72	-0.70	-0.59	-0.44	-0.24
626800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	0.00	-0.07	-0.15	-0.34	-0.45	-0.43	-0.29	-0.13	-0.08
626850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	0.00	-0.06	-0.10	-0.11	-0.11	-0.09	-0.05	0.00
626900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.01	-0.02	-0.02	0.00	-0.03	-0.02
626950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.04	-0.03	-0.02	0.00	0.00
627000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total Settlement (sheet 4 of 6)

EASTING (ft) \ NORTHING (ft)	1354400	1354350	1354300	1354250	1354200	1354150	1354100	1354050	1354000	1353950	1353900	1353850	1353800	1353750	1353700	1353650	1353600	1353550	1353500	1353450	1353400	1353350	1353300	1353250
623600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623850	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
623900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623950	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09
624000	-0.36	-0.34	-0.36	-0.32	-0.36	-0.36	-0.36	-0.35	-0.36	-0.33	-0.36	-0.36	-0.36	-0.36	-0.35	-0.34	-0.35	-0.35	-0.33	-0.33	-0.34	-0.31	-0.35	-0.35
624050	-0.63	-0.62	-0.64	-0.61	-0.67	-0.67	-0.66	-0.66	-0.65	-0.63	-0.66	-0.65	-0.60	-0.64	-0.66	-0.65	-0.66	-0.65	-0.62	-0.61	-0.63	-0.60	-0.66	-0.66
624100	-0.90	-0.89	-0.88	-0.89	-0.92	-0.93	-0.92	-0.91	-0.90	-0.89	-0.90	-0.88	-0.90	-0.92	-0.93	-0.92	-0.91	-0.90	-0.89	-0.88	-0.87	-0.86	-0.90	-0.93
624150	-1.19	-1.18	-1.16	-1.15	-1.24	-1.23	-1.22	-1.21	-1.20	-1.18	-1.17	-1.20	-1.23	-1.22	-1.22	-1.21	-1.20	-1.19	-1.18	-1.16	-1.15	-1.14	-1.23	-1.21
624200	-1.33	-1.31	-1.29	-1.32	-1.35	-1.35	-1.33	-1.32	-1.30	-1.29	-1.27	-1.25	-1.25	-1.27	-1.30	-1.29	-1.27	-1.25	-1.24	-1.22	-1.21	-1.22	-1.27	-1.26
624250	-1.38	-1.36	-1.35	-1.33	-1.36	-1.40	-1.39	-1.37	-1.35	-1.34	-1.32	-1.31	-1.35	-1.37	-1.35	-1.34	-1.32	-1.31	-1.29	-1.27	-1.26	-1.24	-1.27	-1.32
624300	-1.43	-1.41	-1.40	-1.38	-1.47	-1.46	-1.44	-1.42	-1.41	-1.39	-1.37	-1.36	-1.42	-1.37	-1.40	-1.39	-1.37	-1.36	-1.34	-1.32	-1.31	-1.29	-1.38	-1.37
624350	-1.49	-1.47	-1.45	-1.46	-1.51	-1.51	-1.49	-1.48	-1.46	-1.44	-1.42	-1.41	-1.42	-1.45	-1.46	-1.44	-1.43	-1.41	-1.39	-1.38	-1.36	-1.35	-1.39	-1.42
624400	-1.54	-1.52	-1.50	-1.49	-1.54	-1.57	-1.55	-1.53	-1.51	-1.50	-1.48	-1.50	-1.52	-1.53	-1.52	-1.50	-1.48	-1.46	-1.44	-1.43	-1.41	-1.39	-1.46	-1.47
624450	-1.59	-1.57	-1.56	-1.60	-1.63	-1.62	-1.60	-1.59	-1.57	-1.55	-1.53	-1.51	-1.50	-1.52	-1.57	-1.55	-1.53	-1.52	-1.50	-1.48	-1.46	-1.50	-1.54	-1.53
624500	-1.65	-1.63	-1.61	-1.61	-1.64	-1.68	-1.66	-1.64	-1.62	-1.60	-1.58	-1.57	-1.60	-1.62	-1.62	-1.61	-1.59	-1.57	-1.55	-1.53	-1.51	-1.50	-1.54	-1.58
624550	-1.70	-1.68	-1.66	-1.65	-1.75	-1.73	-1.71	-1.70	-1.68	-1.66	-1.64	-1.62	-1.70	-1.66	-1.68	-1.66	-1.64	-1.62	-1.61	-1.59	-1.57	-1.55	-1.66	-1.64
624600	-1.76	-1.74	-1.72	-1.74	-1.79	-1.79	-1.77	-1.75	-1.73	-1.71	-1.69	-1.67	-1.67	-1.71	-1.74	-1.72	-1.70	-1.68	-1.66	-1.64	-1.62	-1.62	-1.69	-1.69
624650	-1.81	-1.80	-1.78	-1.76	-1.80	-1.85	-1.83	-1.81	-1.79	-1.77	-1.75	-1.75	-1.78	-1.81	-1.79	-1.77	-1.75	-1.73	-1.71	-1.70	-1.68	-1.66	-1.69	-1.75
624700	-1.87	-1.85	-1.83	-1.81	-1.92	-1.90	-1.88	-1.86	-1.84	-1.82	-1.80	-1.79	-1.77	-1.83	-1.85	-1.83	-1.81	-1.79	-1.77	-1.75	-1.73	-1.71	-1.83	-1.81
624750	-1.93	-1.91	-1.89	-1.91	-1.94	-1.96	-1.94	-1.92	-1.90	-1.88	-1.86	-1.84	-1.86	-1.89	-1.91	-1.89	-1.87	-1.85	-1.83	-1.81	-1.79	-1.78	-1.83	-1.86
624800	-1.94	-1.93	-1.92	-1.91	-2.01	-2.02	-2.00	-1.98	-1.96	-1.94	-1.92	-1.90	-1.97	-1.98	-1.96	-1.94	-1.92	-1.90	-1.88	-1.86	-1.84	-1.82	-1.90	-1.92
624850	-1.85	-1.84	-1.83	-1.87	-1.94	-1.95	-1.97	-1.92	-1.91	-1.90	-1.89	-1.88	-1.87	-1.99	-1.98	-1.97	-1.96	-1.95	-1.94	-1.92	-1.90	-1.95	-1.99	-1.98
624900	-1.76	-1.75	-1.74	-1.73	-1.84	-1.96	-1.94	-1.85	-1.82	-1.81	-1.80	-1.80	-1.84	-1.88	-1.89	-1.88	-1.87	-1.88	-1.85	-1.84	-1.83	-1.83	-1.88	-1.94
624950	-1.67	-1.66	-1.66	-1.71	-1.90	-1.96	-1.90	-1.81	-1.73	-1.72	-1.71	-1.72	-1.80	-1.81	-1.80	-1.79	-1.78	-1.77	-1.76	-1.76	-1.75	-1.74	-1.86	-1.84
625000	-1.59	-1.61	-1.66	-1.72	-1.85	-1.95	-1.86	-1.78	-1.70	-1.63	-1.63	-1.62	-1.63	-1.71	-1.71	-1.70	-1.69	-1.69	-1.68	-1.67	-1.66	-1.71	-1.77	-1.73
625050	-1.56	-1.61	-1.67	-1.72	-1.82	-1.91	-1.83	-1.74	-1.66	-1.58	-1.54	-1.56	-1.60	-1.63	-1.63	-1.62	-1.61	-1.64	-1.64	-1.58	-1.67	-1.66	-1.68	-1.67
625100	-1.57	-1.62	-1.67	-1.72	-1.91	-1.87	-1.79	-1.71	-1.63	-1.55	-1.47	-1.45	-1.53	-1.48	-1.47	-1.53	-1.48	-1.53	-1.63	-1.60	-1.63	-1.62	-1.62	-1.62
625150	-1.58	-1.64	-1.67	-1.77	-1.87	-1.84	-1.77	-1.67	-1.59	-1.52	-1.45	-1.38	-1.38	-1.40	-1.40	-1.40	-1.40	-1.41	-1.41	-1.49	-1.57	-1.57	-1.57	-1.57
625200	-1.61	-1.66	-1.72	-1.80	-1.88	-1.81	-1.75	-1.65	-1.59	-1.52	-1.45	-1.39	-1.35	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-1.50	-1.52	-1.52	-1.52	-1.52
625250	-1.63	-1.72	-1.80	-1.76	-1.76	-1.81	-1.74	-1.66	-1.59	-1.52	-1.45	-1.39	-1.32	-1.31	-1.31	-1.31	-1.31	-1.31	-1.32	-1.34	-1.47	-1.47	-1.47	-1.47
625300	-1.65	-1.75	-1.84	-1.79	-1.79	-1.81	-1.74	-1.67	-1.59	-1.52	-1.46	-1.39	-1.32	-1.26	-1.27	-1.27	-1.27	-1.27	-1.27	-1.29	-1.40	-1.42	-1.42	-1.42
625350	-1.78	-1.80	-1.83	-1.81	-1.76	-1.72	-1.70	-1.67	-1.60	-1.53	-1.46	-1.39	-1.32	-1.26	-1.22	-1.22	-1.22	-1.22	-1.23	-1.28	-1.38	-1.37	-1.37	-1.37
625400	-1.79	-1.84	-1.85	-1.81	-1.73	-1.66	-1.73	-1.67	-1.60	-1.53	-1.46	-1.39	-1.32	-1.26	-1.19	-1.18	-1.18	-1.18	-1.18	-1.18	-1.28	-1.32	-1.32	-1.32
625450	-1.81	-1.85	-1.86	-1.81	-1.74	-1.66	-1.68	-1.64	-1.60	-1.53	-1.46	-1.39	-1.32	-1.26	-1.19	-1.13	-1.13	-1.14	-1.14	-1.14	-1.14	-1.21	-1.27	-1.27
625500	-1.82	-1.87	-1.88	-1.81	-1.74	-1.66	-1.59	-1.59	-1.60	-1.53	-1.46	-1.39	-1.32	-1.26	-1.20	-1.13	-1.09	-1.09	-1.09	-1.10	-1.19	-1.23	-1.23	-1.22
625550	-1.84	-1.88	-1.89	-1.81	-1.74	-1.67	-1.60	-1.62	-1.60	-1.53	-1.46	-1.39	-1.32	-1.26	-1.20	-1.13	-1.07	-1.05	-1.05	-1.05	-1.08	-1.10	-1.13	-1.17
625600	-1.85	-1.90	-1.89	-1.81	-1.74	-1.67	-1.60	-1.53	-1.47	-1.53	-1.46	-1.39	-1.33	-1.26	-1.20	-1.13	-1.07	-1.01	-1.01	-1.01	-1.01	-1.01	-1.13	-1.13
625650	-1.87	-1.94	-1.89	-1.81	-1.74	-1.67	-1.60	-1.53	-1.47	-1.53	-1.46	-1.39	-1.33	-1.26	-1.20	-1.13	-1.07	-1.01	-0.97	-0.97	-0.97	-1.02	-1.05	-1.08
625700	-1.88	-1.97	-1.89	-1.82	-1.74	-1.67	-1.60	-1.53	-1.47	-1.43	-1.41	-1.39	-1.33	-1.26	-1.20	-1.13	-1.07	-1.01	-0.95	-0.92	-0.93	-0.93	-0.99	-1.04
625750	-1.93	-1.97	-1.89	-1.82	-1.74	-1.67	-1.60	-1.53	-1.46	-1.39	-1.45	-1.39	-1.32	-1.26	-1.20	-1.13	-1.07	-1.01	-0.95	-0.89	-0.88	-0.90	-0.98	-0.99
625800	-1.98	-1.97	-1.89	-1.82	-1.74	-1.67	-1.60	-1.53	-1.46	-1.40	-1.40	-1.36	-1.32	-1.26	-1.19	-1.13	-1.07	-1.01	-0.95	-0.89	-0.84	-0.84	-0.85	-0.93
625850	-2.05	-1.97	-1.89	-1.82	-1.74	-1.67	-1.60	-1.53	-1.46	-1.39	-1.33	-1.33	-1.32	-1.26	-1.19	-1.13	-1.07	-1.01	-0.95	-0.89	-0.83	-0.80	-0.82	-0.90
625900	-2.05	-1.97	-1.89	-1.82	-1.74	-1.67	-1.60	-1.53	-1.46	-1.39	-1.33	-1.35	-1.32	-1.26	-1.19	-1.13	-1.07	-1.01	-0.95	-0.89	-0.83	-0.77	-0.76	-0.78
625950	-1.93	-1.94	-1.89	-1.82	-1.75	-1.67	-1.60	-1.53	-1.46	-1.39	-1.33	-1.26	-1.20	-1.26	-1.19	-1.13	-1.07	-1.01	-0.95	-0.89	-0.83	-0.77	-0.72	-0.71
626000	-1.91	-1.90	-1.89	-1.82	-1.75	-1.67	-1.60	-1.53	-1.46	-1.39	-1.33	-1.26	-1.24	-1.26	-1.19	-1.13	-1.07	-1.00	-0.94	-0.89	-0.83	-0.78	-0.64	-0.50
626050	-1.99	-1.96	-1.88	-1.82	-1.75	-1.67	-1.60	-1.53	-1.46	-1.39	-1.33	-1.26	-1.20	-1.16	-1.18	-1.13	-1.06	-1.00	-0.94	-0.83	-0.69	-0.59	-0.46	-0.25
626100	-1.95	-1.89	-1.82	-1.80	-1.75	-1.67	-1.60	-1.53	-1.46	-1.39	-1.33	-1.26	-1.20	-1.13	-1.19	-1.12	-1.04	-0.89	-0.75	-0.63	-0.49	-0.29	-0.14	-0.08
626150	-1.92	-1.90	-1.87	-1.82	-1.75	-1.67	-1.60	-1.53	-1.46	-1.39	-1.33	-1.26	-1.20	-1.13	-1.04	-0.91	-0.80	-0.66	-0.53	-0.36	-0.17	-0.09	-0.05	0.00
626200	-1.91	-1.87	-1.82	-1.75	-1.74	-1.67	-1.60	-1.53	-1.46	-1.39	-1.33	-1.22	-1.06	-0.91	-0.78	-0.66	-0.58	-0.42	-0.22	-0.11	-0.06	-0.02	-0.03	-0.03
626250	-1.91	-1.85	-1.78	-1.76	-1.74	-1.67	-1.60	-1.53	-1.45	-1.29	-1.12	-0.97	-0.82	-0.68	-0.61	-0.48	-0.28	-0.12	-0.08	-0.03	-0.01	-0.04	0.00	0.00
626300	-1.91	-1.85	-1.78	-1.75	-1.68	-1.67	-1.53	-1.35	-1.19	-1.03	-0.88	-0.74	-0.62	-0.50	-0.30	-0.15	-0.09	-0.04	0.00	-0.04	-0.01	0.00	0.00	0.00
626350	-1.91	-1.85	-1.78	-1.69	-1.55	-1.42	-1.26	-1.09	-0.94	-0.80	-0.67	-0.53	-0.37	-0.19	-0.10	-0.06	-0.01	-0.04	-0.02	0.00	0.00	0.00	0.00	0.00
626400	-1.91	-1.75	-1.58	-1.41	-1.28	-1.10	-1.00	-0.85	-0.72	-0.59	-0.45	-0.24	-0.11	-0.07	-0.02	-0.02	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626450	-1.83	-1.47	-1.30	-1.15	-1.00	-0.86	-0.74	-0.63	-0.50	-0.29	-0.13	-0.08	-0.04	0.00	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626500	-1.36	-1.20	-1.05	-0.90	-0.76	-0.64	-0.54	-0.38	-0.17	-0.09	-0.05	0.00	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626550	-1.10	-0.95	-0.82	-0.69	-0.57	-0.42	-0.22	-0.10	-0.06	-0.01	-0.03	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626600	-0.86	-0.72	-0.61	-0.48	-0.27	-0.12	-0.07	-0.03	-0.01	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626650	-0.63	-0.51	-0.32	-0.14	-0.09	-0.04	0.00	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626700	-0.38	-0.19	-0.10	-0.05	-0.01	-0.04	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626750	-0.11	-0.07	-0.02	-0.02	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626800	-0.03	0.00	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626850	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total Settlement (sheet 5 of 6)

EASTING (ft) \ NORTHING (ft)	1353200	1353150	1353100	1353050	1353000	1352950	1352900	1352850	1352800	1352750	1352700	1352650	1352600	1352550	1352500	1352450	1352400	1352350	1352300	1352250	1352200	1352150	1352100	1352050
623600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623850	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
623900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623950	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09
624000	-0.34	-0.34	-0.35	-0.35	-0.32	-0.33	-0.32	-0.31	-0.34	-0.34	-0.34	-0.33	-0.34	-0.34	-0.32	-0.32	-0.32	-0.30	-0.34	-0.34	-0.31	-0.30	-0.33	-0.33
624050	-0.65	-0.64	-0.65	-0.64	-0.61	-0.62	-0.60	-0.59	-0.63	-0.63	-0.65	-0.64	-0.65	-0.64	-0.61	-0.61	-0.62	-0.59	-0.62	-0.59	-0.57	-0.59	-0.64	-0.64
624100	-0.92	-0.91	-0.90	-0.89	-0.88	-0.87	-0.86	-0.85	-0.84	-0.90	-0.92	-0.91	-0.90	-0.89	-0.88	-0.87	-0.86	-0.85	-0.85	-0.83	-0.84	-0.85	-0.86	-0.87
624150	-1.19	-1.17	-1.15	-1.14	-1.12	-1.11	-1.10	-1.08	-1.16	-1.17	-1.16	-1.15	-1.14	-1.13	-1.12	-1.11	-1.10	-1.08	-1.07	-1.06	-1.08	-1.09	-1.11	-1.12
624200	-1.25	-1.23	-1.22	-1.20	-1.18	-1.17	-1.15	-1.14	-1.14	-1.22	-1.21	-1.20	-1.19	-1.18	-1.17	-1.16	-1.14	-1.13	-1.12	-1.11	-1.12	-1.15	-1.16	-1.17
624250	-1.30	-1.28	-1.27	-1.25	-1.23	-1.22	-1.20	-1.19	-1.20	-1.27	-1.26	-1.25	-1.24	-1.23	-1.22	-1.21	-1.19	-1.18	-1.17	-1.17	-1.18	-1.20	-1.21	-1.23
624300	-1.35	-1.33	-1.32	-1.30	-1.28	-1.27	-1.25	-1.23	-1.30	-1.33	-1.32	-1.30	-1.29	-1.28	-1.27	-1.26	-1.24	-1.23	-1.22	-1.21	-1.24	-1.25	-1.27	-1.28
624350	-1.40	-1.39	-1.37	-1.35	-1.34	-1.32	-1.30	-1.29	-1.27	-1.38	-1.37	-1.36	-1.34	-1.33	-1.32	-1.31	-1.30	-1.28	-1.27	-1.26	-1.28	-1.31	-1.32	-1.34
624400	-1.46	-1.44	-1.42	-1.41	-1.39	-1.37	-1.35	-1.34	-1.39	-1.43	-1.42	-1.41	-1.40	-1.38	-1.37	-1.36	-1.35	-1.33	-1.32	-1.31	-1.33	-1.36	-1.38	-1.39
624450	-1.51	-1.49	-1.48	-1.46	-1.44	-1.42	-1.40	-1.39	-1.43	-1.49	-1.47	-1.46	-1.45	-1.44	-1.42	-1.41	-1.40	-1.39	-1.37	-1.36	-1.39	-1.42	-1.44	-1.45
624500	-1.56	-1.55	-1.53	-1.51	-1.49	-1.47	-1.46	-1.44	-1.43	-1.50	-1.53	-1.52	-1.50	-1.49	-1.48	-1.46	-1.45	-1.44	-1.42	-1.44	-1.46	-1.48	-1.49	-1.51
624550	-1.62	-1.60	-1.58	-1.56	-1.55	-1.53	-1.51	-1.49	-1.50	-1.60	-1.58	-1.57	-1.58	-1.54	-1.53	-1.52	-1.50	-1.49	-1.48	-1.47	-1.51	-1.53	-1.55	-1.57
624600	-1.67	-1.66	-1.64	-1.62	-1.60	-1.58	-1.56	-1.54	-1.54	-1.65	-1.64	-1.62	-1.61	-1.60	-1.58	-1.57	-1.56	-1.54	-1.53	-1.52	-1.54	-1.59	-1.61	-1.63
624650	-1.73	-1.71	-1.69	-1.67	-1.65	-1.64	-1.62	-1.60	-1.62	-1.70	-1.69	-1.68	-1.66	-1.65	-1.64	-1.62	-1.61	-1.60	-1.58	-1.61	-1.63	-1.65	-1.67	-1.69
624700	-1.79	-1.77	-1.75	-1.73	-1.71	-1.69	-1.67	-1.65	-1.72	-1.76	-1.75	-1.73	-1.72	-1.71	-1.69	-1.68	-1.66	-1.65	-1.64	-1.62	-1.69	-1.71	-1.73	-1.75
624750	-1.84	-1.82	-1.80	-1.78	-1.76	-1.74	-1.73	-1.71	-1.69	-1.80	-1.80	-1.79	-1.78	-1.76	-1.75	-1.73	-1.72	-1.71	-1.69	-1.68	-1.73	-1.78	-1.80	-1.82
624800	-1.90	-1.88	-1.86	-1.84	-1.82	-1.80	-1.78	-1.76	-1.83	-1.88	-1.86	-1.85	-1.83	-1.82	-1.80	-1.79	-1.78	-1.76	-1.75	-1.77	-1.82	-1.85	-1.87	-1.89
624850	-1.96	-1.94	-1.92	-1.90	-1.88	-1.86	-1.84	-1.82	-1.87	-1.93	-1.92	-1.90	-1.89	-1.88	-1.86	-1.85	-1.83	-1.82	-1.80	-1.79	-1.84	-1.91	-1.94	-1.96
624900	-1.94	-1.93	-1.92	-1.91	-1.90	-1.89	-1.84	-1.86	-1.86	-1.95	-1.99	-1.97	-1.95	-1.94	-1.93	-1.90	-1.90	-1.88	-1.86	-1.85	-1.90	-1.98	-1.98	-2.02
624950	-1.85	-1.84	-1.80	-1.79	-1.80	-1.76	-1.74	-1.75	-1.77	-1.84	-1.91	-1.92	-1.90	-1.89	-1.87	-1.86	-1.84	-1.83	-1.81	-1.80	-1.83	-1.88	-1.90	-1.94
625000	-1.76	-1.74	-1.71	-1.70	-1.70	-1.70	-1.69	-1.69	-1.87	-1.78	-1.87	-1.86	-1.84	-1.83	-1.81	-1.80	-1.79	-1.77	-1.76	-1.76	-1.79	-1.81	-1.84	-1.86
625050	-1.66	-1.66	-1.66	-1.65	-1.65	-1.65	-1.64	-1.64	-1.71	-1.78	-1.82	-1.80	-1.79	-1.77	-1.76	-1.74	-1.73	-1.72	-1.70	-1.70	-1.72	-1.75	-1.77	-1.79
625100	-1.61	-1.61	-1.61	-1.60	-1.60	-1.60	-1.59	-1.62	-1.66	-1.77	-1.76	-1.74	-1.73	-1.72	-1.70	-1.69	-1.68	-1.66	-1.65	-1.63	-1.66	-1.68	-1.70	-1.72
625150	-1.56	-1.56	-1.56	-1.55	-1.55	-1.55	-1.54	-1.60	-1.65	-1.72	-1.70	-1.69	-1.68	-1.66	-1.65	-1.63	-1.62	-1.61	-1.59	-1.60	-1.60	-1.62	-1.64	-1.66
625200	-1.51	-1.51	-1.51	-1.50	-1.50	-1.50	-1.49	-1.49	-1.49	-1.64	-1.65	-1.63	-1.62	-1.61	-1.59	-1.58	-1.57	-1.55	-1.54	-1.53	-1.54	-1.56	-1.57	-1.59
625250	-1.46	-1.46	-1.46	-1.45	-1.45	-1.45	-1.44	-1.45	-1.59	-1.60	-1.59	-1.58	-1.57	-1.55	-1.54	-1.53	-1.51	-1.50	-1.50	-1.50	-1.51	-1.51	-1.52	-1.53
625300	-1.41	-1.41	-1.41	-1.41	-1.40	-1.40	-1.40	-1.39	-1.41	-1.53	-1.54	-1.52	-1.51	-1.50	-1.49	-1.47	-1.46	-1.45	-1.44	-1.45	-1.46	-1.46	-1.47	-1.47
625350	-1.37	-1.36	-1.36	-1.36	-1.35	-1.35	-1.35	-1.35	-1.41	-1.50	-1.48	-1.47	-1.46	-1.45	-1.43	-1.42	-1.41	-1.40	-1.38	-1.37	-1.39	-1.41	-1.42	-1.42
625400	-1.32	-1.31	-1.31	-1.31	-1.31	-1.30	-1.30	-1.30	-1.38	-1.44	-1.43	-1.42	-1.41	-1.39	-1.38	-1.37	-1.36	-1.34	-1.33	-1.34	-1.34	-1.36	-1.37	-1.37
625450	-1.27	-1.27	-1.26	-1.26	-1.26	-1.26	-1.25	-1.25	-1.28	-1.39	-1.38	-1.36	-1.35	-1.34	-1.33	-1.32	-1.31	-1.29	-1.28	-1.29	-1.30	-1.31	-1.32	-1.33
625500	-1.22	-1.22	-1.22	-1.21	-1.21	-1.21	-1.21	-1.22	-1.30	-1.34	-1.32	-1.31	-1.30	-1.29	-1.28	-1.27	-1.25	-1.24	-1.23	-1.22	-1.24	-1.27	-1.28	-1.28
625550	-1.18	-1.17	-1.17	-1.17	-1.17	-1.16	-1.16	-1.16	-1.15	-1.28	-1.27	-1.26	-1.25	-1.24	-1.23	-1.22	-1.20	-1.19	-1.18	-1.20	-1.22	-1.22	-1.23	-1.23
625600	-1.13	-1.13	-1.12	-1.12	-1.12	-1.12	-1.11	-1.11	-1.11	-1.19	-1.22	-1.21	-1.20	-1.19	-1.18	-1.17	-1.15	-1.14	-1.13	-1.12	-1.16	-1.18	-1.18	-1.19
625650	-1.08	-1.08	-1.08	-1.08	-1.07	-1.07	-1.07	-1.11	-1.18	-1.13	-1.17	-1.16	-1.15	-1.14	-1.13	-1.12	-1.11	-1.10	-1.09	-1.09	-1.13	-1.13	-1.14	-1.14
625700	-1.04	-1.03	-1.03	-1.03	-1.03	-1.03	-0.98	-0.94	-0.93	-0.97	-0.97	-0.96	-0.95	-0.94	-0.93	-0.92	-0.91	-0.90	-0.90	-0.90	-0.93	-0.94	-0.95	-0.95
625750	-0.99	-0.99	-0.99	-0.99	-0.98	-0.84	-0.75	-0.69	-0.62	-0.66	-0.70	-0.69	-0.70	-0.68	-0.66	-0.65	-0.66	-0.64	-0.67	-0.63	-0.66	-0.68	-0.69	-0.70
625800	-0.95	-0.94	-0.94	-0.91	-0.76	-0.65	-0.56	-0.47	-0.42	-0.42	-0.42	-0.40	-0.42	-0.42	-0.39	-0.40	-0.40	-0.37	-0.42	-0.42	-0.42	-0.42	-0.42	-0.43
625850	-0.90	-0.90	-0.83	-0.68	-0.54	-0.42	-0.24	-0.12	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11
625900	-0.86	-0.74	-0.62	-0.49	-0.29	-0.13	-0.08	-0.04	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
625950	-0.64	-0.53	-0.33	-0.16	-0.09	-0.04	0.00	-0.04	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.04	-0.03
626000	-0.37	-0.20	-0.10	-0.06	-0.01	-0.03	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.04	-0.03
626050	-0.11	-0.07	-0.02	-0.02	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.04	-0.03
626100	-0.04	0.00	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.03	-0.02
626150	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.03	-0.02
626200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.03	-0.02
626250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.03	-0.02
626300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.03	-0.02
626350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.02	-0.02
626400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02	-0.02
626450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02	-0.02
626500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02	-0.02
626550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02	-0.02
626600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.02
626650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
626700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
626750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
626800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
626850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01
626900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total Settlement (sheet 6 of 6)

EASTING (ft)	NORTHING (ft) 1352000	1351950	1351900	1351850	1351800	1351750	1351700	1351650	1351600	1351550	1351500	1351450	1351400	1351350	1351300	1351250	1351200	1351150	1351100
623600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623900	0.00	-0.03	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623950	-0.08	-0.06	-0.01	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624000	-0.30	-0.17	-0.09	-0.03	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624050	-0.61	-0.50	-0.24	-0.09	-0.03	-0.03	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624100	-0.83	-0.68	-0.52	-0.25	-0.10	-0.03	-0.03	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624150	-1.05	-0.86	-0.69	-0.52	-0.25	-0.10	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624200	-1.19	-1.06	-0.87	-0.69	-0.53	-0.27	-0.10	-0.04	-0.02	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624250	-1.24	-1.26	-1.08	-0.88	-0.70	-0.54	-0.28	-0.10	-0.04	-0.02	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624300	-1.30	-1.31	-1.29	-1.09	-0.90	-0.71	-0.55	-0.30	-0.11	-0.05	-0.01	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624350	-1.35	-1.37	-1.38	-1.31	-1.10	-0.91	-0.73	-0.56	-0.31	-0.11	-0.05	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624400	-1.41	-1.43	-1.44	-1.46	-1.33	-1.12	-0.92	-0.74	-0.57	-0.30	-0.09	-0.01	-0.03	0.00	0.00	0.00	0.00	0.00	0.00
624450	-1.47	-1.48	-1.50	-1.51	-1.53	-1.34	-1.13	-0.94	-0.73	-0.50	-0.14	-0.04	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624500	-1.53	-1.54	-1.56	-1.57	-1.59	-1.58	-1.36	-1.09	-0.81	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624550	-1.58	-1.60	-1.62	-1.63	-1.65	-1.67	-1.39	-1.09	-0.81	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624600	-1.64	-1.66	-1.68	-1.70	-1.72	-1.71	-1.39	-1.08	-0.80	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624650	-1.71	-1.73	-1.74	-1.76	-1.78	-1.71	-1.38	-1.08	-0.80	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624700	-1.77	-1.79	-1.81	-1.83	-1.85	-1.70	-1.38	-1.07	-0.80	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624750	-1.84	-1.86	-1.88	-1.90	-1.92	-1.70	-1.37	-1.07	-0.79	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624800	-1.91	-1.93	-1.95	-1.97	-1.99	-1.69	-1.37	-1.07	-0.79	-0.54	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624850	-1.97	-1.99	-2.00	-2.04	-2.02	-1.69	-1.35	-1.06	-0.78	-0.53	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624900	-2.02	-2.06	-2.06	-2.11	-2.00	-1.68	-1.33	-1.05	-0.77	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
624950	-1.95	-1.99	-1.99	-2.03	-1.99	-1.66	-1.33	-1.04	-0.78	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625000	-1.88	-1.90	-1.92	-1.94	-1.96	-1.65	-1.33	-1.03	-0.76	-0.51	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625050	-1.81	-1.83	-1.85	-1.87	-1.89	-1.66	-1.33	-1.04	-0.76	-0.53	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625100	-1.74	-1.76	-1.78	-1.81	-1.83	-1.66	-1.34	-1.04	-0.77	-0.54	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625150	-1.68	-1.70	-1.72	-1.74	-1.76	-1.67	-1.34	-1.04	-0.77	-0.54	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625200	-1.61	-1.63	-1.65	-1.67	-1.69	-1.67	-1.35	-1.05	-0.77	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625250	-1.55	-1.57	-1.59	-1.61	-1.63	-1.64	-1.35	-1.05	-0.78	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625300	-1.49	-1.50	-1.52	-1.54	-1.56	-1.58	-1.36	-1.06	-0.79	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625350	-1.43	-1.44	-1.46	-1.48	-1.50	-1.52	-1.36	-1.06	-0.79	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625400	-1.38	-1.38	-1.40	-1.42	-1.43	-1.45	-1.37	-1.06	-0.79	-0.53	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625450	-1.33	-1.34	-1.34	-1.35	-1.37	-1.39	-1.37	-1.07	-0.79	-0.54	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625500	-1.28	-1.29	-1.29	-1.30	-1.31	-1.33	-1.34	-1.07	-0.79	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625550	-1.24	-1.24	-1.25	-1.25	-1.25	-1.27	-1.26	-1.08	-0.80	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625600	-1.19	-1.19	-1.20	-1.20	-1.21	-1.21	-1.22	-1.08	-0.80	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625650	-1.15	-1.15	-1.15	-1.16	-1.16	-1.17	-1.17	-1.08	-0.80	-0.55	-0.18	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625700	-0.95	-0.96	-0.96	-0.97	-0.97	-0.97	-0.98	-0.92	-0.72	-0.49	-0.14	-0.04	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
625750	-0.70	-0.69	-0.69	-0.70	-0.70	-0.71	-0.71	-0.68	-0.56	-0.29	-0.09	-0.01	-0.03	0.00	0.00	0.00	0.00	0.00	0.00
625800	-0.43	-0.41	-0.42	-0.43	-0.43	-0.43	-0.43	-0.39	-0.25	-0.11	-0.04	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625850	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.10	-0.08	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625900	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	0.00	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625950	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626000	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626050	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626100	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626150	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626200	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626250	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626300	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626350	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626400	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626450	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626500	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626550	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626600	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626650	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626700	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626750	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626800	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626850	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626950	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Written by: STEVEN DALL Date: 02/04/30 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___

Client: OMNI Project: OLD FACILITY Project/Proposal No.: FW0400 Task No.: 03

TOTAL SETTLEMENT

$$S_{TOTAL} = S_{SUB\text{-}GRADE} + S_{UNDIFF.} + S_{HAWTORNE}$$

SETTLEMENT OF SUBGRADE FILL

$$S_{SUB\text{-}GRADE} = H_0 \frac{\Delta\sigma_{WASTE}}{E} SF$$

$H_0 = (89\text{ ft} - 80\text{ ft}) = 9.0\text{ ft}$

$E = \frac{G_{MAX}}{3}[2(1+\nu)]$ { EQUATION 8 OF "GEOTECH INVEST. REPORT"

$G_{MAX} = 1000\, K_2 (\sigma_m)^{1/2}$ { EQUATION 9 OF "GEOTECHNICAL INVEST. REPORT"

NOTE: σ_m CALCULATED AT DEPTH OF $\left(\frac{H_0}{2}\right)$

$$\sigma_m = \frac{1}{3}\left(\frac{\gamma_{SUB\text{-}FILL} H_0}{2} + 0.5\frac{\gamma_{SUB\text{-}FILL} H_0}{2} + 0.5\frac{\gamma_{SUB} H_0}{2}\right)$$

$$\sigma_m = \frac{1}{3}\left(\gamma_{SUB\text{-}FILL} H_0\right)$$

$$G_{MAX} = 1000\, K_2 \left(\frac{\gamma_{SUB\text{-}FILL} H_0}{3}\right)^{\frac{1}{2}}$$

$$E = \frac{1}{3}\left[1000\, K_2 \left(\frac{\gamma_{SUB\text{-}FILL} H_0}{3}\right)^{\frac{1}{2}}\right][2(1+\nu)]$$

$$E = \frac{1}{3}\left[1000\,(70)\left(\frac{(120\text{ pcf})(9\text{ ft})}{3}\right)^{\frac{1}{2}}\right][2(1+0.3)]$$

$$E = 1{,}151{,}069\text{ lb/ft}^2$$

$$S_{SUB\text{-}GRADE} = (9\text{ ft})\frac{4636\text{ lb/ft}^2}{(1151069\text{ lb/ft}^2)}(1.5)$$

$$S_{SUB\text{-}GRADE} = 0.054\text{ ft}$$

Written by: STEVEN DAPP Date: 02/04/30 (YY MM DD) Reviewed by: _____ Date: __/__/__ (YY MM DD)

Client: OMNI Project: OHD FACILITY Project/Proposal No.: FW0400 Task No.: 03

SETTLEMENT OF POST-HAWTHORN UNDIFF SANDS

$$S_{UNDIFF\text{-}SANDS} = \sum_{i=1}^{16} H_{0,i} \frac{\Delta\sigma_{WASTE}}{E_i} SF \quad \text{EQUATION 3}$$

NOTE THAT E_i's ARE SHOWN IN FIGURE 4, AND WERE CALCULATED IN "GEOTECH. INVEG. REPORT"

$$S_{UNDIFF\text{-}SANDS} = (1.5)(4{,}636\ lb/ft^2) * \left\{ \frac{(10\ ft)}{(744695\ PSF)} + \frac{(10\ ft)}{(834085\ PSF)} + \frac{(10\ ft)}{(923475\ PSF)} + \frac{(10\ ft)}{(1012865\ PSF)} + \frac{(10\ ft)}{(1102255\ PSF)} + \frac{(10\ ft)}{(1191645\ PSF)} + \frac{(10\ ft)}{(1281035\ PSF)} + \frac{(10\ ft)}{(1370425\ PSF)} + \frac{(10\ ft)}{(1459815\ PSF)} + \left[\frac{(10\ ft)}{(1500000\ PSF)}\right] * 6 + \left(\frac{(5\ ft)}{(1500000\ PSF)}\right) \right\}$$

$$S_{UNDIFF\text{-}SANDS} = 0.896\ ft$$

$S_{UNDIFF\text{-}SANDS} = 0.8979\ ft$ ← FROM SPREADSHEET SOLN.

∴ O.K. ✓✓

Written by: STEVEN HARR Date: 02/04/30 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___

Client: OMNI Project: OAD FACILITY Project/Proposal No.: FW0400 Task No.: 03

SETTLEMENT HAWTHORN

$$S_{HAWTHORN} = \sum_{i=1}^{4} H_{o,i} \frac{\Delta\sigma_{WASTE}}{E_i} SF$$ ← EQUATION 3 FOR FOUR COARSE-GRAIN LAYERS

$$+ H_o C_{Cc} \log\left[\frac{\sigma'_{INITIAL} + \Delta\sigma_{SLAG\,GRADE + WASTE}}{\sigma'_{INITIAL}}\right] SF$$ ← EQUATION 4 FOR TWO FINE-GRAIN LAYERS

NOTE: (1) THAT E_i's FOR COARSE-GRAIN LAYER'S IS SHOWN IN FIGURE 4 AND WERE CALCULATED IN "GEOTECH. INVEST. REPORT"

(2) C_{Cc} WAS GIVEN AS 0.10 FOR THE FINE-GRAINE LAYER'S IN "GEOTECH INVEST. REPORT"

$$S_{HAWTHORN} = (1.5)(4,636\ lb/ft^2) * \left\{ \frac{(34.65\ ft)}{(2290557\ PSF)} + \frac{(34.65\ ft)}{(2556631\ PSF)} + \frac{(32.3\ ft)}{(2748723\ PSF)} + \frac{(32.3\ ft)}{(2939820\ PSF)} \right\}$$

$$+ (7.7\ ft)(0.10) \log\left[\frac{(10178\ PSF) + (4636\ PSF + 1018\ PSF)}{(10178\ PSF)}\right](1.5)$$

$$+ (3.4\ ft)(0.10) \log\left[\frac{(13992\ PSF) + (4636\ PSF + 1018\ PSF)}{(13992\ PSF)}\right](1.5)$$

$$S_{HAWTHORN} = \underbrace{0.358\ ft}_{\text{COARSE GRAIN}} + \underbrace{0.297\ ft}_{\text{FINE-GRAIN}}$$

$$S_{HAWTHORN} = 0.654\ ft$$

$S_{HAWTHORN} = 0.657\ ft$ ← FROM SPREADSHEET SOLN.

∴ O.K. ✓✓

Written by: STEVEN PARP Date: 02/04/30 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___ (YY/MM/DD)

Client: OMNI Project: OHIO FACILITY Project/Proposal No.: FW0400 Task No.: 03

$S_{TOTAL} = S_{SUB-GRADE} + S_{SANDIFF-SANDS} + S_{HAWTHORN}$

$S_{TOTAL} = (0.054\ ft) + (0.896\ ft) + (0.654\ ft)$

$\boxed{S_{TOTAL} = 1.604\ ft}$

$S_{TOTAL} = 1.610\ ft$ ← FROM SPREADSHEET SOLN.

∴ O.K. √√

ATTACHMENT 6

Subgrade Elevations: Post-Settlement

Subgrade Elevations: Post-Settlement (sheet 1 of 6)

EASTING (ft)	NORTHING (ft) 1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650	1357600	1357550	1357500	1357450	1357400	1357350	1357300	1357250	1357200	1357150	1357100	1357050	1357000	1356950	1356900	1356850
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.0	83.2	83.2	83.2	83.2	83.2	83.1	83.1	83.1	83.0	83.0	83.0	83.0	83.0
623900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.5	80.3	81.7	81.7	81.7	81.7	81.7	81.6	81.6	81.6	81.6	81.6	81.5	81.5	81.5
623950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.3	88.0	92.3	94.1	94.1	94.1	94.1	94.1	94.1	94.0	94.0	94.0	94.0	93.9	93.9	93.9
624000	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.5	90.8	94.7	87.1	84.0	83.9	84.0	84.0	84.0	85.5	84.1	84.1	84.1	84.2	84.2	84.2	84.6
624050	80.0	80.0	80.0	80.0	80.0	80.0	82.1	88.2	94.5	81.4	80.1	80.4	80.7	81.1	81.5	81.7	82.0	80.9	81.3	81.5	82.2	82.8	83.5	83.7
624100	80.0	80.0	80.0	80.0	80.0	82.5	90.8	92.9	86.5	80.2	81.3	81.4	81.7	81.9	82.2	82.4	82.7	82.8	83.2	83.4	83.7	83.9	84.2	84.5
624150	80.0	80.0	80.0	80.0	80.0	83.8	82.3	94.7	83.2	80.5	81.4	82.1	82.3	82.6	82.9	83.1	83.4	83.6	83.9	84.1	84.4	84.6	84.9	85.1
624200	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.8	83.0	80.6	81.7	82.4	83.0	83.3	83.6	83.8	84.1	84.3	84.6	84.8	85.1	85.3	85.6	85.8
624250	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.8	83.0	81.2	81.9	82.6	83.3	84.2	84.5	84.7	85.0	85.2	85.5	85.8	86.0	86.3	86.5	86.8
624300	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.8	83.0	81.5	82.2	82.9	83.6	84.5	85.4	85.7	85.9	86.2	86.4	86.7	86.9	87.2	87.4	87.7
624350	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.8	83.3	81.8	82.5	83.1	83.8	84.8	85.6	86.6	86.8	87.1	87.3	87.6	87.8	88.1	88.3	88.6
624400	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.8	84.6	82.0	82.7	83.4	84.0	84.8	85.8	86.8	87.7	88.0	88.3	88.5	88.8	89.0	89.3	89.5
624450	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.8	83.0	81.0	83.0	83.6	84.3	85.0	86.0	87.0	88.0	88.9	89.2	89.4	89.7	89.9	90.2	90.4
624500	80.0	80.0	80.0	80.0	80.0	83.9	82.4	94.8	83.0	81.1	83.2	83.9	84.5	85.2	86.2	87.2	88.2	89.1	90.1	90.3	90.6	90.8	91.1	91.4
624550	80.0	80.0	80.0	80.0	80.0	83.5	81.8	94.2	84.3	81.5	83.5	84.2	84.9	85.6	86.4	87.4	88.3	89.3	90.3	91.3	91.5	91.8	92.0	92.3
624600	80.0	80.0	80.0	80.0	80.0	81.1	80.0	90.7	90.5	82.1	83.9	84.6	85.3	86.0	86.2	87.1	88.0	89.0	90.5	91.5	91.3	92.7	92.9	93.2
624650	80.0	80.0	80.0	80.0	80.0	80.0	85.0	85.5	95.9	85.3	84.3	85.0	84.4	86.4	85.0	86.7	87.1	86.8	90.7	91.7	89.4	93.0	93.8	93.9
624700	80.0	80.0	80.0	80.0	80.0	80.0	82.9	80.1	91.3	90.3	82.3	84.1	82.8	84.7	83.7	84.9	85.0	85.5	87.9	90.0	87.8	90.3	89.9	89.5
624750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	95.9	95.9	81.8	82.1	82.2	82.7	83.2	83.7	84.2	85.0	85.7	86.5	87.0	87.6	88.1	88.7
624800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.3	80.5	91.7	89.0	80.8	81.7	82.2	82.7	83.2	83.6	84.4	85.1	85.7	86.2	86.8	87.4	87.9
624850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.5	86.3	95.9	81.0	81.0	81.7	82.2	82.7	83.1	83.8	84.3	84.9	85.5	86.0	86.6	87.1
624900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.6	80.9	92.1	88.4	80.1	81.2	81.7	82.2	82.6	83.1	83.6	84.1	84.7	85.2	85.8	86.3
624950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.0	86.7	95.9	80.5	80.5	81.2	81.6	82.1	82.6	83.0	83.4	83.9	84.5	85.0	85.6
625000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.0	81.3	92.5	87.9	79.9	80.6	81.1	81.6	82.0	82.5	82.9	83.4	83.8	84.3	84.8
625050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.5	87.1	95.8	82.1	79.9	80.4	80.9	81.4	81.9	82.4	82.8	83.3	83.7	84.2
625100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.1	80.7	90.3	94.8	86.4	80.7	79.7	80.4	81.3	81.8	82.3	82.7	83.2	83.6
625150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.2	88.2	93.2	95.9	91.5	86.0	80.6	80.8	81.7	82.1	81.9	83.0
625200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	81.9	81.4	85.4	89.3	93.3	95.9	91.3	86.8	81.7	80.2	81.0
625250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.6	85.0	81.3	81.5	85.4	89.4	93.3	95.9	91.2	85.8
625300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.6	85.0	81.2	81.6	85.5	89.5	93.4
625350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.7	85.0	81.1	81.7
625400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.8
625450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

81/104

Subgrade Elevations: Post-Settlement (sheet 2 of 6)

EASTING (ft) \ NORTHING (ft)	1358800	1358750	1358700	1358650	1358600	1358550	1358500	1358450	1358400	1358350	1358300	1358250	1358200	1358150	1358100	1358050	1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	83.0	82.9	82.9	82.9	82.9	82.9	82.8	82.8	82.8	82.8	82.7	82.7	82.7	82.7	82.7	82.6	82.6	82.6	82.6	82.6	82.5	82.5	82.5	82.5
623900	81.5	81.4	81.4	81.4	81.4	81.4	81.3	81.3	81.3	81.3	81.3	81.2	81.2	81.2	81.2	81.2	81.1	81.1	81.1	81.1	81.1	81.1	81.0	81.0
623950	93.9	93.9	93.8	93.8	93.8	93.8	93.8	93.7	93.7	93.7	93.7	93.6	93.6	93.6	93.6	93.6	93.5	93.5	93.5	93.5	93.4	93.4	93.4	93.4
624000	87.1	84.3	84.3	84.4	84.4	84.4	84.5	84.8	85.9	84.5	84.6	86.2	86.9	85.8	88.8	84.7	84.8	88.3	89.2	84.8	84.9	85.6	86.3	85.0
624050	84.0	83.1	81.9	82.6	82.9	84.6	83.3	80.5	80.8	80.9	81.7	83.6	84.2	83.0	85.6	82.5	83.6	87.6	88.2	81.6	80.2	81.2	81.9	81.5
624100	84.7	85.0	85.2	85.5	84.3	83.3	82.0	81.4	82.0	82.3	83.4	84.0	84.7	85.4	86.0	85.4	87.4	88.1	88.7	87.0	81.1	81.7	82.4	83.1
624150	85.4	85.8	85.9	86.1	85.4	82.2	84.7	81.8	82.5	83.2	83.8	84.5	85.2	85.8	86.5	87.2	87.9	88.5	85.8	80.9	81.5	82.2	82.9	83.5
624200	86.1	86.4	86.6	86.9	87.1	87.4	85.3	82.3	83.0	83.6	84.3	85.0	85.7	86.3	87.0	87.7	88.4	89.0	89.7	86.1	82.0	82.7	83.4	84.0
624250	87.0	87.3	87.5	87.8	88.0	88.3	84.0	83.0	83.7	84.3	85.0	85.7	86.4	87.0	87.7	88.4	89.0	89.7	90.4	86.0	82.7	83.4	84.1	84.7
624300	87.9	88.2	88.4	88.7	88.9	85.9	83.0	83.7	84.4	85.0	85.7	86.4	87.1	87.7	88.4	89.1	89.7	90.4	88.8	83.4	83.4	84.1	84.8	85.4
624350	88.9	89.1	89.4	89.6	89.9	90.1	87.2	84.4	85.1	85.7	86.4	87.1	87.7	88.4	89.1	89.8	90.4	91.1	91.8	90.1	84.1	84.8	85.5	86.1
624400	89.8	90.0	90.3	90.5	89.6	86.5	84.4	85.1	85.7	86.4	87.1	87.8	88.4	89.1	89.8	90.5	91.1	91.8	91.6	85.4	84.8	85.5	86.2	86.8
624450	90.7	90.9	91.2	91.5	90.5	89.2	86.0	85.8	86.4	87.1	87.8	88.5	89.1	89.8	90.5	91.2	91.8	92.5	92.7	87.5	85.5	86.2	86.8	87.5
624500	91.6	91.9	92.1	92.4	91.3	90.0	87.8	86.5	87.1	87.8	88.5	89.2	89.8	90.5	91.2	91.9	92.5	93.2	93.9	92.0	86.2	86.9	87.5	88.2
624550	92.5	92.8	93.0	93.3	92.4	88.0	88.5	87.2	87.8	88.5	89.2	89.8	90.5	91.2	91.9	92.5	93.2	93.9	91.1	86.2	86.9	87.6	88.2	88.9
624600	93.4	93.7	94.0	94.1	93.5	92.6	91.0	87.8	88.5	89.2	89.9	90.5	91.2	91.9	92.6	93.2	93.9	94.6	95.3	92.2	88.2	88.2	88.9	89.6
624650	92.3	93.1	92.9	92.6	92.9	90.0	88.3	88.0	89.2	89.9	90.1	91.2	91.9	92.2	93.3	93.9	94.4	95.3	96.0	91.4	88.2	88.9	89.6	90.2
624700	90.1	90.9	91.1	91.7	92.3	90.1	88.4	88.0	89.1	89.8	90.1	91.2	91.9	92.3	93.2	93.9	94.5	95.2	95.9	91.9	88.4	89.7	90.0	90.0
624750	89.3	89.8	90.4	90.9	91.5	92.0	90.2	87.8	88.5	89.1	89.8	90.5	91.2	91.8	92.5	93.2	93.9	94.6	95.0	91.8	88.4	88.3	89.2	89.5
624800	88.5	89.0	89.6	90.1	90.7	88.5	86.4	87.1	87.8	88.4	89.1	89.8	90.5	91.2	91.8	92.5	93.2	93.9	91.5	86.2	86.8	87.5	88.2	88.8
624850	87.7	88.2	88.8	89.4	89.9	89.5	87.5	86.4	87.1	87.8	88.4	89.1	89.8	90.5	91.1	91.8	92.5	93.2	93.8	92.4	86.1	86.8	87.5	88.1
624900	86.9	87.5	88.0	88.6	89.1	89.5	85.9	85.7	86.4	87.1	87.7	88.4	89.1	89.8	90.4	91.1	91.8	92.5	93.1	87.3	85.4	86.1	86.8	87.5
624950	86.1	86.7	87.2	87.8	88.3	86.3	84.3	85.0	85.7	86.4	87.0	87.7	88.4	89.1	89.7	90.4	91.1	91.8	92.0	85.7	84.7	85.4	86.1	86.8
625000	85.3	85.9	86.4	87.0	87.6	88.1	86.0	84.3	85.0	85.7	86.3	87.0	87.7	88.4	89.0	89.7	90.4	91.1	91.8	90.1	85.3	84.7	85.4	86.1
625050	84.6	85.1	85.7	86.2	86.8	84.8	83.0	83.6	84.3	85.0	85.7	86.3	87.0	87.7	88.4	89.0	89.7	90.4	90.8	83.4	83.4	84.0	84.7	85.4
625100	84.1	84.5	85.0	85.4	86.0	86.3	83.2	82.9	83.6	84.3	85.0	85.6	86.3	87.0	87.7	88.3	89.0	89.7	90.4	86.2	82.7	83.3	84.0	84.7
625150	83.5	84.0	84.4	84.9	85.3	84.9	82.3	82.2	82.9	83.6	84.3	84.9	85.6	86.3	87.0	87.6	88.3	89.0	89.7	85.6	82.0	82.7	83.3	84.0
625200	82.2	83.4	83.9	84.3	84.8	82.5	81.1	81.8	82.5	83.1	83.8	84.5	85.2	85.8	86.5	87.2	87.8	88.5	86.1	80.9	81.5	82.2	82.9	83.5
625250	80.4	80.5	82.9	83.7	84.2	84.7	82.6	81.3	82.0	82.7	83.4	84.0	84.7	85.4	86.0	86.1	87.4	88.1	88.7	87.2	81.1	81.7	82.4	83.1
625300	95.9	91.1	85.7	81.0	83.6	81.1	80.2	80.5	81.5	82.2	81.3	83.5	84.2	82.5	85.5	83.4	84.0	87.6	88.2	93.9	80.5	81.2	81.9	81.4
625350	85.6	89.5	93.5	95.9	92.2	86.8	86.3	86.3	87.4	87.0	86.2	86.1	88.5	86.8	89.6	88.3	86.0	86.0	90.8	87.2	85.9	85.9	87.1	86.2
625400	85.0	81.0	81.7	85.7	89.6	92.1	92.4	92.4	92.5	92.5	92.5	92.5	92.6	92.6	92.6	92.6	92.6	92.7	92.7	92.7	92.7	92.7	92.8	92.8
625450	80.0	80.0	83.9	85.0	81.1	80.0	80.0	80.0	80.1	80.1	80.1	80.1	80.1	80.2	80.2	80.2	80.2	80.2	80.3	80.3	80.3	80.3	80.4	80.4
625500	80.0	80.0	80.0	80.0	80.0	81.2	81.5	81.5	81.5	81.6	81.6	81.6	81.6	81.6	81.7	81.7	81.7	81.7	81.8	81.8	81.8	81.8	81.6	81.9
625550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

82/104

Subgrade Elevations: Post-Settlement (sheet 3 of 6)

EASTING (ft) \ NORTHING (ft)	1355600	1355550	1355500	1355450	1355400	1355350	1355300	1355250	1355200	1355150	1355100	1355050	1355000	1354950	1354900	1354850	1354800	1354750	1354700	1354650	1354600	1354550	1354500	1354450
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	82.5	82.4	82.4	82.4	82.4	82.4	82.3	82.3	82.3	82.3	82.2	82.2	82.2	82.2	82.2	82.1	82.1	82.1	82.1	82.1	82.0	82.0	82.0	82.0
623900	81.0	80.9	80.9	80.9	80.9	80.9	80.8	80.8	80.8	80.8	80.8	80.7	80.7	80.7	80.7	80.6	80.6	80.6	80.6	80.6	80.5	80.5	80.5	80.5
623950	93.4	93.4	93.3	93.3	93.3	93.3	93.3	93.2	93.2	93.2	93.2	93.1	93.1	93.1	93.1	93.1	93.0	93.0	93.0	93.0	93.0	92.9	92.9	92.9
624000	85.0	87.7	86.2	87.4	89.1	85.1	85.2	90.5	87.1	86.0	86.6	85.3	85.3	88.0	86.3	85.4	85.4	89.1	86.0	85.5	85.6	86.9	85.9	85.7
624050	82.4	83.9	84.8	84.8	85.9	83.7	84.9	87.9	81.7	80.9	81.7	81.3	82.0	83.7	84.4	82.6	85.7	84.6	83.6	84.8	80.2	81.5	80.5	81.5
624100	83.8	84.4	85.1	85.8	86.4	87.0	87.8	88.5	82.2	81.5	82.2	82.6	83.5	84.2	84.9	85.6	86.2	86.9	85.4	82.7	81.3	82.0	82.0	83.3
624150	84.2	84.9	85.6	86.2	86.9	87.6	88.2	86.4	81.3	82.0	82.7	83.3	84.0	84.7	85.3	86.0	86.7	87.4	85.8	83.6	81.8	82.4	83.1	83.8
624200	84.7	85.4	86.1	86.8	87.4	88.1	87.4	85.0	81.8	82.5	83.2	83.9	84.6	85.2	85.9	86.6	87.3	87.9	88.6	86.3	82.4	83.0	83.7	84.4
624250	85.4	86.1	86.8	87.4	88.1	88.8	89.5	89.0	82.6	83.2	83.9	84.6	85.3	85.9	86.6	87.3	88.0	88.6	85.9	83.2	83.1	83.7	84.4	85.1
624300	86.1	86.8	87.5	88.2	88.8	89.5	90.2	84.2	83.2	83.9	84.6	85.3	86.0	86.6	87.3	88.0	88.7	89.3	90.0	84.2	83.8	84.4	85.1	85.8
624350	86.8	87.5	88.2	88.9	89.5	90.2	90.9	87.8	83.9	84.6	85.3	86.0	86.7	87.3	88.0	88.7	89.4	90.0	89.8	87.1	84.5	85.1	85.8	86.5
624400	87.5	88.2	88.9	89.5	90.2	90.9	91.6	92.3	84.6	85.3	86.0	86.7	87.4	88.0	88.7	89.4	90.1	89.4	86.7	84.5	85.1	85.8	86.5	87.2
624450	88.2	88.9	89.6	90.2	90.9	91.6	92.3	87.5	85.3	86.0	86.7	87.4	88.0	88.7	89.4	90.1	90.8	91.4	92.1	86.0	85.8	86.5	87.2	87.9
624500	88.9	89.6	90.3	90.9	91.6	92.3	93.0	91.5	88.4	86.7	87.4	88.1	88.7	89.4	90.1	90.8	91.5	92.1	90.6	87.9	86.5	87.2	87.9	88.6
624550	89.6	90.3	91.0	91.6	92.3	93.0	93.7	91.3	86.7	87.4	88.1	88.8	89.4	90.1	90.8	91.5	92.2	92.8	91.8	86.6	87.2	87.9	88.6	89.3
624600	90.3	91.0	91.6	92.3	93.0	93.7	94.4	90.7	87.4	88.1	88.8	89.4	90.1	90.8	91.5	92.2	92.8	93.5	94.2	91.9	89.1	88.6	89.3	90.0
624650	91.0	91.7	92.3	93.0	93.7	94.4	95.1	94.7	88.1	88.8	89.5	90.1	90.8	91.5	92.2	92.9	93.5	94.2	91.4	88.7	88.6	89.3	90.0	90.7
624700	91.0	92.4	93.0	93.7	94.4	95.1	95.8	89.8	88.8	89.5	90.2	90.8	91.5	92.2	92.9	93.6	94.2	94.9	91.2	88.6	89.3	90.0	90.7	91.4
624750	91.5	91.6	93.9	93.4	94.3	95.9	96.6	93.9	91.4	90.2	90.9	91.6	92.2	92.9	93.6	94.3	94.9	95.6	95.4	92.6	90.0	90.7	91.4	92.1
624800	89.5	90.3	92.4	91.6	92.6	94.5	96.8	98.1	92.3	91.1	91.8	92.4	93.1	93.8	94.4	95.1	95.8	95.1	92.3	90.1	90.8	91.5	92.1	92.8
624850	88.8	89.5	90.2	90.8	91.5	92.2	94.6	95.3	94.2	92.6	92.6	93.3	93.9	94.6	95.3	95.9	96.7	97.3	97.9	91.0	91.6	92.3	93.0	93.6
624900	88.1	88.8	89.5	90.1	90.8	91.5	92.2	92.8	93.5	94.2	93.4	94.1	96.2	95.8	96.1	96.9	97.6	98.2	96.6	93.8	92.5	93.1	93.8	94.5
624950	87.4	88.1	88.8	89.4	90.1	90.8	91.5	92.1	92.8	93.5	94.1	94.8	95.5	96.2	96.4	97.2	98.2	98.4	94.9	92.3	93.3	94.0	94.7	95.3
625000	86.7	87.4	88.1	88.7	89.4	90.1	90.8	91.4	92.1	92.8	93.4	94.1	94.8	95.5	96.1	96.8	96.6	93.4	96.3	92.5	94.1	94.4	95.5	96.2
625050	86.1	86.7	87.4	88.1	88.7	89.4	90.1	90.7	91.4	92.1	92.8	93.4	94.1	94.8	93.3	93.5	95.0	90.5	91.5	92.6	94.0	94.8	96.3	96.5
625100	85.4	86.0	86.7	87.4	88.0	88.7	89.4	90.0	90.7	91.4	92.1	92.7	93.2	92.2	93.3	88.7	90.0	90.7	91.7	92.7	93.7	95.0	96.3	96.9
625150	84.7	85.3	86.0	86.7	87.3	88.0	88.7	89.4	90.0	90.7	91.4	92.0	90.5	88.2	89.8	88.9	89.9	91.0	92.0	93.0	94.0	94.9	95.9	97.1
625200	84.2	84.8	85.4	86.0	86.6	87.3	88.0	88.7	89.3	90.0	90.7	91.3	90.6	87.2	88.2	89.2	90.2	91.2	92.2	93.2	94.1	95.0	96.0	96.9
625250	83.7	84.4	84.9	85.5	86.0	86.6	87.3	88.0	88.4	88.6	85.2	88.1	87.3	87.4	88.4	89.4	90.4	91.4	92.3	93.3	94.2	95.2	96.1	97.1
625300	82.9	83.9	84.5	84.8	85.5	85.9	86.2	87.3	83.0	87.8	84.8	85.6	86.6	87.6	88.6	89.6	90.6	91.5	92.5	93.4	94.4	95.3	96.3	95.9
625350	84.6	80.3	80.6	82.5	84.5	83.2	82.9	85.6	83.0	84.9	84.8	85.8	86.8	87.8	88.8	89.8	90.7	91.7	92.6	93.6	94.5	94.0	96.4	93.5
625400	93.8	95.9	87.3	80.1	82.2	84.2	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0	89.9	90.9	91.8	92.7	93.7	94.1	90.6	92.9	92.7
625450	81.7	86.8	94.8	87.3	80.5	80.5	81.3	82.2	83.2	84.2	85.2	86.2	87.2	88.1	89.1	90.0	91.0	91.9	91.4	90.3	93.1	90.5	81.4	92.4
625500	83.9	81.8	86.9	95.9	81.1	80.8	81.6	82.4	83.4	84.4	85.4	86.4	87.3	88.3	89.2	90.2	88.5	90.0	90.6	88.9	89.8	90.7	91.7	92.6
625550	80.0	83.8	80.9	91.9	89.0	80.5	81.9	82.7	83.7	84.6	85.6	86.5	87.5	88.4	87.6	89.5	87.6	87.3	88.3	89.1	90.0	91.0	91.9	92.8
625600	80.0	80.0	84.5	86.1	95.9	83.5	82.0	82.7	83.8	84.8	85.7	86.6	86.5	88.5	84.7	85.6	86.6	87.5	88.4	89.3	90.3	91.2	92.1	93.0
625650	80.0	80.0	83.3	80.4	91.4	89.6	80.7	83.2	84.0	84.9	85.8	86.8	83.1	84.3	84.9	85.9	86.8	87.7	88.6	89.6	90.5	91.4	92.3	93.3
625700	80.0	80.0	80.0	85.0	85.6	95.9	82.4	83.5	84.3	83.6	82.3	83.5	83.3	84.2	85.2	86.1	87.0	87.9	88.9	89.8	90.7	91.6	92.5	93.5
625750	80.0	80.0	80.0	82.8	80.0	90.9	91.7	83.3	82.7	81.5	81.7	82.6	83.5	84.5	85.4	86.3	87.2	88.2	89.1	90.0	90.9	91.9	92.8	93.7
625800	80.0	80.0	80.0	80.0	85.0	85.2	95.9	83.6	80.3	81.3	82.0	82.8	83.8	84.7	85.6	86.5	87.5	88.4	89.3	90.2	91.2	92.1	93.0	93.9
625850	80.0	80.0	80.0	80.0	82.3	80.0	90.4	91.0	80.1	81.7	82.4	83.1	84.0	84.9	85.8	86.8	87.7	88.6	89.5	90.5	91.4	92.3	93.2	94.0
625900	80.0	80.0	80.0	80.0	80.0	85.0	84.7	95.6	84.9	82.0	82.6	83.5	84.2	85.1	86.1	87.0	87.9	88.8	89.8	90.7	91.6	92.5	93.4	94.1
625950	80.0	80.0	80.0	80.0	80.0	81.8	80.0	89.9	92.2	80.1	82.8	83.9	84.8	85.4	86.3	87.2	88.1	89.1	90.0	90.9	91.8	92.4	93.7	94.1
626000	80.0	80.0	80.0	80.0	80.0	80.0	85.0	84.1	95.1	86.0	83.5	84.2	85.0	85.7	86.5	87.4	88.4	89.3	90.2	91.1	92.0	92.1	92.5	93.1
626050	80.0	80.0	80.0	80.0	80.0	80.0	81.3	80.1	89.4	93.2	79.9	83.0	85.3	86.1	86.8	87.7	88.6	89.5	89.1	89.5	90.4	90.9	91.6	92.1
626100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	83.7	94.7	85.2	82.4	85.7	86.4	87.2	87.9	87.4	88.8	89.7	88.8	89.5	90.2	90.9	91.2
626150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.8	80.8	88.9	93.1	83.3	86.1	86.8	86.2	87.8	87.1	87.3	87.8	88.1	88.8	89.5	90.2	90.2
626200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	83.2	94.2	89.2	84.3	87.2	84.6	85.7	86.0	86.0	86.7	87.4	88.1	88.8	89.4	89.2
626250	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.3	81.5	88.4	93.8	79.8	84.3	84.0	84.4	84.9	85.4	86.0	86.7	87.4	88.1	88.5	88.3
626300	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.7	93.7	86.5	81.3	83.4	83.9	84.4	84.8	85.3	86.0	86.7	87.4	87.5	87.3
626350	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.1	87.9	94.4	79.5	82.0	83.4	83.8	84.3	84.8	85.3	86.0	86.7	86.8	86.3
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	82.2	93.2	87.2	80.6	82.4	83.3	83.8	84.2	84.7	85.3	85.8	85.6	85.4
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.8	87.4	95.1	80.0	81.8	82.8	83.3	83.7	84.2	84.6	84.8	84.7	84.6
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.6	81.7	92.7	88.9	81.7	82.2	82.7	83.2	83.6	84.1	84.1	84.0	83.9
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.5	86.9	95.8	80.7	81.7	82.2	82.7	83.1	83.5	83.4	83.3	83.2
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.1	81.2	92.2	88.6	80.4	81.6	82.1	82.6	82.9	82.7	82.6	82.5
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.1	86.4	95.9	81.4	80.8	81.6	82.1	82.2	82.0	81.9	81.8
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.6	80.7	91.7	89.3	80.0	81.0	81.6	81.5	81.3	81.0	80.3
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.8	85.9	95.9	83.5	80.1	80.8	80.4	80.1	82.5	91.1
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	83.0	80.0	89.4	95.8	86.9	82.1	82.8	88.8	95.9	90.6
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	85.0	80.5	87.6	92.9	95.4	95.1	91.8	86.1	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	84.4	82.4	81.0	83.2	82.8	80.0	84.4	83.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	82.8	84.7	84.3	82.1	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Subgrade Elevations: Post-Settlement (sheet 4 of 6)

EASTING (ft)	NORTHING (ft) 1354400	1354350	1354300	1354250	1354200	1354150	1354100	1354050	1354000	1353950	1353900	1353850	1353800	1353750	1353700	1353650	1353600	1353550	1353500	1353450	1353400	1353350	1353300	1353250
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	81.9	81.9	81.9	81.9	81.9	81.8	81.8	81.8	81.8	81.8	81.7	81.7	81.7	81.7	81.6	81.6	81.6	81.6	81.6	81.5	81.5	81.5	81.5	81.5
623900	80.5	80.4	80.4	80.4	80.4	80.4	80.3	80.3	80.3	80.3	80.2	80.2	80.2	80.2	80.2	80.1	80.1	80.1	80.1	80.1	80.0	80.0	80.0	80.0
623950	92.9	92.8	92.8	92.8	92.8	92.8	92.8	92.7	92.7	92.7	92.7	92.7	92.6	92.6	92.6	92.6	92.5	92.5	92.5	92.5	92.5	92.4	92.4	92.4
624000	85.7	86.2	85.8	86.5	85.8	85.8	86.0	87.1	86.1	88.4	86.0	86.0	86.0	86.1	86.3	87.3	86.1	86.2	86.0	88.3	87.3	89.8	86.3	86.4
624050	83.5	84.2	83.2	85.1	80.4	80.6	81.4	82.1	81.6	83.4	81.1	81.9	85.4	82.8	80.5	81.6	80.8	81.5	83.6	84.3	83.0	85.6	80.0	80.2
624100	84.0	84.7	85.3	84.2	82.1	81.2	81.9	82.5	83.2	83.9	83.3	84.9	83.3	81.8	81.4	82.1	82.3	83.5	84.1	84.8	85.5	86.1	82.7	81.2
624150	84.5	85.1	85.8	86.5	81.0	81.7	82.3	83.0	83.7	84.3	85.0	83.3	81.2	82.0	81.9	82.6	83.2	83.9	84.6	85.3	85.9	86.6	80.9	81.6
624200	85.1	85.7	86.4	84.7	82.8	82.3	83.0	83.6	84.3	85.0	85.7	86.3	86.1	84.6	82.6	83.2	83.9	84.6	85.3	85.9	86.6	85.3	82.3	82.3
624250	85.8	86.4	87.1	87.8	85.9	83.0	83.7	84.3	85.0	85.7	86.4	86.8	84.3	82.7	83.3	83.9	84.6	85.3	86.0	86.6	87.3	88.0	85.7	83.0
624300	86.5	87.1	87.8	88.5	83.0	83.7	84.4	85.0	85.7	86.4	87.1	87.7	83.8	86.6	84.5	84.6	85.3	86.0	86.7	87.4	88.0	88.7	83.0	83.7
624350	87.2	87.8	88.5	87.6	84.8	84.4	85.1	85.7	86.4	87.1	87.8	88.4	87.4	85.8	84.7	85.3	86.0	86.7	87.4	88.1	88.7	88.9	86.2	84.4
624400	87.9	88.5	89.2	89.9	86.5	85.1	85.8	86.4	87.1	87.8	88.5	87.1	85.5	84.7	85.4	86.0	86.7	87.4	88.1	88.8	89.4	90.1	86.4	85.1
624450	88.6	89.2	89.9	87.3	85.6	85.8	86.4	87.1	87.8	88.5	89.2	89.8	90.5	88.9	86.1	86.7	87.4	88.1	88.8	89.4	90.1	88.1	85.6	85.8
624500	89.3	89.9	90.6	90.4	88.7	86.5	87.1	87.8	88.5	89.2	89.9	90.3	88.6	87.0	86.8	87.4	88.1	88.8	89.5	90.1	90.8	91.5	89.0	86.5
624550	90.0	90.6	91.3	92.0	86.5	87.2	87.8	88.5	89.2	89.9	90.6	91.2	87.2	88.7	87.5	88.1	88.8	89.5	90.2	90.8	91.5	92.2	86.5	87.2
624600	90.7	91.3	92.0	90.6	88.0	87.8	88.5	89.2	89.9	90.6	91.2	91.9	91.7	89.9	88.1	88.8	89.5	90.2	90.9	91.5	92.2	92.0	88.5	87.9
624650	91.3	92.0	92.7	93.4	91.1	88.5	89.2	89.9	90.6	91.3	91.9	91.4	89.8	88.3	88.8	89.5	90.2	90.9	91.6	92.2	92.9	93.6	91.9	88.6
624700	92.0	92.7	93.4	94.1	88.6	89.2	89.9	90.6	91.3	92.0	92.6	93.3	93.6	90.5	89.5	90.2	90.9	91.6	92.2	92.9	93.6	94.2	88.6	89.3
624750	92.7	93.4	94.1	93.0	91.4	89.9	90.6	91.3	92.0	92.7	93.3	94.0	92.9	91.3	90.2	90.9	91.6	92.3	93.0	93.6	94.3	94.6	91.8	90.0
624800	93.5	94.1	94.8	95.5	91.3	90.6	91.3	92.0	92.7	93.4	94.0	94.7	91.0	90.2	90.9	91.6	92.3	93.0	93.6	94.3	95.0	95.7	91.7	90.7
624850	94.3	95.0	95.7	93.8	91.1	91.4	92.1	92.8	93.5	94.1	94.8	95.5	96.1	91.0	91.7	92.3	93.0	93.7	94.3	95.0	95.7	93.4	91.3	91.4
624900	95.2	95.8	96.5	97.0	94.3	92.2	92.9	93.6	94.3	95.0	95.6	95.9	94.4	92.8	92.5	93.2	93.8	94.5	95.2	95.8	96.5	96.9	94.8	92.3
624950	96.0	96.7	97.3	97.9	92.3	92.9	93.7	94.4	95.1	95.8	96.5	96.3	92.8	92.7	93.3	94.0	94.7	95.3	96.0	96.7	97.4	98.0	92.5	93.9
625000	96.8	97.5	98.1	98.6	95.6	93.7	94.4	95.2	95.9	96.7	97.3	98.0	97.7	94.1	94.2	94.8	95.5	96.2	96.9	97.5	98.2	95.8	93.5	95.5
625050	97.6	98.2	98.8	99.4	97.9	94.5	95.2	96.0	96.7	97.5	98.2	97.6	96.0	94.4	95.0	95.7	96.4	95.2	95.4	98.4	94.6	95.1	94.2	95.3
625100	98.3	98.8	99.6	100.2	94.6	95.3	96.0	96.8	97.5	98.2	99.0	99.7	96.1	98.6	99.4	96.7	99.4	97.4	92.6	94.4	93.2	93.6	94.1	94.5
625150	98.4	99.0	100.3	99.0	97.6	96.1	96.2	97.5	98.3	98.5	99.0	99.8	100.1	99.6	99.6	99.8	100.0	100.2	100.4	96.3	92.4	92.8	93.2	93.6
625200	97.9	98.6	99.2	98.5	96.1	96.2	96.3	97.5	97.6	97.6	97.8	98.1	98.3	98.5	98.7	98.9	99.1	99.3	99.5	92.3	91.5	91.9	92.3	92.7
625250	98.0	96.8	96.0	101.4	101.1	95.5	95.8	96.1	98.3	98.6	96.9	97.1	97.4	97.6	97.8	98.0	98.2	98.4	98.6	97.4	90.6	91.1	91.5	91.9
625300	98.1	96.2	95.5	100.9	98.5	94.5	94.8	95.1	95.3	95.6	95.9	96.1	96.4	96.6	96.8	97.0	97.2	97.4	97.6	96.6	91.1	90.2	90.6	91.0
625350	92.8	94.7	96.5	100.1	99.0	97.9	95.8	94.1	94.4	94.6	94.9	95.2	95.4	95.7	95.9	96.1	96.3	96.5	96.7	94.2	88.9	89.3	89.7	90.2
625400	93.0	94.0	96.7	99.2	99.5	99.8	93.2	93.1	93.4	93.6	93.9	94.2	94.4	94.7	95.0	95.2	95.4	95.5	95.7	95.9	95.7	90.8	88.9	89.3
625450	93.3	94.2	97.2	98.2	98.5	98.8	94.6	93.5	92.4	92.7	92.9	93.2	93.5	93.7	94.0	94.2	94.4	94.6	94.8	95.0	95.2	91.2	88.0	88.4
625500	93.5	94.6	97.0	97.3	97.5	97.8	98.1	94.9	91.4	91.7	92.0	92.2	92.5	92.7	93.0	93.2	93.5	93.7	93.9	94.1	89.0	86.9	87.2	87.6
625550	93.7	95.0	96.0	96.3	96.5	96.8	97.1	92.9	90.4	90.7	91.0	91.2	91.5	91.8	92.0	92.3	92.5	92.7	92.9	93.1	91.6	90.8	89.0	87.3
625600	93.9	94.7	95.0	95.3	95.6	95.8	96.1	96.4	96.1	89.7	90.0	90.2	90.5	90.8	91.0	91.3	91.5	91.8	92.0	92.2	92.4	90.2	85.4	85.8
625650	94.1	94.0	94.0	94.3	94.6	94.9	95.1	95.4	95.2	88.7	89.0	89.3	89.5	89.8	90.0	90.3	90.6	90.8	91.1	91.3	91.4	88.3	86.7	85.0
625700	93.9	92.8	93.1	93.3	93.6	93.9	94.1	94.4	94.2	92.7	90.7	88.3	88.5	88.8	89.1	89.3	89.6	89.8	90.1	90.3	90.5	90.7	86.7	84.1
625750	93.1	91.8	92.1	92.4	92.6	92.9	93.2	93.4	93.7	93.9	87.7	87.3	87.6	87.8	88.1	88.3	88.6	88.9	89.1	89.4	89.6	89.0	84.1	83.2
625800	91.5	90.8	91.1	91.4	91.6	91.9	92.2	92.4	92.7	92.9	89.4	88.3	86.6	86.9	87.1	87.4	87.6	87.9	88.1	88.4	88.6	88.8	89.0	83.8
625850	89.6	89.8	90.1	90.4	90.7	90.9	91.2	91.4	91.7	92.0	92.2	88.8	85.6	85.9	86.1	86.4	86.6	86.9	87.2	87.4	87.7	87.9	87.1	81.5
625900	88.6	88.9	89.1	89.4	89.7	89.9	90.2	90.5	90.7	91.0	91.3	86.8	85.0	84.9	85.1	85.4	85.7	85.9	86.2	86.4	86.7	86.9	87.1	86.4
625950	92.9	89.4	88.2	88.4	88.7	89.0	89.2	89.5	89.8	90.0	90.3	90.5	90.6	83.9	84.2	84.4	84.7	84.9	85.2	85.4	85.7	85.9	86.2	86.4
626000	92.9	90.3	87.2	87.4	87.7	88.0	88.2	88.5	88.8	89.0	89.3	89.6	87.7	82.9	83.2	83.4	83.7	84.0	84.2	84.5	84.7	84.3	84.4	85.6
626050	88.4	86.4	87.1	86.5	86.7	87.0	87.3	87.5	87.8	88.1	88.3	88.6	88.6	87.5	82.7	82.5	82.7	83.0	83.2	83.5	83.9	81.0	81.9	90.7
626100	89.1	88.8	88.8	86.5	85.7	86.0	86.3	86.5	86.8	87.1	87.3	87.6	87.9	88.1	81.2	81.5	81.8	82.1	82.1	81.0	81.9	90.0	95.9	91.1
626150	89.9	87.4	85.4	84.5	84.8	85.0	85.3	85.6	85.8	86.1	86.4	86.8	86.9	87.1	84.3	83.2	81.0	81.4	81.5	86.3	94.6	92.8	86.6	80.4
626200	89.0	87.7	86.8	87.1	83.8	84.1	84.3	84.6	84.8	85.1	85.4	85.7	86.0	86.4	85.1	84.2	79.9	83.2	92.3	94.6	88.3	82.1	83.5	83.5
626250	88.1	87.9	87.7	85.3	82.8	83.1	83.3	83.6	83.9	84.2	84.6	85.0	85.3	85.6	81.2	80.8	89.4	95.9	90.1	83.9	81.2	85.0	80.0	80.0
626300	87.1	86.9	86.7	84.9	85.1	82.1	82.4	82.8	83.2	83.5	83.9	84.2	82.8	82.3	90.3	95.6	91.8	85.6	80.0	85.0	80.6	80.0	80.0	80.0
626350	86.1	85.9	85.7	85.5	84.0	81.4	81.7	82.1	82.4	82.3	81.9	83.2	86.6	94.2	93.6	87.3	81.1	84.9	82.5	80.0	80.0	80.0	80.0	80.0
626400	85.2	85.1	85.0	84.9	83.1	84.4	81.0	81.3	81.3	80.4	82.2	91.2	95.3	89.1	82.9	82.5	84.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	84.5	84.4	84.3	84.2	84.1	83.9	82.5	80.1	80.9	89.3	95.9	90.8	84.6	80.2	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	83.8	83.7	83.6	83.5	83.3	82.4	80.3	86.0	94.7	92.6	86.4	80.1	85.0	81.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	83.1	82.9	82.4	81.4	80.5	83.6	92.2	94.3	88.1	81.9	83.9	83.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	82.4	82.0	80.4	81.2	89.8	95.9	89.8	83.6	81.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	81.6	81.5	87.9	95.9	91.6	85.3	80.0	85.0	80.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	84.9	93.8	93.3	87.1	80.9	85.0	82.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	95.1	88.8	82.6	82.8	84.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	84.4	80.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	85.0	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Subgrade Elevations: Post-Settlement (sheet 5 of 6)

EASTING (ft) \ NORTHING (ft)	1353200	1353150	1353100	1353050	1353000	1352950	1352900	1352850	1352800	1352750	1352700	1352650	1352600	1352550	1352500	1352450	1352400	1352350	1352300	1352250	1352200	1352150	1352100	1352050
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624050	81.4	81.4	81.4	81.4	81.4	81.3	81.3	81.3	81.3	81.3	81.2	81.2	81.2	81.2	81.1	81.1	81.1	81.1	81.1	81.0	81.0	81.0	81.0	81.0
624100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624150	92.4	92.3	92.3	92.3	92.3	92.2	92.2	92.2	92.2	92.2	92.2	92.1	92.1	92.1	92.1	92.0	92.0	92.0	92.0	92.0	91.9	91.9	91.9	91.9
624200	87.0	87.6	86.4	86.5	86.8	87.7	88.8	90.0	86.6	86.6	87.3	87.8	86.7	86.8	89.0	88.2	86.8	90.2	86.9	86.9	89.6	90.3	87.0	87.0
624250	81.3	81.6	81.4	81.9	84.0	83.2	85.0	86.0	82.7	82.5	80.7	81.6	81.1	81.7	83.7	84.3	83.4	85.7	82.9	85.1	86.6	85.6	81.5	81.3
624300	81.8	82.5	83.2	83.8	84.5	85.2	85.8	86.5	87.0	82.8	81.5	82.1	82.5	83.5	84.2	84.8	85.5	86.2	85.8	87.2	86.8	85.9	85.0	84.1
624350	82.3	83.0	83.7	84.3	85.0	85.7	86.4	87.0	82.0	81.3	82.0	82.7	83.3	84.0	84.7	85.3	86.0	86.7	87.3	87.9	87.1	86.2	85.3	84.4
624400	83.0	83.7	84.3	85.0	85.7	86.4	87.0	87.7	87.2	82.0	82.7	83.3	84.0	84.7	85.4	86.0	86.7	87.4	88.0	88.7	88.0	86.7	85.8	84.9
624450	83.7	84.4	85.0	85.7	86.4	87.1	87.8	88.4	87.1	82.9	83.4	84.0	84.7	85.4	86.1	86.7	87.4	88.1	88.7	88.8	88.1	87.1	86.3	85.4
624500	84.4	85.1	85.8	86.4	87.1	87.8	88.5	89.1	85.1	83.4	84.1	84.7	85.4	86.1	86.8	87.4	88.1	88.8	89.4	89.9	88.5	87.6	86.7	85.9
624550	85.1	85.8	86.4	87.1	87.8	88.5	89.2	89.8	90.5	84.1	84.8	85.4	86.1	86.8	87.5	88.1	88.8	89.5	90.1	90.8	89.4	88.1	87.2	86.3
624600	85.8	86.5	87.1	87.8	88.5	89.2	89.9	90.5	87.3	84.8	85.5	86.1	86.8	87.5	88.2	88.8	89.5	90.2	90.8	91.5	90.2	88.5	87.7	86.8
624650	86.5	87.2	87.8	88.5	89.2	89.9	90.6	91.2	88.8	85.5	86.2	86.8	87.5	88.2	88.9	89.5	90.2	90.9	91.5	92.2	90.5	89.0	88.1	87.3
624700	87.2	87.9	88.5	89.2	89.9	90.6	91.3	91.9	92.4	88.2	86.9	87.5	88.2	88.9	89.6	90.2	90.9	91.6	92.2	91.5	90.3	89.5	88.6	87.8
624750	87.9	88.6	89.2	89.9	90.6	91.3	92.0	92.6	87.5	86.9	87.6	88.2	88.9	89.6	90.3	90.9	91.6	92.3	93.0	93.1	91.4	90.0	89.1	88.2
624800	88.6	89.3	89.9	90.6	91.3	92.0	92.6	93.3	93.1	87.6	88.3	88.9	89.6	90.3	91.0	91.6	92.3	93.0	93.7	94.3	93.0	90.4	89.6	88.7
624850	89.3	89.9	90.6	91.3	92.0	92.7	93.3	94.0	92.6	88.4	89.0	89.6	90.3	91.0	91.7	92.3	93.0	93.7	94.3	93.1	91.8	90.9	90.0	89.2
624900	90.0	90.6	91.3	92.0	92.7	93.4	94.0	94.7	91.0	89.0	89.7	90.3	91.0	91.7	92.3	93.0	93.7	94.4	95.0	95.6	92.2	91.4	90.4	89.4
624950	90.7	91.3	92.0	92.7	93.4	94.1	94.7	95.4	96.1	90.6	90.3	91.0	91.7	92.4	93.0	93.7	94.4	95.1	95.7	96.1	93.7	91.5	90.6	89.6
625000	91.4	92.0	92.7	93.4	94.1	94.8	95.4	96.1	92.8	90.4	91.0	91.7	92.4	93.1	93.7	94.4	95.1	95.8	96.4	95.3	93.1	91.7	90.7	89.7
625050	92.1	92.7	93.4	94.1	94.8	95.5	96.1	96.8	93.9	91.1	91.7	92.4	93.1	93.8	94.4	95.1	95.8	96.5	97.1	97.8	95.4	92.0	90.9	89.9
625100	92.8	93.5	94.3	94.8	95.5	96.3	96.8	98.3	97.9	93.5	92.0	92.6	93.7	94.1	94.4	95.7	96.1	96.7	97.8	98.1	95.9	92.3	92.3	90.3
625150	93.7	94.4	96.4	96.9	96.8	96.8	100.0	100.1	99.2	95.8	93.0	92.5	93.2	93.9	94.5	95.2	95.9	96.6	97.3	98.0	96.4	94.1	93.1	91.3
625200	94.6	95.6	97.4	97.9	98.3	98.7	99.1	99.5	91.3	95.3	91.2	91.8	92.5	93.2	93.9	94.5	95.2	95.9	96.6	96.5	95.2	93.9	92.9	91.9
625250	95.7	96.2	96.6	97.0	97.4	97.8	98.2	98.7	95.3	92.1	90.5	91.1	91.8	92.5	93.2	93.9	94.5	95.2	95.9	96.1	95.3	93.7	92.7	91.7
625300	94.9	95.3	95.7	96.1	96.6	97.0	97.4	96.5	94.5	89.1	88.8	90.5	91.1	91.8	92.5	93.2	93.8	94.5	95.2	95.9	94.8	93.5	92.5	91.6
625350	94.0	94.4	94.9	95.3	95.7	96.1	96.5	93.8	91.5	88.4	89.1	89.8	90.4	91.1	91.8	92.5	93.1	93.8	94.5	94.4	94.2	93.4	92.4	91.4
625400	93.2	93.6	94.0	94.4	94.8	95.2	95.7	96.1	96.2	88.6	88.4	89.1	89.7	90.4	91.1	91.8	92.5	93.1	93.8	94.5	93.6	92.9	92.2	91.2
625450	92.3	92.7	93.1	93.5	94.0	94.4	94.8	94.9	87.7	87.0	87.7	88.4	89.1	89.7	90.4	91.1	91.8	92.4	92.5	92.5	92.2	92.0	91.7	91.0
625500	91.4	91.8	92.3	92.7	93.1	93.5	93.9	94.3	93.4	87.6	87.0	87.7	88.4	89.0	89.7	90.4	91.1	91.7	92.4	91.8	91.3	91.0	90.8	90.5
625550	90.6	91.0	91.4	91.8	92.2	92.6	93.1	93.5	90.2	85.6	86.3	87.0	87.7	88.3	89.0	89.7	90.4	91.0	91.7	92.4	91.5	90.1	89.9	89.6
625600	89.7	90.1	90.5	91.0	91.4	91.8	92.2	92.6	88.3	84.9	85.6	86.3	87.0	87.6	88.3	89.0	89.7	90.3	91.0	90.9	90.3	89.3	89.0	88.7
625650	88.9	89.3	89.7	90.1	90.5	90.9	91.3	91.7	90.5	84.3	84.9	85.6	86.3	86.9	87.6	88.3	89.0	89.6	90.3	89.6	89.2	88.6	88.0	87.8
625700	88.0	88.4	88.8	89.2	89.6	90.1	90.5	90.1	85.4	83.6	84.2	84.9	85.6	86.3	86.9	87.6	88.3	88.9	89.6	90.3	89.3	87.6	87.1	86.9
625750	87.1	87.5	87.9	88.4	88.8	89.2	89.6	90.0	90.4	82.9	83.5	84.2	84.9	85.6	86.2	86.9	87.6	88.2	88.9	87.8	86.7	86.4	86.2	85.9
625800	86.3	86.7	87.1	87.5	87.9	88.3	88.7	89.2	89.6	84.8	82.8	83.5	84.2	84.9	85.5	86.2	86.9	87.5	88.2	88.8	86.6	85.5	85.3	85.0
625850	85.4	85.8	86.2	86.6	87.0	87.5	87.9	85.8	81.7	85.0	82.1	82.8	83.5	84.1	84.8	85.5	86.2	86.8	87.5	87.0	84.9	84.6	84.3	84.1
625900	84.5	84.9	85.4	85.8	86.2	86.6	87.1	85.5	84.1	81.5	81.6	82.3	82.7	83.6	84.3	84.9	85.6	86.3	86.5	86.3	84.6	83.8	83.6	83.3
625950	83.7	84.1	84.5	84.9	85.3	85.9	84.7	83.6	87.0	84.0	80.8	81.6	81.1	82.5	83.8	84.5	84.2	85.8	83.6	86.4	84.1	82.5	82.0	81.4
626000	82.8	83.2	83.6	84.1	84.6	82.9	80.6	81.4	83.5	83.6	83.8	85.1	83.5	83.5	86.1	85.0	85.2	88.0	83.3	83.3	83.3	83.2	83.2	83.2
626050	81.9	82.3	82.3	83.4	83.9	84.4	91.4	95.9	94.5	94.4	94.4	94.4	94.4	94.5	94.5	94.5	94.5	94.6	94.6	94.6	94.6	94.6	94.7	94.7
626100	81.0	81.2	80.3	80.5	89.1	95.9	90.3	84.6	82.1	82.0	82.0	82.0	82.0	82.1	82.1	82.1	82.1	82.1	82.2	82.2	82.2	82.2	82.3	82.3
626150	81.5	80.5	87.8	95.2	92.1	85.8	80.0	85.0	83.6	83.5	83.5	83.5	83.5	83.6	83.6	83.6	83.6	83.6	83.7	83.7	83.7	83.6	85.0	83.8
626200	86.6	93.2	93.8	87.6	81.4	84.5	82.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.3	83.0	84.7
626250	95.6	89.3	83.1	82.2	84.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.2	82.9	84.6	83.3
626300	84.9	80.0	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.1	82.8	84.4	83.2
626350	85.0	81.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.0	82.7	84.1	83.2
626400	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.9	82.6	83.9	83.1
626450	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.8	82.5	83.8	83.1
626500	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.7	82.4	83.4	83.1
626550	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.6	82.3	83.2	83.0
626600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.5	82.2	82.9	82.9
626650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.5	82.1	82.7	82.7
626700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.4	82.0	82.4	82.4
626750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.3	82.0	82.2	82.2
626800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.2	81.9	81.9	81.9
626850	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.1	81.7	81.7	81.7
626900	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.5	81.5	81.5
626950	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.2	81.2	81.2
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	81.0	81.0	81.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.7	80.7	80.7
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.5	80.5	80.5
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.2	80.2	80.2
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Subgrade Elevations: Post-Settlement (sheet 6 of 6)

EASTING (ft) \ NORTHING (ft)	1352000	1351950	1351900	1351850	1351800	1351750	1351700	1351650	1351600	1351550	1351500	1351450	1351400	1351350	1351300	1351250	1351200	1351150	1351100
623600	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623650	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623700	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623750	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623800	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623850	80.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623900	80.0	83.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
623950	91.0	87.6	81.6	85.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624000	88.8	94.5	92.0	83.6	84.7	80.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624050	80.6	80.0	91.4	92.5	84.0	84.1	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624100	83.2	81.6	79.6	90.9	92.9	84.4	83.6	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624150	83.7	82.8	81.1	80.7	91.0	93.4	84.8	83.1	81.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624200	84.1	83.3	82.7	82.0	80.2	89.7	93.7	85.2	82.5	81.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624250	84.5	83.7	83.0	82.3	81.7	80.0	89.2	94.1	85.6	82.0	82.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624300	85.0	84.1	83.3	82.7	82.0	81.3	79.8	88.6	94.6	86.0	81.5	82.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624350	85.5	84.6	83.7	83.0	82.3	81.7	80.8	79.7	88.1	95.0	85.9	83.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0
624400	85.9	85.1	84.2	83.4	82.6	82.0	81.3	80.6	79.7	88.4	92.8	81.6	84.0	80.0	80.0	80.0	80.0	80.0	80.0
624450	86.4	85.5	84.7	83.8	83.0	82.3	81.7	81.0	80.2	80.2	95.9	85.5	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624500	86.9	86.0	85.2	84.3	83.4	82.8	82.0	81.3	80.5	79.6	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624550	87.4	86.5	85.6	84.8	83.9	82.9	82.2	81.6	80.8	79.7	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624600	87.8	87.0	86.1	85.1	84.1	83.1	82.5	81.8	81.1	79.7	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624650	88.2	87.2	86.2	85.2	84.3	83.4	82.7	82.1	81.4	79.8	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624700	88.4	87.4	86.4	85.4	84.4	83.6	83.0	82.3	81.6	80.0	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624750	88.6	87.6	86.6	85.6	84.6	83.9	83.2	82.6	81.9	80.2	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624800	88.8	87.8	86.8	85.8	84.8	84.1	83.5	82.8	82.1	81.1	94.1	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624850	89.2	88.4	87.7	86.0	85.7	84.5	84.4	83.2	82.9	81.7	94.1	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624900	90.4	88.3	88.5	86.4	86.7	85.9	85.5	83.8	83.5	80.0	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
624950	91.1	89.3	89.1	87.4	87.2	85.8	85.9	84.4	83.1	80.0	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625000	90.9	90.0	89.0	88.0	87.0	86.3	85.7	85.0	84.3	83.6	94.4	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625050	90.8	89.8	88.8	87.8	86.8	86.1	85.4	84.8	84.1	82.1	94.4	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625100	90.6	89.6	88.6	87.6	86.6	85.8	85.2	84.5	83.8	80.7	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625150	90.4	89.4	88.4	87.4	86.4	85.6	84.9	84.2	83.6	80.6	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625200	90.2	89.2	88.2	87.2	86.2	85.3	84.7	84.0	83.3	80.1	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625250	90.0	89.0	88.0	87.1	86.1	85.1	84.4	83.7	82.7	80.1	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625300	89.8	88.8	87.9	86.9	85.9	84.9	84.2	83.5	82.3	79.9	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625350	89.4	88.7	87.7	86.7	85.7	84.7	83.9	83.2	81.7	79.9	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625400	88.5	88.2	87.5	86.5	85.5	84.5	83.6	83.0	82.3	81.6	94.1	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625450	87.5	87.3	87.0	86.3	85.3	84.3	83.4	82.7	82.0	80.5	94.0	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625500	86.8	86.4	86.1	85.9	85.1	84.1	83.2	82.5	81.8	80.2	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625550	85.7	85.4	85.2	84.9	84.7	84.0	83.0	82.2	81.5	79.8	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625600	84.8	84.5	84.3	84.0	83.8	83.5	82.8	82.0	81.3	79.7	93.9	86.9	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625650	83.8	83.6	83.3	83.1	82.8	82.6	82.3	81.7	80.9	79.7	94.0	86.8	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625700	83.1	82.8	82.6	82.3	82.1	81.8	81.6	81.4	80.6	80.5	95.9	85.3	85.0	80.0	80.0	80.0	80.0	80.0	80.0
625750	81.3	82.1	81.9	81.6	81.4	80.8	80.6	80.3	79.7	89.0	92.5	81.3	83.8	80.0	80.0	80.0	80.0	80.0	80.0
625800	83.2	84.4	83.9	83.1	83.0	83.0	83.0	84.5	90.8	94.5	85.4	84.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625850	94.7	94.7	94.7	94.8	94.8	94.8	94.8	94.0	90.4	84.6	82.2	81.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625900	82.3	82.3	82.3	82.4	82.4	82.4	82.4	81.7	80.0	85.0	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
625950	83.8	83.8	83.8	83.8	83.9	83.9	83.9	83.3	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626000	81.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626050	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626100	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626150	81.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626200	81.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626250	81.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626300	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626350	81.1	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626400	81.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626450	81.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626500	81.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626550	80.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626600	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626650	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626700	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626750	80.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626800	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626850	80.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626900	80.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
626950	80.2	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627000	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627050	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627100	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627150	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
627200	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Written by: STEVEN DAPP Date: 02/04/16 (YY/MM/DD) Reviewed by: _____ Date: __/__/__ (YY/MM/DD)

Client: OMNI Project: OHIO FACILITY Project/Proposal No.: FW0406 Task No.: 03

SUBGRADE ELEVATION: POST-SETTLEMENT

$$h_{SUBGRADE(POST)} = h_{SUBGRADE(PRE)} + S_{TOTAL}$$

$$h_{SUBGRADE(POST)} = 89.0\,ft + (-1.60\,ft)$$

$$\boxed{h_{SUBGRADE(POST)} = 87.4\,ft}$$

$h_{SUBGRADE(POST)} = 87.4\,ft$ ← FROM SPREADSHEET SOLN.

∴ O.K. √√

ATTACHMENT 7

Maximum Subgrade Slope: Post-Settlement

Maximum Subgrade Slope: Post-Settlement (sheet 1 of 6)

(%)	NORTHING (ft)																							
	1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650	1357600	1357550	1357500	1357450	1357400	1357350	1357300	1357250	1357200	1357150	1357100	1357050	1357000	1356950	1356900	1356850
623600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0
623850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	3.2	3.2	2.1	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5
623900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	2.8	9.2	10.4	11.0	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
623950	0.0	0.0	0.0	0.0	0.0	0.0	7.0	2.0	6.6	16.5	9.2	2.9	2.2	2.3	2.3	2.4	3.9	2.5	2.5	2.6	2.6	2.7	2.7	3.1
624000	0.0	0.0	0.0	0.0	0.0	5.0	2.5	6.7	18.7	7.5	16.3	14.1	13.4	13.0	12.6	12.4	12.1	13.2	12.7	12.5	11.7	11.1	10.4	10.6
624050	0.0	0.0	0.0	0.0	0.0	3.2	9.2	16.9	8.0	20.5	5.9	2.6	2.4	2.2	1.9	1.7	2.9	1.5	1.1	1.2	1.4	1.3	0.9	0.5
624100	0.0	0.0	0.0	0.0	2.5	3.9	10.4	8.7	17.0	5.3	1.8	1.7	1.7	1.8	1.5	1.5	1.4	2.8	2.7	2.7	2.2	1.9	1.5	1.5
624150	0.0	0.0	0.0	0.0	3.8	2.7	11.0	2.1	14.7	1.8	1.7	1.3	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.5
624200	0.0	0.0	0.0	0.0	3.9	2.4	10.9	0.6	14.2	1.5	1.9	1.4	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
624250	0.0	0.0	0.0	0.0	3.9	2.4	10.9	0.6	13.6	1.4	1.5	1.4	1.7	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
624300	0.0	0.0	0.0	0.0	3.9	2.4	10.9	0.6	13.3	1.0	1.5	1.4	1.7	1.9	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
624350	0.0	0.0	0.0	0.0	3.9	2.4	10.9	0.9	13.2	1.0	1.5	1.4	1.6	1.9	2.0	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
624400	0.0	0.0	0.0	0.0	3.9	2.4	10.9	2.2	12.8	2.0	1.5	1.4	1.5	1.8	2.0	2.0	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9
624450	0.0	0.0	0.0	0.0	3.9	2.4	10.9	0.6	13.9	0.9	2.7	1.4	1.5	1.7	2.0	2.0	2.0	1.7	1.9	1.9	1.9	1.9	1.9	1.9
624500	0.0	0.0	0.0	0.0	3.9	2.5	10.9	0.9	13.7	0.6	2.8	1.5	1.4	1.7	2.0	2.0	2.0	2.0	1.7	1.9	1.9	1.9	1.9	1.9
624550	0.0	0.0	0.0	0.0	3.5	3.4	11.0	4.8	14.7	1.2	2.8	1.6	1.6	1.7	1.7	2.0	2.0	2.0	2.0	1.7	0.9	1.9	1.9	1.9
624600	0.0	0.0	0.0	0.0	1.1	3.5	10.2	13.6	14.4	7.8	2.6	1.6	1.5	1.2	1.7	1.9	2.3	3.6	2.5	0.9	2.4	2.0	1.9	1.7
624650	0.0	0.0	0.0	0.0	0.0	5.1	6.2	15.2	0.9	14.2	1.7	0.6	2.9	1.5	2.5	3.1	3.0	4.9	5.5	1.9	3.7	5.1	3.2	4.0
624700	0.0	0.0	0.0	0.0	0.0	2.9	5.0	8.5	14.2	13.9	6.7	2.9	2.2	3.6	1.8	3.3	3.0	3.4	6.7	5.2	2.4	5.8	5.8	5.2
624750	0.0	0.0	0.0	0.0	0.0	0.0	5.7	6.7	15.3	4.4	15.3	3.3	1.2	2.6	1.4	1.9	1.9	1.9	3.1	4.5	1.9	3.6	2.6	1.9
624800	0.0	0.0	0.0	0.0	0.0	0.0	3.3	5.0	8.6	12.8	17.8	7.4	1.9	1.4	1.4	1.4	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9
624850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	7.0	15.7	6.1	16.7	1.7	1.6	1.4	1.4	1.5	1.8	1.9	1.9	1.9	1.9	1.9	1.9
624900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	4.6	8.8	11.9	19.0	7.3	2.0	1.4	1.4	1.4	1.6	1.7	1.8	1.9	1.9	1.9	1.9
624950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	7.4	16.0	7.4	17.2	1.5	1.6	1.4	1.4	1.4	1.4	1.5	1.7	1.8	1.9	1.9
625000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.2	9.1	11.0	19.8	7.5	1.7	1.6	1.6	1.4	1.4	1.4	1.4	1.5	1.6	1.6
625050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	7.6	17.1	5.6	21.8	6.1	1.0	2.1	1.9	1.5	1.4	1.4	1.4	1.4	1.5
625100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	3.5	6.5	20.3	7.2	19.4	16.9	10.6	4.9	1.9	1.8	1.5	1.5	2.1	1.5
625150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	1.4	6.2	17.6	9.2	5.0	13.7	16.8	15.5	9.6	4.7	1.0	3.1	3.1
625200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	2.3	8.8	10.2	13.5	12.9	8.0	5.2	12.5	15.1	15.2	9.4	3.5
625250	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	4.0	5.2	5.6	9.9	10.5	13.5	12.9	8.3	4.3	13.7	16.5
625300	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	5.0	3.9	5.2	6.0	10.0	10.6	13.5	12.9	7.6
625350	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	5.0	3.9	5.2	6.1	10.0	10.6
625400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	5.0	3.9	5.2
625450	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8
625500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625550	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626250	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626300	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626350	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626450	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626550	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

EASTING (ft)

Maximum Subgrade Slope: Post-Settlement (sheet 2 of 6)

(%)	NORTHING (ft)																								
EASTING (ft)	1356800	1356750	1356700	1356650	1356600	1356550	1356500	1356450	1356400	1356350	1356300	1356250	1356200	1356150	1356100	1356050	1356000	1355950	1355900	1355850	1355800	1355750	1355700	1355650
623600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623800	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5
623850	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0
623900	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
623950	5.7	2.8	2.9	3.0	3.0	3.1	3.1	3.5	4.6	3.3	3.3	4.9	5.7	4.6	7.7	3.6	3.6	7.2	8.2	3.8	3.8	4.6	5.3	4.0
624000	9.9	11.2	12.0	11.2	10.9	9.2	10.5	13.3	12.9	12.9	12.0	10.4	9.4	10.8	8.1	11.8	10.6	7.5	6.3	12.7	13.3	12.3	11.5	12.0
624050	2.5	2.2	1.0	1.5	1.9	1.2	4.7	4.2	3.9	2.5	2.9	3.3	2.3	1.4	2.8	2.1	5.7	4.6	6.0	8.3	3.8	4.3	3.9	1.9
624100	1.5	2.6	4.1	3.6	3.3	3.3	2.4	1.3	1.9	2.6	2.7	1.6	1.8	3.1	1.0	4.8	5.0	1.6	2.7	7.7	5.4	1.7	1.6	2.5
624150	1.5	1.5	1.5	1.5	4.8	4.2	3.3	2.4	1.6	1.9	1.6	1.6	1.6	1.6	1.6	2.6	1.7	2.3	7.7	4.4	1.6	1.6	1.6	1.6
624200	1.7	1.7	1.7	1.7	2.7	6.4	5.1	2.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	5.5	9.2	3.6	1.8	1.8	1.8
624250	1.9	1.9	1.9	1.9	1.9	4.3	5.8	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.9	8.1	2.9	1.9	1.9	1.9
624300	1.9	1.9	1.9	1.9	3.3	6.2	3.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.7	7.1	6.6	1.5	2.0	2.0	1.9
624350	1.9	1.9	1.9	1.9	0.8	2.7	5.9	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.0	7.9	5.5	1.9	1.9	1.9
624400	1.9	1.9	1.9	2.0	4.1	5.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	6.5	7.3	1.4	1.9	1.9	1.9
624450	1.9	1.9	1.9	2.0	2.8	5.7	4.8	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.6	5.5	9.8	1.9	1.9	1.9	1.9
624500	1.9	1.9	1.9	2.0	3.1	3.7	3.6	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	7.8	5.3	1.9	1.9	1.9
624550	1.9	1.9	1.9	1.8	5.7	6.5	3.3	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	7.8	4.2	2.4	1.9	1.9	1.9
624600	0.6	0.6	0.4	0.9	1.6	3.2	5.1	2.6	1.9	1.9	1.6	1.9	1.9	1.7	1.9	1.9	1.8	1.9	5.5	8.8	4.1	1.6	1.9	1.8
624650	3.5	2.9	2.9	2.4	2.9	5.3	3.3	1.0	2.0	1.1	1.4	1.9	1.2	1.4	1.8	1.3	1.5	1.7	3.9	7.8	2.5	2.0	1.6	1.4
624700	3.4	3.5	2.7	2.0	2.2	4.4	2.8	0.7	1.9	1.2	1.4	1.9	1.3	1.4	1.8	1.5	1.5	1.6	3.5	7.5	2.2	1.7	0.5	1.2
624750	2.0	2.2	1.9	1.9	1.9	2.0	4.7	2.0	1.9	1.9	1.7	1.9	1.9	1.8	1.9	1.9	1.9	1.8	5.2	8.7	3.8	2.3	2.2	2.5
624800	1.9	1.9	1.9	1.9	2.3	5.0	3.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	7.8	4.7	2.7	2.0	2.2	1.9
624850	1.9	1.9	1.9	1.9	1.8	2.6	3.4	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	7.8	5.7	1.9	1.9	1.9
624900	1.9	1.9	1.9	1.9	1.9	5.2	5.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5.5	10.2	1.8	1.9	1.9	1.9
624950	1.9	1.9	1.9	1.9	2.2	4.2	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.7	6.2	7.8	0.3	1.9	1.9	1.9
625000	1.9	1.9	1.9	1.9	1.9	2.1	4.0	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.6	6.9	5.5	1.4	1.9	1.9
625050	1.6	1.7	1.8	1.8	2.1	4.2	3.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	7.1	8.3	2.7	1.9	1.9	1.9
625100	1.4	1.4	1.5	1.7	1.7	2.8	3.4	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.6	8.0	3.2	1.9	1.9	1.9
625150	2.1	1.5	1.4	1.4	1.2	4.8	3.4	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	5.5	9.4	3.1	1.8	1.8	1.8
625200	4.0	3.8	1.8	1.5	2.1	3.7	0.8	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0	1.6	2.0	7.7	4.8	1.6	1.6	1.6	1.6
625250	14.6	8.1	3.7	3.6	1.5	2.1	3.5	1.4	1.6	1.6	2.8	1.6	1.6	3.5	1.2	4.0	4.3	1.7	2.3	8.2	5.5	1.7	1.6	2.5
625300	5.7	13.6	14.7	12.3	8.0	4.1	3.7	5.1	5.7	4.3	3.1	3.6	4.0	2.0	3.7	2.7	4.4	4.7	4.3	7.8	5.5	4.4	4.7	3.2
625350	13.5	12.9	7.5	4.8	10.8	12.5	12.3	12.0	11.0	10.4	11.2	9.3	8.4	10.1	7.2	9.9	8.9	7.0	4.6	10.1	12.3	11.6	10.6	11.6
625400	6.3	10.1	10.7	13.5	12.8	7.4	6.3	8.2	7.4	6.9	6.1	6.0	8.4	6.6	9.4	8.1	5.8	5.7	10.6	6.9	5.6	5.5	6.7	5.9
625450	5.0	4.0	5.3	6.3	10.8	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	11.0
625500	0.0	0.0	3.9	5.0	1.6	1.5	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	2.1
625550	0.0	0.0	0.0	0.0	0.0	1.2	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.9
625600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
625950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626250	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626300	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626350	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626450	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626550	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Maximum Subgrade Slope: Post-Settlement (sheet 3 of 6)

(%)	NORTHING (ft)																								
EASTING (ft)	1355600	1355550	1355500	1355450	1355400	1355350	1355300	1355250	1355200	1355150	1355100	1355050	1355000	1354950	1354900	1354850	1354800	1354750	1354700	1354650	1354600	1354550	1354500	1354450
623600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623800	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0
623850	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
623900	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
623950	4.0	6.8	5.2	6.5	8.2	4.3	4.3	9.6	6.3	5.2	5.8	4.6	4.6	7.3	5.6	4.8	4.8	8.5	5.4	5.0	5.0	6.3	5.4	5.2
624000	11.4	9.5	8.7	9.0	7.7	10.4	9.9	5.7	12.4	12.3	11.5	11.9	11.5	9.4	9.1	10.5	8.2	8.4	10.0	8.2	12.8	11.4	12.5	11.4
624050	2.8	4.0	1.3	2.1	2.9	2.1	5.0	3.8	8.6	4.5	4.4	2.7	3.0	4.5	1.6	1.3	2.1	3.1	0.6	4.4	5.4	4.9	3.9	3.8
624100	2.3	1.6	1.7	2.0	1.6	4.1	3.6	5.8	6.9	1.1	1.5	2.4	2.6	1.6	1.6	3.6	1.6	2.8	4.7	4.3	1.7	1.2	3.0	3.0
624150	1.7	1.7	1.7	1.7	1.7	1.7	1.3	7.8	4.4	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.4	4.9	5.4	1.5	1.7	2.2	1.7
624200	1.8	1.8	1.8	1.8	1.8	1.2	3.4	6.2	2.7	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.6	6.3	3.5	1.9	1.9	1.9
624250	1.9	2.0	2.0	2.0	2.0	2.0	2.8	7.0	5.0	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	2.5	5.7	3.5	1.5	1.9	1.9	1.9
624300	1.9	2.0	2.0	2.0	2.0	1.9	5.5	7.0	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	6.5	7.4	1.4	1.9	1.9	1.9
624350	1.9	1.9	1.9	1.9	1.9	1.9	2.8	10.6	3.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.5	4.4	5.4	2.4	1.9	1.9	1.9
624400	1.9	1.9	1.9	1.9	1.9	1.9	1.8	7.9	7.1	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.4	3.7	5.4	1.9	1.9	1.9	1.9	1.9
624450	1.9	1.9	1.9	1.9	1.9	1.9	4.3	7.0	4.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.1	6.7	7.2	1.5	1.9	1.9	1.9
624500	1.9	1.9	1.9	1.9	1.9	1.9	1.8	5.8	5.0	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.6	4.2	4.1	1.6	1.9	1.9	1.9
624550	1.9	1.9	1.9	1.9	1.9	1.9	2.2	7.0	4.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	7.2	6.0	2.9	1.9	1.9	1.9
624600	1.9	1.9	1.9	1.9	1.9	1.9	3.3	7.8	2.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.7	5.5	3.5	1.4	1.9	1.9
624650	1.7	1.9	1.9	1.9	1.9	2.0	1.4	7.0	6.1	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.6	6.3	4.3	0.6	1.9	1.9	1.9
624700	2.4	2.0	2.0	1.4	1.5	2.0	5.5	7.0	3.3	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	3.4	7.4	4.4	1.9	1.9	1.9	1.9
624750	2.6	3.2	1.9	2.2	3.0	2.3	2.3	9.8	5.0	1.7	2.1	2.1	2.1	2.1	2.0	2.0	2.0	0.5	3.2	5.6	2.4	2.0	2.0	2.0
624800	3.0	3.6	3.9	2.6	4.1	5.6	4.0	4.7	7.5	2.4	2.1	2.1	2.1	2.2	2.1	2.1	1.7	3.8	5.6	2.2	2.1	2.1	2.1	2.1
624850	1.9	2.0	3.2	2.0	2.3	4.4	5.6	5.3	2.9	3.5	1.8	2.1	3.4	2.4	2.1	2.2	2.3	3.3	7.6	7.3	2.1	2.1	2.1	2.1
624900	1.9	1.9	1.9	1.9	1.9	1.9	3.5	3.4	1.9	0.9	1.6	3.2	2.3	1.5	1.5	2.0	2.0	1.6	5.3	4.3	1.8	2.1	2.1	2.1
624950	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.3	1.3	1.9	1.0	1.1	1.8	1.6	5.8	6.1	2.1	2.4	1.8	2.1	2.1
625000	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.3	3.7	4.7	7.9	3.5	2.2	2.0	1.5	2.5	1.8
625050	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	3.3	3.1	8.3	7.3	4.4	5.0	2.5	2.0	2.4	2.0	1.5
625100	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	3.6	6.6	5.0	5.6	5.4	1.8	2.1	2.0	2.2	2.6	2.0	2.0
625150	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	4.6	5.1	5.2	0.5	2.0	2.1	2.1	2.1	2.0	1.9	2.2	2.5
625200	1.6	1.5	1.6	1.7	1.9	1.9	1.9	1.9	2.1	2.5	6.3	3.9	5.3	2.6	2.5	2.1	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9
625250	1.8	1.5	1.5	1.6	1.6	1.9	2.2	1.8	6.4	3.9	5.9	6.1	4.1	1.2	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.1
625300	2.6	4.3	4.5	3.2	1.9	3.5	4.6	4.0	5.4	4.1	2.2	2.9	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.2	0.7	4.0
625350	12.4	12.6	3.6	6.1	3.4	2.4	5.7	5.3	0.6	4.2	0.9	2.0	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	0.6	5.1	3.4	4.8
625400	4.2	9.2	21.1	7.1	5.7	2.9	2.7	3.9	2.0	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.2	3.5	3.4	3.7	5.4	1.1
625450	11.8	19.0	0.7	21.1	6.9	3.5	1.8	1.9	2.0	2.1	2.1	2.0	1.9	1.9	1.9	1.9	3.0	1.8	2.7	5.1	4.3	1.7	2.2	1.8
625500	1.7	4.2	19.6	7.4	17.3	0.6	1.7	1.9	2.0	2.0	2.0	1.9	1.9	1.9	2.4	0.9	3.4	5.1	3.3	1.4	3.6	1.9	1.9	1.9
625550	5.4	2.1	8.4	12.6	18.7	7.5	2.2	1.8	2.0	1.9	1.9	1.9	2.1	0.3	4.6	4.5	3.0	2.6	2.9	1.8	1.9	1.9	1.9	1.9
625600	0.0	5.9	6.6	16.2	3.6	16.6	1.4	1.9	2.1	1.9	1.9	0.8	4.8	4.5	4.0	4.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9
625650	0.0	3.3	4.5	8.2	13.8	16.4	6.4	3.4	1.7	2.2	3.9	4.2	4.0	4.7	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
625700	0.0	0.0	6.0	6.1	15.8	3.5	16.6	1.8	1.3	3.9	4.2	4.3	0.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4
625750	0.0	0.0	2.8	5.0	8.1	15.9	15.5	9.0	4.4	2.6	1.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.6
625800	0.0	0.0	0.0	5.7	5.6	15.4	2.0	17.4	3.5	1.7	1.7	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5
625850	0.0	0.0	0.0	2.3	5.0	8.1	15.7	15.9	10.4	2.4	1.6	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	3.7
625900	0.0	0.0	0.0	0.0	5.5	5.0	14.9	1.1	18.3	2.8	1.5	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.6	4.9
625950	0.0	0.0	0.0	0.0	1.8	5.0	8.1	16.8	14.1	10.3	3.8	2.0	1.7	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.3
626000	0.0	0.0	0.0	0.0	0.0	5.3	4.3	14.1	3.4	17.5	3.4	1.7	1.6	1.7	1.8	1.9	1.9	1.9	2.1	2.3	1.8	1.8	2.3	2.0
626050	0.0	0.0	0.0	0.0	0.0	1.3	5.0	8.1	17.4	12.9	10.4	5.8	3.2	1.6	1.7	1.9	2.1	0.7	0.5	2.8	2.9	2.3	2.0	3.8
626100	0.0	0.0	0.0	0.0	0.0	0.0	5.1	3.7	13.0	4.6	18.0	0.6	4.1	1.8	1.5	0.2	1.8	3.2	1.3	1.4	2.1	2.0	1.7	2.6
626150	0.0	0.0	0.0	0.0	0.0	0.0	0.8	5.0	8.2	16.8	10.6	9.7	3.8	0.8	2.8	2.4	1.4	2.9	3.1	1.7	2.0	2.0	1.6	2.0
626200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	3.2	11.8	7.6	14.4	6.6	2.6	2.7	3.6	2.2	2.1	2.2	2.0	2.0	2.0	1.8	2.0
626250	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	5.2	8.3	16.8	9.7	9.7	7.2	1.2	2.0	1.9	1.6	1.9	2.0	2.0	1.8	1.9	2.0
626300	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	3.0	10.7	7.0	19.1	5.7	3.2	1.4	1.4	1.4	1.7	2.0	2.0	1.6	1.9	2.0
626350	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	8.2	16.8	10.7	13.8	4.7	2.4	1.4	1.4	1.5	1.8	2.0	1.7	2.0	2.0
626400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	3.0	9.7	8.7	20.0	5.2	3.1	1.8	1.4	1.4	1.5	1.8	1.9	1.9	1.8
626450	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	7.8	16.8	9.2	15.7	2.9	1.8	1.4	1.4	1.3	1.4	1.7	1.6	1.5
626500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	3.3	9.0	10.9	19.2	6.8	1.5	1.5	1.4	1.1	1.4	1.4	1.4	1.4
626550	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	7.3	16.9	7.0	15.7	2.3	1.5	1.4	1.4	1.3	1.4	1.4	1.4
626600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	3.7	8.6	12.0	19.1	7.0	2.2	1.4	1.3	1.4	1.4	1.4	1.5
626650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	6.8	16.4	5.9	17.5	1.7	1.7	1.1	1.4	1.4	1.6	2.2
626700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	4.2	8.3	13.2	18.6	8.7	2.2	1.3	1.7	2.0	1.2	10.1
626750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	6.4	16.1	2.4	22.3	6.5	0.6	1.6	7.8	18.5	16.2
626800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	4.8	6.5	22.0	4.9	18.8	15.2	16.1	17.5	4.0	16.0
626850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.5	5.7	18.3	9.8	2.4	3.7	12.5	16.4	7.6
626900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	2.4	8.4	10.1	10.9	11.2	9.9	6.8	4.4
626950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	3.7	4.8	3.5	3.8	4.3	4.9	3.0
627000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	4.7	4.3	2.1	0.0	0.0
627050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Maximum Subgrade Slope: Post-Settlement (sheet 4 of 6)

(%)	NORTHING (ft)																								
EASTING (ft)	1354400	1354350	1354300	1354250	1354200	1354150	1354100	1354050	1354000	1353950	1353900	1353850	1353800	1353750	1353700	1353650	1353600	1353550	1353500	1353450	1353400	1353350	1353300	1353250
623600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623800	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5
623850	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
623900	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
623950	5.2	7.8	5.4	9.1	5.4	5.5	5.6	6.8	5.8	8.1	5.7	5.8	5.8	5.9	6.2	7.2	6.0	6.1	7.9	8.2	7.3	9.8	6.3	6.4
624000	9.7	8.7	9.7	7.7	12.9	12.1	11.4	10.7	11.2	9.3	11.8	10.7	7.2	9.8	12.1	10.9	11.8	11.2	9.1	8.2	9.6	6.9	12.9	12.2
624050	3.2	3.6	1.1	6.0	5.8	4.7	4.4	4.6	3.2	4.5	3.1	4.5	2.8	6.5	5.0	5.2	3.8	3.9	4.8	3.8	2.3	4.8	6.5	5.4
624100	1.6	1.6	2.7	3.5	3.1	1.1	1.6	1.6	2.5	0.9	4.1	1.4	5.2	2.0	1.4	1.3	2.8	3.0	1.6	1.6	3.2	2.9	5.1	1.7
624150	1.7	1.7	1.7	4.8	4.9	1.7	1.7	1.7	1.7	1.7	2.6	4.0	3.1	2.9	1.2	1.8	2.1	1.8	1.8	1.8	1.8	5.1	5.0	1.8
624200	1.9	1.9	1.7	3.9	5.5	1.3	1.9	1.9	1.9	1.9	1.9	3.6	3.5	3.6	1.9	1.9	1.9	1.9	1.9	1.9	1.5	4.5	5.6	1.6
624250	1.9	1.9	1.9	4.0	4.8	2.6	1.9	2.0	2.0	2.0	1.8	2.5	4.7	2.3	2.3	1.9	2.0	2.0	2.0	2.0	2.0	3.8	5.0	2.4
624300	1.9	1.9	1.9	4.8	4.9	2.0	2.0	2.0	2.0	2.0	2.0	3.6	3.3	3.2	2.4	1.6	2.0	2.0	2.0	2.0	2.0	5.1	5.0	2.0
624350	1.9	1.9	1.4	4.0	4.8	1.4	1.9	1.9	1.9	1.9	1.9	0.8	3.1	3.3	1.0	2.0	1.9	1.9	1.9	1.9	1.6	2.9	5.6	1.8
624400	1.9	1.9	1.9	2.7	4.9	1.6	1.9	1.9	1.9	1.9	1.6	3.3	3.9	3.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.1	5.0	1.5
624450	1.9	1.9	2.4	4.4	2.6	1.6	1.9	1.9	1.9	1.9	1.9	3.5	3.2	5.0	2.6	1.9	1.9	1.9	1.9	1.9	1.9	4.7	3.5	1.6
624500	2.0	2.0	1.5	5.1	4.1	2.1	1.9	1.9	1.9	1.9	1.8	1.9	4.6	1.9	1.4	1.9	1.9	1.9	1.9	1.9	1.9	4.5	5.1	2.3
624550	2.0	2.0	2.0	4.8	4.9	1.9	1.9	1.9	1.9	1.9	1.9	3.7	4.0	2.9	1.5	1.9	1.9	1.9	1.9	1.9	1.9	5.0	5.0	1.9
624600	1.9	1.9	1.6	4.2	5.4	1.5	1.9	1.9	1.9	1.9	1.9	0.5	3.3	3.6	1.8	1.9	1.9	1.9	1.9	1.9	1.5	4.0	6.8	1.4
624650	1.9	1.9	1.9	3.8	4.9	2.4	1.9	1.9	1.9	1.9	1.4	2.5	3.7	1.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	5.0	2.9
624700	1.9	1.9	1.9	4.9	4.8	1.9	1.9	1.9	1.9	1.9	2.0	2.8	4.2	5.1	1.4	1.9	1.9	1.9	2.0	2.0	1.9	5.1	4.9	1.9
624750	2.0	2.0	1.5	3.1	4.1	1.6	1.9	1.9	1.9	1.9	1.9	1.5	3.7	2.7	1.5	2.0	1.9	1.9	1.9	1.9	1.7	2.9	5.6	1.8
624800	2.1	2.1	2.1	3.6	4.9	1.5	2.0	2.0	2.0	2.0	2.0	3.3	5.5	0.4	2.0	2.0	2.0	1.9	1.9	1.9	1.9	3.5	5.0	1.4
624850	2.1	2.1	2.1	4.8	3.8	1.9	2.1	2.1	2.1	2.1	2.1	1.8	5.6	5.1	2.1	2.1	2.0	2.0	2.0	2.0	2.2	4.6	3.6	1.8
624900	2.1	2.1	2.0	4.7	5.0	2.1	2.1	2.2	2.2	2.1	1.9	1.6	4.6	2.5	1.7	2.1	2.1	2.1	2.1	2.1	1.9	5.0	4.8	3.2
624950	2.1	2.1	2.0	5.3	5.2	2.0	2.1	2.2	2.2	2.1	1.8	4.2	5.0	1.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	4.9	4.3	3.4
625000	2.1	2.0	1.9	2.9	7.4	1.9	2.2	2.2	2.1	2.2	2.1	1.3	5.0	4.0	1.8	2.1	2.1	1.3	1.5	2.1	3.3	5.5	1.7	1.8
625050	2.3	1.8	1.9	1.8	5.0	3.1	2.2	2.2	2.2	2.1	1.7	2.7	3.6	4.8	5.3	2.3	3.9	1.6	5.3	3.2	5.9	2.2	0.6	1.9
625100	2.1	1.5	2.0	5.0	4.9	2.1	1.8	2.2	2.2	1.8	1.6	3.6	4.2	6.1	5.1	4.2	3.7	6.4	5.9	2.1	2.4	2.5	1.3	1.9
625150	1.9	1.9	0.4	3.2	3.3	1.6	1.5	2.2	0.9	1.0	1.8	1.9	2.2	0.5	0.7	2.2	0.5	1.9	7.9	8.3	4.0	1.9	1.9	1.9
625200	1.7	2.7	4.3	3.9	4.2	0.5	1.4	2.0	2.0	1.9	2.2	2.7	2.7	2.1	1.9	1.9	1.9	1.9	7.2	8.1	1.8	1.9	1.9	1.9
625250	0.5	3.2	6.0	5.7	6.3	5.5	1.5	2.5	2.3	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.1	9.0	6.4	1.9	1.9	1.9	1.9
625300	5.2	3.2	4.8	3.2	6.7	4.4	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	7.2	6.7	1.8	1.9	1.9
625350	5.2	4.3	5.5	3.1	2.4	6.1	4.1	2.4	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.9	7.8	6.7	1.0	1.9	1.9
625400	1.4	3.7	5.3	3.4	0.7	6.3	6.8	0.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	0.8	8.1	7.1	2.3	1.9
625450	1.9	3.9	4.0	2.4	2.0	4.4	7.1	2.8	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	7.7	8.2	3.3	1.9
625500	2.1	3.5	2.9	2.0	2.0	2.0	3.8	6.7	3.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	5.2	8.0	1.9	1.2	1.4
625550	2.2	2.3	2.3	2.0	2.0	2.0	4.4	6.8	5.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.3	4.1	4.2	3.9	2.6
625600	1.8	1.5	2.0	2.0	2.0	2.0	2.0	2.5	8.2	6.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	7.4	4.9	2.5
625650	0.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	6.9	6.9	0.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	3.5	4.7	3.6	2.2
625700	1.2	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.3	6.2	4.6	2.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	3.9	7.1	2.8
625750	3.0	2.2	2.0	2.0	2.0	2.0	2.0	2.0	1.5	5.9	6.8	0.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	5.8	6.2	0.6
625800	4.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.8	6.4	3.2	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.2	5.9	6.5	
625850	5.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	3.7	6.8	3.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	6.6	5.8	
625900	6.2	0.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	4.6	6.5	5.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	7.8	
625950	6.3	4.9	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.7	7.2	6.8	2.0	2.0	2.0	2.0	2.0	2.0	2.7	2.8	4.7	
626000	5.3	6.5	3.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	6.9	5.7	1.6	2.0	2.0	2.0	2.0	2.0	1.8	4.9	4.5	5.0
626050	6.9	2.0	1.6	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.1	7.9	5.4	2.0	2.0	1.9	2.2	3.5	3.8	6.0	15.0	14.8
626100	2.8	1.1	2.8	3.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.8	6.6	6.8	1.0	1.8	1.6	2.1	2.7	14.0	18.3	4.9	15.1
626150	2.8	4.6	3.5	0.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	3.1	5.5	4.2	2.7	1.2	11.4	18.9	9.2	11.2	17.5	7.7
626200	2.4	2.2	2.3	3.1	3.6	2.0	2.0	2.0	2.0	1.9	1.8	1.8	1.7	1.8	3.7	5.7	8.5	19.1	14.2	4.6	18.3	9.2	8.7	3.5
626250	2.0	0.9	2.6	5.3	2.6	2.0	2.0	1.9	1.8	1.8	1.7	1.6	3.3	5.8	7.1	14.0	19.2	2.5	17.2	13.1	7.6	2.4	6.1	3.5
626300	2.0	2.0	2.8	1.6	3.0	3.2	1.8	1.7	1.6	2.1	2.8	2.1	2.3	11.3	18.1	6.7	13.0	16.2	7.6	3.9	5.1	5.0	0.0	0.0
626350	2.0	1.9	1.8	1.7	4.6	3.3	1.6	1.6	1.9	3.1	1.9	8.4	16.7	9.7	10.1	18.0	8.0	5.8	4.9	5.6	0.8	0.0	0.0	0.0
626400	1.7	1.6	1.5	2.3	0.5	3.3	3.1	2.0	1.8	7.1	17.6	15.2	2.9	18.7	10.8	7.5	2.8	6.5	2.5	0.0	0.0	0.0	0.0	0.0
626450	1.4	1.4	1.4	1.4	0.3	2.5	3.9	4.9	16.3	18.3	4.4	15.8	14.9	7.6	2.9	5.6	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626500	1.4	1.5	1.9	2.8	3.8	3.0	10.3	20.3	9.8	11.2	17.3	7.7	4.8	5.0	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626550	1.5	1.8	3.5	3.0	6.8	17.9	14.4	4.7	18.2	8.7	6.5	3.9	6.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626600	1.5	2.4	5.5	17.2	18.4	1.8	17.3	12.5	7.7	2.4	6.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626650	2.6	13.3	19.3	7.0	13.8	15.9	7.6	3.6	5.2	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626700	19.0	11.1	8.5	18.0	7.9	5.5	5.0	5.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626750	2.4	18.2	10.3	7.2	3.0	6.4	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626800	14.3	7.6	2.7	5.7	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626850	4.5	5.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626900	5.8	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
626950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
627200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

92/104

Maximum Subgrade Slope: Post-Settlement (sheet 5 of 6)

(%)	NORTHING (ft)																								
	1353200	1353150	1353100	1353050	1353000	1352950	1352900	1352850	1352800	1352750	1352700	1352650	1352600	1352550	1352500	1352450	1352400	1352350	1352300	1352250	1352200	1352150	1352100	1352050
623600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
623800	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0
623850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
623900	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
623950	7.0	7.6	6.4	6.5	8.8	7.7	8.8	10.0	8.6	6.6	7.3	7.8	6.7	6.8	9.0	8.2	8.8	10.2	8.9	6.9	9.6	10.3	7.0	7.1
624000	11.1	10.7	11.0	10.6	8.4	9.0	7.6	6.6	10.0	9.7	11.5	10.5	11.1	10.7	8.5	7.7	8.8	6.6	9.7	7.3	6.3	6.8	10.8	10.7
624050	5.4	5.1	3.3	3.7	4.5	2.8	4.1	4.2	3.5	4.3	5.9	5.7	4.3	4.2	5.6	3.4	3.6	4.1	1.3	3.7	2.9	6.7	4.8	3.1
624100	1.7	1.9	2.7	2.7	1.7	2.8	1.9	1.6	3.8	5.7	1.5	1.4	2.6	2.9	1.7	1.7	2.9	1.0	4.6	3.0	1.4	1.8	4.2	3.7
624150	1.8	1.8	1.8	1.8	1.8	1.8	1.8	4.5	5.7	0.8	1.8	1.8	2.1	1.8	1.8	1.8	1.8	1.8	2.6	1.5	2.2	2.0	1.9	1.8
624200	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	7.6	4.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.9	2.3	2.4	2.0	2.0
624250	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	6.0	3.9	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.6	1.4	1.8	2.1	2.0	2.0
624300	2.0	2.0	2.0	2.0	1.9	1.9	1.9	3.6	6.7	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	2.2	2.7	2.0	2.0	2.0
624350	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	6.1	5.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.7	3.3	2.4	2.0	2.0	2.0
624400	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.9	6.0	2.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	3.2	2.7	2.0	2.0	
624450	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	7.7	4.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.0	3.2	2.6	2.0	2.0	
624500	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	4.0	5.7	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.4	2.1	2.2	2.0	2.0	2.0	
624550	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4.7	5.8	0.6	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.6	3.2	4.1	2.5	2.0	2.0
624600	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	7.7	5.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.6	3.9	3.6	2.0	2.0	
624650	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.6	6.0	3.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	2.9	2.4	2.0	1.9	1.9
624700	1.9	1.9	2.0	2.0	2.0	2.0	2.0	3.4	6.7	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4.1	4.7	2.0	2.1	2.0
624750	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5.1	5.9	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	2.0	4.7	3.2	2.0	2.0
624800	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.0	6.2	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	3.7	4.0	2.5	2.0	2.0
624850	2.0	2.0	2.1	2.0	2.0	2.1	3.6	3.1	7.7	3.8	1.7	1.6	1.9	1.7	1.5	1.9	1.7	1.7	1.9	3.3	6.4	4.5	2.6	1.8
624900	2.0	2.2	3.3	3.1	2.5	4.7	4.3	3.4	7.2	7.6	1.5	1.7	1.5	0.7	1.6	1.7	1.0	1.7	1.4	1.9	5.9	4.1	3.0	2.4
624950	1.8	3.5	4.0	3.0	3.4	4.0	1.3	1.4	7.6	6.5	3.4	0.8	1.8	1.5	1.5	1.8	1.6	1.6	1.8	1.9	3.9	3.6	2.8	2.6
625000	2.1	3.3	2.3	0.8	1.1	1.3	1.9	7.9	5.7	3.7	4.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	2.3	2.8	2.3	2.0	2.0
625050	0.9	0.9	1.9	1.9	1.9	1.9	1.9	4.2	7.2	7.9	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.6	0.9	2.4	2.5	2.0	2.0
625100	1.9	1.9	1.9	1.9	1.9	1.9	1.8	5.6	8.3	6.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.7	2.6	2.2	2.0	2.0
625150	1.9	1.9	1.9	1.9	1.9	1.9	2.8	5.0	5.7	2.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.4	1.5	2.0	2.0	2.0
625200	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.2	8.4	7.9	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	1.9	2.5	2.0	1.8	2.0
625250	1.9	1.9	1.9	1.9	1.9	1.9	1.8	7.3	8.4	1.1	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.6	1.4	2.7	2.4	1.9	1.7	1.8
625300	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	7.3	6.6	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.8	1.1	1.1	1.9	1.9	1.7
625350	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.3	9.4	4.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.0	2.5	2.4	1.9	1.9	
625400	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4.3	7.7	3.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	2.9	2.8	2.1	1.9	1.9	
625450	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.7	8.0	5.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.3	1.4	2.0	2.0	1.9	
625500	1.9	1.9	1.9	1.9	1.9	1.7	5.3	6.5	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	3.6	3.1	2.0	1.9	
625550	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.2	8.3	7.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	2.7	2.9	2.2	1.9	1.9	
625600	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4.3	9.7	7.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.7	3.8	2.3	1.9	1.9	
625650	1.9	1.9	1.9	1.9	1.9	1.9	2.3	7.2	5.5	3.4	2.5	1.8	2.0	1.8	1.8	1.8	1.8	1.8	1.7	3.7	3.2	1.8	1.8	1.8
625700	1.9	1.9	1.9	1.9	1.9	1.8	3.4	3.7	8.6	2.7	1.5	1.5	2.7	2.3	1.7	1.7	2.4	1.4	3.9	2.0	2.6	2.4	2.4	2.7
625750	1.9	1.9	1.9	1.9	1.8	3.7	6.9	4.8	0.7	6.5	3.0	2.8	1.0	2.7	2.7	0.4	1.4	1.8	3.2	3.1	4.1	2.1	1.1	0.8
625800	1.8	1.9	2.3	1.8	1.8	4.3	6.9	12.7	7.8	10.4	13.7	12.6	13.5	12.3	10.8	10.1	10.8	8.9	12.0	8.2	10.5	12.2	12.6	13.2
625850	2.0	2.0	3.5	3.9	4.6	14.9	15.1	4.5	2.1	1.6	1.6	3.0	1.5	1.4	4.0	2.9	3.0	5.9	1.2	1.1	1.1	1.0	1.0	0.9
625900	5.2	1.9	5.5	14.7	17.4	1.9	16.0	13.7	11.2	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	9.7	10.9
625950	8.3	13.5	20.0	8.3	12.2	16.6	7.6	5.8	2.6	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	0.9	1.5	2.4	1.6
626000	15.9	11.2	7.3	18.0	8.2	6.0	4.5	5.7	3.6	3.5	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.7	3.9	3.9	3.5	0.5	3.3
626050	2.4	18.2	11.4	7.7	2.6	6.4	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.9	3.4	0.5	3.2
626100	15.3	7.6	3.1	5.4	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.8	3.3	0.6	3.1	
626150	5.1	5.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.7	3.1	0.7	2.9	
626200	6.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.6	3.0	0.7	2.7	
626250	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.5	2.8	0.8	2.5	
626300	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.4	2.7	0.8	2.3	
626350	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.3	2.5	0.8	2.1	
626400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.2	2.4	0.8	1.9	
626450	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.2	2.2	0.7	1.7	
626500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.1	2.1	0.6	1.5	
626550	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.0	1.9	0.5	1.4	
626600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.9	1.8	0.5	1.2	
626650	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.7	1.7	0.5	1.0	
626700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.5	0.8	
626750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	0.5	0.7	
626800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	0.5	0.6	
626850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.9	0.5	0.5	
626900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.7	0.5	0.5	
626950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.5	0.5	
627000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	
627050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
627100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
627150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
627200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

EASTING (ft)

Maximum Subgrade Slope: Post-Settlement (sheet 6 of 6)

EASTING (ft)	NORTHING (ft)																			
	1352000	1351950	1351900	1351850	1351800	1351750	1351700	1351650	1351600	1351550	1351500	1351450	1351400	1351350	1351300	1351250	1351200	1351150	1351100	(%)
623800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
623850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
623700	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
623750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
623800	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
623850	1.0	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
623900	11.2	9.1	4.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
623950	9.6	14.4	7.5	4.0	6.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
624000	12.8	8.3	14.6	10.5	5.1	6.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
624050	5.6	16.9	17.6	10.4	11.8	5.2	5.5	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
624100	4.0	4.6	13.9	17.9	9.6	13.1	5.2	4.7	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
624150	1.8	3.2	3.8	13.3	18.0	8.2	14.4	5.2	4.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
624200	1.8	1.6	2.3	3.0	12.1	19.1	6.4	15.8	5.2	3.2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
624250	2.0	1.7	1.5	1.5	3.0	11.3	19.9	5.0	17.1	5.2	2.5	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
624300	2.0	1.9	1.7	1.4	1.5	2.8	11.1	20.7	3.7	18.4	5.1	3.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0	
624350	2.0	2.0	1.9	1.6	1.4	1.8	2.5	10.9	21.3	3.3	16.1	5.9	5.4	0.0	0.0	0.0	0.0	0.0	0.0	
624400	2.0	2.0	2.0	1.8	1.5	1.4	1.7	2.0	11.1	19.7	12.0	9.0	5.2	4.0	0.0	0.0	0.0	0.0	0.0	
624450	2.0	2.0	2.0	2.0	1.7	1.4	1.5	1.6	1.1	17.9	5.4	12.1	5.6	5.0	0.0	0.0	0.0	0.0	0.0	
624500	2.0	2.0	2.0	2.0	1.9	1.6	1.4	1.6	1.8	13.4	7.5	9.1	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624550	2.0	2.0	2.0	1.9	2.0	1.8	1.4	1.5	2.0	13.1	7.2	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624600	1.9	1.9	2.0	2.0	2.0	1.7	1.4	1.5	2.2	12.8	7.2	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624650	2.0	2.0	2.0	2.0	1.9	1.6	1.4	1.4	2.3	12.5	7.1	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624700	2.0	2.0	2.0	2.0	1.8	1.5	1.4	1.5	2.4	12.3	6.9	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624750	2.0	2.0	2.0	2.0	1.8	1.5	1.4	1.5	2.4	12.1	6.7	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624800	2.1	2.1	2.3	2.0	2.0	1.4	1.8	1.5	2.0	12.1	5.8	9.2	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624850	2.2	1.6	3.0	2.2	2.4	1.5	2.4	1.8	2.0	11.2	5.2	9.2	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624900	2.7	2.1	2.4	2.3	2.1	1.8	1.9	2.3	3.7	10.5	6.8	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
624950	2.1	2.6	2.0	2.5	1.6	1.8	1.5	3.1	4.4	11.3	6.9	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625000	2.0	2.0	2.0	2.0	1.7	1.3	1.4	1.4	1.7	10.3	3.3	9.4	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625050	2.0	2.0	2.0	2.0	1.8	1.5	1.4	1.5	2.7	10.7	4.9	9.4	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625100	2.0	2.0	2.0	2.0	1.8	1.5	1.4	1.5	3.6	10.2	6.2	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625150	2.0	2.0	2.0	2.0	1.9	1.6	1.4	1.5	3.7	10.3	6.3	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625200	2.0	2.0	2.0	2.0	2.0	1.7	1.4	1.5	4.0	10.6	6.8	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625250	2.0	2.0	2.0	2.0	2.0	1.7	1.4	1.8	3.8	11.2	6.8	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625300	1.8	2.0	2.0	2.0	2.0	1.8	1.5	1.9	3.7	11.6	7.0	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625350	1.7	1.8	2.0	2.0	2.0	1.8	1.6	2.2	3.4	12.3	7.0	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625400	1.9	1.7	1.8	2.0	2.0	1.8	1.6	1.5	1.4	11.9	5.3	9.2	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625450	1.9	1.9	1.7	1.8	2.0	2.0	1.7	1.5	2.2	12.1	6.4	9.1	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625500	1.9	1.9	1.9	1.7	1.8	2.0	1.7	1.5	2.3	12.1	6.7	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625550	1.9	1.9	1.9	1.9	1.7	1.8	1.8	1.5	2.4	12.4	7.1	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625600	1.9	1.9	1.9	1.9	1.9	1.7	1.7	1.6	2.3	12.6	7.2	8.9	6.9	5.0	0.0	0.0	0.0	0.0	0.0	
625650	1.8	1.8	1.8	1.8	1.8	1.8	1.5	1.5	2.1	13.1	7.4	9.2	6.8	5.0	0.0	0.0	0.0	0.0	0.0	
625700	2.6	1.6	1.6	1.6	1.5	1.8	1.8	1.7	1.5	17.8	5.1	12.2	5.4	5.0	0.0	0.0	0.0	0.0	0.0	
625750	0.7	1.7	1.5	0.9	1.3	1.4	1.5	3.2	13.3	18.9	12.9	8.7	5.1	3.8	0.0	0.0	0.0	0.0	0.0	
625800	13.5	12.6	13.0	13.2	13.4	14.0	14.3	15.8	14.6	6.9	14.6	5.5	5.6	0.0	0.0	0.0	0.0	0.0	0.0	
625850	0.9	2.1	1.6	0.7	0.7	0.6	1.0	5.2	14.3	12.6	5.1	4.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	
625900	10.9	10.9	10.9	10.9	10.9	10.9	10.9	11.0	10.1	4.7	5.4	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
625950	0.9	2.3	2.3	2.4	2.4	2.4	2.5	3.5	3.3	5.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626000	4.1	4.0	3.8	3.8	3.9	3.9	3.9	3.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626050	3.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626100	3.2	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626150	3.2	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626200	3.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626250	3.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626300	3.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626350	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626400	2.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626450	2.7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626500	2.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626550	2.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626600	1.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626650	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626700	1.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626750	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626800	1.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626850	0.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626900	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
626950	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
627000	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
627050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
627100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
627150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
627200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Written by: STEVEN DOLL Date: 02/04/30 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___

Client: OMAN Project: OHD FACILITY Project/Proposal No.: FY0460 Task No.: 03

MAXIMUM SUBGRADE SLOPE

$$M_{MAX} = \left(M_{N-S}^2 + M_{E-W}^2 \right)^{\frac{1}{2}} \quad \text{EQUATION 5}$$

$$M_{N-S} = \frac{(86.67\text{ft}) - (88.03\text{ft})}{2(50\text{ft})}$$ } CENTRAL DIFFERENCE APPROXIMATION IN NORTH-SOUTH DIRECTION

$$M_{N-S} = -0.0136$$

$$M_{E-W} = \frac{(88.05\text{ft}) - (86.66\text{ft})}{2(50\text{ft})}$$ } CENTRAL DIFFERENCE APPROXIMATION IN EAST-WEST DIRECTION

$$M_{E-W} = 0.0139$$

$$M_{MAX} = \left[(-0.0136)^2 + (0.139)^2 \right]^{\frac{1}{2}}$$

$$\boxed{M_{MAX} = 0.0195 = 1.95\ \%}$$

$M_{MAX} = 1.94\%$ ← FROM SPREADSHEET SOLN.

∴ O.K. ✓✓

ATTACHMENT 8

Major Principal Strain, Tensile: Post-Settlement

Major Principal Strain, Tensile: Post-Settlement (sheet 1 of 6)

(%)

EASTING (ft)	NORTHING (ft) 1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650	1357600	1357550	1357500	1357450	1357400	1357350	1357300	1357250	1357200	1357150	1357100	1357050	1357000	1356950	1356900	1356850
623600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.019	0.031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.121	0.072	0.039	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.241	0.213	0.223	0.415	0.108	0.000	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
623950	0.000	0.000	0.000	0.000	0.000	0.000	0.241	0.384	0.766	0.343	0.368	0.305	0.037	0.038	0.037	0.037	0.162	0.144	0.098	0.035	0.035	0.035	0.034	0.066
624000	0.000	0.000	0.000	0.000	0.000	0.121	0.219	0.766	0.913	1.447	0.354	0.095	0.078	0.075	0.073	0.070	0.089	0.093	0.073	0.071	0.070	0.063	0.059	0.070
624050	0.000	0.000	0.000	0.000	0.000	0.070	0.255	0.301	1.419	1.479	0.207	0.014	0.012	0.011	0.009	0.047	0.056	0.012	0.010	0.009	0.008	0.008	0.000	0.052
624100	0.000	0.000	0.000	0.000	0.031	0.052	0.420	0.478	0.356	0.189	0.000	0.002	0.002	0.002	0.001	0.001	0.008	0.004	0.003	0.008	0.005	0.003	0.001	0.001
624150	0.000	0.000	0.000	0.000	0.040	0.025	0.203	0.378	0.096	0.012	0.000	-0.001	0.002	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001
624200	0.000	0.000	0.000	0.000	0.002	0.001	0.004	0.057	0.085	0.008	0.000	0.002	-0.001	0.004	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
624250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.084	0.007	0.001	0.001	0.004	0.004	0.006	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
624300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.080	0.006	0.001	0.001	0.002	0.006	0.004	0.006	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
624350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.069	0.077	0.027	0.001	0.001	0.001	0.003	0.007	0.004	0.006	0.004	0.004	0.004	0.004	0.004	0.004	0.004
624400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.153	0.075	0.040	0.006	0.001	0.001	0.002	0.004	0.007	0.004	0.006	0.004	0.004	0.004	0.004	0.004	0.004
624450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.198	0.089	0.010	0.001	0.001	0.001	0.002	0.004	0.004	0.007	0.004	0.006	0.004	0.004	0.004	0.004	0.004
624500	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.104	0.130	0.026	0.005	0.002	0.002	0.003	0.005	0.004	0.004	0.007	0.004	0.006	0.004	0.004	0.004	0.004
624550	0.000	0.000	0.000	0.000	0.015	0.037	0.046	0.322	0.505	0.358	0.008	0.004	0.004	0.004	0.002	0.001	0.001	0.002	0.001	0.004	0.003	0.005	0.004	0.004
624600	0.000	0.000	0.000	0.000	0.064	0.037	0.269	0.376	0.201	0.555	0.008	0.004	0.005	0.008	0.001	0.020	0.005	0.018	0.006	0.002	0.029	0.042	0.008	0.002
624650	0.000	0.000	0.000	0.000	0.008	0.128	0.014	0.631	0.847	0.562	0.152	0.027	0.019	0.017	0.014	0.011	0.017	0.028	0.020	0.030	0.071	0.033	0.021	0.037
624700	0.000	0.000	0.000	0.000	0.000	0.061	0.052	0.291	0.473	0.365	0.613	0.017	0.024	0.020	0.026	0.000	0.002	0.104	0.005	0.034	0.073	0.018	0.015	0.058
624750	0.000	0.000	0.000	0.000	0.000	0.041	0.161	0.052	0.833	0.406	0.764	0.203	0.032	0.006	0.009	-0.003	0.003	0.041	0.079	0.053	0.051	0.006	0.004	0.009
624800	0.000	0.000	0.000	0.000	0.000	0.000	0.069	0.068	0.271	0.128	0.640	0.608	-0.002	0.002	0.000	0.000	0.004	0.007	0.008	0.008	0.008	0.008	0.008	0.008
624850	0.000	0.000	0.000	0.000	0.000	0.000	0.053	0.150	0.157	0.667	0.429	0.791	0.269	0.006	0.001	0.000	0.003	0.006	0.007	0.008	0.008	0.008	0.008	0.008
624900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.069	0.247	0.030	0.713	0.001	-0.002	0.002	0.000	0.002	0.003	0.005	0.005	0.007	0.008	0.008	0.008
624950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.068	0.139	0.241	0.671	0.407	0.767	0.273	0.002	0.001	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.008
625000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.076	0.219	0.188	0.780	0.941	0.004	0.001	0.002	0.002	0.001	0.001	0.002	0.003	0.004	0.005
625050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.081	0.130	0.311	0.722	0.645	1.473	0.890	0.180	0.000	0.005	0.007	0.001	0.001	0.001	0.001	0.001	0.002
625100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.096	0.310	0.606	0.571	0.602	0.576	0.640	0.461	0.101	0.000	0.008	0.001	-0.001	0.010
625150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065	0.201	0.132	0.123	0.669	0.330	0.540	0.198	0.560	0.541	0.602	0.347	0.106	0.007	0.009
625200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.123	0.233	0.180	0.384	0.244	0.485	0.339	0.453	0.360	0.174	0.473	0.502	0.651	0.415
625250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.123	0.102	0.070	0.077	0.013	0.318	0.235	0.488	0.365	0.306	0.504	0.232	0.610
625300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.053	0.050	0.113	0.052	0.078	0.014	0.320	0.224	0.491	0.341	0.522
625350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.066	0.056	0.114	0.052	0.060	0.013	0.322	0.214
625400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.069	0.053	0.115	0.053	0.082
625450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.050
625500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Major Principal Strain, Tensile: Post-Settlement (sheet 2 of 6)

EASTING (ft)	NORTHING (ft)																							
(%)	1358800	1358750	1358700	1358650	1358600	1358550	1358500	1358450	1358400	1358350	1358300	1358250	1358200	1358150	1358100	1358050	1358000	1357950	1357900	1357850	1357800	1357750	1357700	1357650
623600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623900	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001
623950	0.213	0.239	0.030	0.032	0.032	0.032	0.031	0.048	0.109	0.127	0.030	0.142	0.053	0.088	0.194	0.285	0.028	0.250	0.049	0.288	0.026	0.074	0.081	0.110
624000	0.097	0.087	0.074	0.086	0.081	0.064	0.059	0.131	0.072	0.072	0.069	0.080	0.050	0.114	0.048	0.141	0.080	0.058	0.107	0.133	0.107	0.088	0.089	0.074
624050	0.052	0.014	0.016	0.007	0.009	0.034	0.057	0.037	0.080	0.015	0.029	0.011	0.041	0.080	0.136	0.031	0.034	0.072	0.178	0.124	0.262	0.036	0.085	0.019
624100	0.008	0.021	0.016	0.009	0.007	0.014	0.040	0.045	0.007	0.013	0.017	0.004	0.005	0.027	0.052	0.048	0.064	0.004	0.204	0.299	0.181	0.004	0.001	0.011
624150	0.001	0.001	0.001	0.008	0.036	0.097	0.017	0.013	0.004	0.008	0.004	0.004	0.004	0.004	0.008	0.015	0.004	0.036	0.224	0.074	0.083	0.004	0.004	0.004
624200	0.002	0.002	0.002	0.004	0.009	0.113	0.031	0.036	0.009	0.006	0.006	0.006	0.006	0.006	0.007	0.007	0.008	0.042	0.237	0.083	0.011	0.007	0.007	0.007
624250	0.004	0.004	0.004	0.004	0.004	0.062	0.062	0.012	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.006	0.026	0.072	0.050	0.009	0.009	0.009
624300	0.004	0.004	0.004	0.004	0.050	0.113	0.118	0.061	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.020	0.153	0.056	0.216	0.009	0.009
624350	0.004	0.004	0.004	0.004	0.074	0.064	0.161	0.047	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.018	0.267	0.304	0.163	0.009	0.009	0.009
624400	0.004	0.004	0.004	0.008	0.040	0.009	0.042	0.004	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.007	0.191	0.069	0.026	0.009	0.009	0.009
624450	0.004	0.004	0.004	0.005	0.077	0.039	0.006	0.012	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.003	0.121	0.048	0.185	0.009	0.009	0.009
624500	0.004	0.004	0.004	0.005	0.017	0.067	0.039	0.015	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.007	0.143	0.259	0.182	0.009	0.009	0.009
624550	0.004	0.004	0.004	0.011	0.074	0.092	0.063	0.054	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.048	0.229	0.077	0.123	0.007	0.009	0.009
624600	0.009	0.005	0.004	0.005	0.141	0.037	0.130	0.056	0.007	0.009	0.007	0.008	0.009	0.007	0.008	0.009	0.008	0.052	0.272	0.105	0.035	0.005	0.009	0.008
624650	0.005	0.021	0.008	0.004	0.042	0.065	0.040	0.006	0.005	0.002	0.008	0.005	0.002	0.005	0.005	0.003	0.005	0.005	0.036	0.014	0.014	0.009	0.007	0.005
624700	0.023	0.001	0.002	0.006	0.005	0.034	0.035	0.024	0.001	0.004	0.005	0.002	0.004	0.005	0.003	0.004	0.005	0.004	0.024	0.034	0.012	0.012	0.009	0.001
624750	0.012	0.005	0.008	0.008	0.009	0.028	0.100	0.017	0.009	0.004	0.011	0.009	0.009	0.010	0.009	0.008	0.009	0.010	0.053	0.215	0.038	0.006	0.004	0.003
624800	0.008	0.008	0.008	0.008	0.014	0.091	0.045	0.001	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.020	0.252	0.198	0.145	0.013	0.005	0.034
624850	0.008	0.008	0.008	0.008	0.010	0.025	0.044	0.005	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.013	0.264	0.391	0.193	0.009	0.009	0.009
624900	0.008	0.008	0.008	0.008	0.000	0.130	0.122	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.176	0.220	0.074	0.009	0.009	0.009
624950	0.008	0.006	0.008	0.008	0.011	0.095	0.046	0.004	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.011	0.095	0.138	0.139	0.009	0.009	0.009
625000	0.008	0.007	0.008	0.007	0.008	0.017	0.087	0.002	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.004	0.169	0.313	0.121	0.009	0.009	0.009
625050	0.003	0.005	0.006	0.007	0.009	0.000	0.002	0.001	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.010	0.278	0.258	0.026	0.009	0.009	0.009
625100	0.002	0.002	0.003	0.004	0.004	0.009	0.038	0.003	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.005	0.165	0.100	0.021	0.009	0.009	0.009
625150	0.019	0.010	0.001	0.002	0.002	0.064	0.041	0.008	0.006	0.006	0.006	0.006	0.006	0.006	0.008	0.008	0.008	0.008	0.083	0.212	0.055	0.006	0.008	0.005
625200	0.029	-0.002	0.047	0.005	0.023	0.075	0.041	0.001	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.001	0.012	0.018	0.249	0.151	0.156	0.004	0.004
625250	0.501	0.615	0.274	0.011	0.056	0.038	0.056	0.001	0.009	0.004	0.006	0.033	0.004	0.025	0.080	0.025	0.010	0.091	0.272	0.307	0.147	0.005	0.006	0.003
625300	0.354	0.375	0.540	0.483	0.340	0.373	0.027	0.030	0.081	0.036	0.040	0.027	0.008	0.057	0.153	0.008	0.031	0.057	0.109	0.023	0.043	0.023	0.008	0.050
625350	0.494	0.343	0.465	0.080	0.243	0.221	0.086	0.103	0.084	0.076	0.123	0.073	0.068	0.167	0.061	0.091	0.063	0.122	0.038	0.121	0.091	0.083	0.081	0.112
625400	0.013	0.323	0.203	0.426	0.343	0.122	0.011	0.084	0.028	0.054	0.013	0.123	0.087	0.121	0.048	0.128	0.014	0.207	0.130	0.086	0.016	0.078	0.053	0.115
625450	0.118	0.080	0.084	0.022	0.150	0.023	0.000	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.114
625500	0.000	0.075	0.047	0.115	0.013	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.031
625550	0.000	0.000	0.000	0.000	0.007	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.059
625600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Major Principal Strain, Tensile: Post-Settlement (sheet 3 of 6)

(%)	NORTHING (ft)																							
	1355600	1355550	1355500	1355450	1355400	1355350	1355300	1355250	1355200	1355150	1355100	1355050	1355000	1354950	1354900	1354850	1354800	1354750	1354700	1354650	1354600	1354550	1354500	1354450
623600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623900	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002
623950	0.075	0.195	0.101	0.089	0.087	0.248	0.023	0.286	0.148	0.079	0.050	0.097	0.021	0.173	0.101	0.087	0.020	0.210	0.170	0.039	0.019	0.094	0.083	0.025
624000	0.061	0.058	0.046	0.050	0.073	0.117	0.156	0.091	0.241	0.062	0.076	0.072	0.062	0.071	0.045	0.075	0.054	0.184	0.068	0.046	0.188	0.100	0.100	0.086
624050	0.068	0.071	0.026	0.052	0.068	0.047	0.077	0.280	0.045	0.048	0.073	0.017	0.100	0.086	0.035	0.082	0.003	0.122	0.018	0.143	0.030	0.076	0.040	0.047
624100	0.011	0.004	0.004	0.007	0.029	0.031	0.040	0.022	0.112	0.005	0.001	0.009	0.014	0.004	0.016	0.040	0.004	0.009	0.040	0.009	0.004	0.004	0.018	0.023
624150	0.004	0.004	0.004	0.004	0.005	0.005	0.025	0.100	0.074	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.001	0.007	0.057	0.060	0.004	0.008	0.005
624200	0.007	0.007	0.007	0.007	0.007	0.007	0.044	0.007	0.201	0.007	0.007	0.007	0.007	0.007	0.008	0.006	0.006	0.014	0.020	0.091	0.063	0.008	0.008	0.008
624250	0.009	0.009	0.009	0.009	0.009	0.009	0.074	0.156	0.207	0.009	0.009	0.009	0.008	0.008	0.009	0.009	0.009	0.046	0.143	0.150	0.001	0.009	0.009	0.009
624300	0.009	0.009	0.009	0.009	0.009	0.009	0.184	0.138	0.090	0.009	0.009	0.009	0.009	0.008	0.009	0.009	0.009	0.050	0.030	0.058	0.048	0.009	0.009	0.009
624350	0.009	0.009	0.009	0.009	0.009	0.009	0.188	0.116	0.266	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.007	0.079	0.008	0.043	0.009	0.009	0.009
624400	0.009	0.009	0.009	0.009	0.009	0.009	0.083	0.179	0.265	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.053	0.152	0.222	0.005	0.009	0.009	0.009
624450	0.009	0.009	0.009	0.009	0.009	0.009	0.126	0.154	0.119	0.018	0.009	0.009	0.009	0.009	0.009	0.009	0.001	0.065	0.067	0.112	0.013	0.009	0.009	0.009
624500	0.009	0.009	0.009	0.009	0.009	0.009	0.132	0.075	0.058	0.021	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.018	0.068	0.025	0.016	0.009	0.009	0.009
624550	0.009	0.009	0.009	0.009	0.009	0.009	0.014	0.050	0.049	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.011	0.092	0.011	0.061	0.002	0.009	0.009
624600	0.009	0.009	0.009	0.009	0.009	0.009	0.029	0.036	0.207	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.005	0.199	0.157	0.051	0.008	0.009	0.009
624650	0.003	0.007	0.009	0.009	0.009	0.009	0.068	0.188	0.219	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.048	0.060	0.062	0.006	0.009	0.009	0.009
624700	0.003	0.012	0.001	0.007	0.002	0.008	0.189	0.167	0.086	0.006	0.010	0.010	0.009	0.009	0.009	0.009	0.009	0.016	0.065	0.114	0.045	0.009	0.009	0.009
624750	0.001	0.005	0.023	0.012	0.010	0.027	0.213	0.061	0.170	0.007	0.012	0.011	0.011	0.011	0.011	0.011	0.011	0.092	0.057	0.131	0.044	0.010	0.010	0.010
624800	0.004	0.008	0.013	0.019	0.025	0.018	0.092	0.033	0.141	0.026	0.009	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.058	0.180	0.248	0.012	0.012	0.012
624850	0.011	0.038	0.011	0.015	0.040	0.055	0.022	0.016	0.022	0.032	0.005	0.013	0.037	0.005	0.011	0.014	0.004	0.097	0.126	0.147	0.014	0.013	0.013	0.013
624900	0.009	0.009	0.009	0.009	0.009	0.049	0.018	0.017	0.003	0.004	0.013	0.032	0.032	0.008	0.008	0.011	0.011	0.020	0.100	0.074	0.020	0.013	0.013	0.013
624950	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.000	0.001	0.009	0.009	0.004	0.001	0.003	0.009	0.157	0.107	0.031	0.013	0.010	0.013	0.013
625000	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.004	0.026	0.012	0.014	0.240	0.015	0.082	0.006	0.007	0.013	0.009
625050	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.007	0.026	0.017	0.134	0.044	0.027	0.120	0.001	0.003	0.011	0.010	0.007
625100	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.010	0.026	0.103	0.045	0.032	0.130	0.002	0.004	0.002	0.007	0.004	0.002	0.004
625150	0.006	0.006	0.006	0.007	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.002	0.058	0.034	0.050	0.001	0.005	0.005	0.005	0.005	0.002	0.003	0.004	0.003
EASTING (ft)	0.003	0.003	0.003	0.005	0.006	0.006	0.009	0.009	0.007	0.005	0.127	0.132	0.061	0.038	0.018	0.005	0.005	0.006	0.004	0.003	0.002	0.002	0.000	0.004
625250	0.020	0.007	0.001	0.001	0.006	0.005	0.005	0.016	0.133	0.109	0.036	0.049	0.048	0.001	0.005	0.005	0.005	0.003	0.002	0.002	0.002	0.002	0.002	0.006
625300	0.031	0.052	0.004	0.056	0.036	0.017	0.005	0.016	0.167	0.061	0.009	0.023	0.008	0.005	0.005	0.004	0.003	0.002	0.002	0.002	0.002	0.010	0.022	0.041
625350	0.239	0.398	0.030	0.055	0.040	0.007	0.005	0.012	0.069	0.045	0.001	0.005	0.006	0.005	0.004	0.002	0.002	0.002	0.002	0.002	0.000	0.074	0.044	0.036
625400	0.635	0.226	1.043	0.597	0.040	0.073	0.039	0.054	0.011	0.008	0.005	0.005	0.004	0.003	0.002	0.002	0.002	0.002	0.011	0.037	0.012	0.050	0.071	0.003
625450	0.001	0.890	0.736	1.033	1.005	0.055	0.003	0.004	0.005	0.005	0.005	0.004	0.003	0.002	0.002	0.002	0.034	0.039	0.017	0.048	0.019	0.009	0.010	0.004
625500	0.022	0.534	0.924	0.397	0.861	0.327	0.001	0.003	0.005	0.005	0.003	0.002	0.002	0.002	0.015	0.016	0.007	0.033	0.014	0.060	0.060	0.003	0.003	0.003
625550	0.126	0.061	0.213	0.019	0.821	0.787	0.001	0.002	0.003	0.002	0.002	0.002	0.007	0.014	0.043	0.012	0.023	0.015	0.030	0.002	0.003	0.003	0.003	0.003
625600	0.072	0.185	0.185	0.799	0.810	0.721	0.271	0.013	0.004	0.002	0.002	0.001	0.057	0.040	0.010	0.066	0.009	0.002	0.003	0.003	0.003	0.003	0.003	0.003
625650	0.000	0.045	0.080	0.259	0.346	0.488	0.726	0.026	0.002	0.011	0.048	0.030	0.023	0.007	0.001	0.003	0.003	0.003	0.003	0.000	0.003	0.003	0.003	0.003
625700	0.000	0.054	0.173	0.073	0.702	0.684	1.016	0.323	0.009	0.015	0.026	0.051	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.000
625750	0.000	0.000	0.083	0.058	0.320	0.327	0.364	0.464	0.041	0.020	0.010	0.006	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.004
625800	0.000	0.000	0.039	0.159	0.013	0.503	0.507	0.883	0.496	0.000	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.031
625850	0.000	0.000	0.000	0.095	0.048	0.413	0.455	0.249	0.519	0.032	0.003	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.076
625900	0.000	0.000	0.000	0.026	0.147	0.021	0.608	0.982	0.664	0.483	0.021	0.003	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.000	0.058
625950	0.000	0.000	0.000	0.000	0.108	0.040	0.464	0.573	0.259	0.242	0.008	0.006	0.004	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.001	0.003	0.003	0.151
626000	0.000	0.000	0.000	0.000	0.016	0.137	0.068	0.466	1.011	0.810	0.375	0.076	0.012	0.004	0.004	0.003	0.003	0.003	0.010	0.003	0.014	0.019	0.012	0.001
626050	0.000	0.000	0.000	0.000	0.000	0.114	0.040	0.474	0.648	0.341	0.094	0.029	0.008	0.004	0.004	0.004	0.011	0.017	0.011	0.012	0.008	0.009	0.011	0.071
626100	0.000	0.000	0.000	0.000	0.000	0.000	0.120	0.107	0.300	0.616	0.882	0.513	0.023	0.004	0.004	0.010	0.006	0.013	0.002	0.007	0.008	0.010	0.010	0.013
626150	0.000	0.000	0.000	0.000	0.000	0.000	0.120	0.048	0.493	0.574	0.215	0.108	0.003	0.026	0.007	0.010	0.017	0.018	0.007	0.011	0.009	0.010	0.007	0.001
626200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.121	0.127	0.251	0.491	0.504	0.200	0.158	0.010	0.003	0.004	0.010	0.006	0.009	0.009	0.010	0.002	0.006
626250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.123	0.073	0.483	0.626	0.196	0.205	0.146	0.042	0.001	-0.004	0.004	0.007	0.008	0.009	0.011	0.001	0.004
626300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.145	0.132	0.563	0.931	0.877	0.036	0.013	0.000	0.002	0.005	0.007	0.009	0.008	0.003	0.004
626350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.123	0.108	0.449	0.634	0.087	0.485	0.082	0.020	0.008	0.000	0.003	0.005	0.008	0.005	0.004	0.004
626400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.153	0.022	0.508	0.908	0.846	0.005	0.002	0.000	0.001	0.003	0.007	0.000	0.003	0.001
626450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.123	0.136	0.409	0.568	0.230	0.757	0.230	-0.002	0.000	0.000	0.001	0.004	0.000	0.000	-0.001
626500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.083	0.116	0.077	0.345	0.736	0.744	0.006	0.001	0.000	0.000	0.000	0.000	-0.001	-0.001
626550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.147	0.342	0.699	0.278	0.815	0.224	0.010	0.000	0.000	-0.003	-0.001	-0.001	-0.001
626600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.021	0.063	0.205	0.070	0.747	0.662	0.002	0.004	0.002	-0.001	-0.001	-0.001	-0.001
626650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.063	0.158	0.248	0.712	0.528	0.669	0.352	0.005	0.002	0.000	-0.001	0.000	0.004
626700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.084	0.239	0.106	0.619	0.791	0.019	0.002	0.001	0.001	0.011	0.890
626750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.063	0.172	0.128	0.715	0.838	1.464	0.984	0.171	0.020	0.404	1.102	0.756
626800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.069	0.061	0.450	0.933	0.717	0.779	0.464	0.177	0.508	1.540	0.655
626850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.045	0.165	0.237	0.328	0.784	0.075	0.197	0.662	0.440	0.531	0.695	
626900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.123	0.214	0.136	0.383	0.270	0.069	0.357	0.542	0.087	0.081	
626950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.097	0.087	0.063	0.073	0.009	0.061	0.038	0.070	0.045	
627000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.041	0.068	0.014	0.071	0.021	0.000	
627050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
627100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
627150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
627200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Major Principal Strain, Tensile: Post-Settlement (sheet 4 of 6)

(%)

NORTHING (ft)

EASTING (ft)	1354400	1354350	1354300	1354250	1354200	1354150	1354100	1354050	1354000	1353950	1353900	1353850	1353800	1353750	1353700	1353650	1353600	1353550	1353500	1353450	1353400	1353350	1353300	1353250
623800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623900	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001
623950	0.017	0.152	0.142	0.199	0.191	0.016	0.023	0.076	0.064	0.127	0.133	0.014	0.014	0.015	0.026	0.062	0.068	0.013	0.102	0.014	0.042	0.098	0.153	0.009
624000	0.063	0.062	0.148	0.058	0.249	0.067	0.073	0.065	0.092	0.062	0.152	0.074	0.102	0.065	0.148	0.092	0.091	0.063	0.125	0.051	0.114	0.073	0.295	0.068
624050	0.092	0.087	0.131	0.246	0.066	0.033	0.066	0.066	0.113	0.150	0.024	0.106	0.125	0.067	0.053	0.088	0.025	0.071	0.029	0.057	0.068	0.294	0.027	0.064
624100	0.004	0.003	0.027	0.023	0.059	0.008	0.004	0.001	0.014	0.030	0.031	0.082	0.080	0.011	0.003	0.002	0.013	0.023	0.004	0.007	0.029	0.124	0.018	0.016
624150	0.005	0.005	0.003	0.100	0.112	0.000	0.005	0.005	0.006	0.001	0.030	0.072	0.041	0.048	0.028	0.006	0.006	0.006	0.006	0.006	0.006	0.101	0.102	0.004
624200	0.008	0.008	0.021	0.008	0.048	0.055	0.008	0.008	0.006	0.008	0.019	0.077	0.064	0.047	0.027	0.009	0.009	0.009	0.009	0.009	0.018	0.019	0.054	0.049
624250	0.009	0.009	0.020	0.054	0.056	0.050	0.009	0.009	0.009	0.009	0.008	0.035	0.005	0.102	0.041	0.007	0.009	0.009	0.009	0.009	0.011	0.094	0.056	0.043
624300	0.009	0.009	0.009	0.131	0.114	0.003	0.009	0.009	0.009	0.008	0.009	0.029	0.072	0.082	0.020	0.007	0.009	0.009	0.009	0.009	0.009	0.124	0.088	0.021
624350	0.009	0.009	0.011	0.047	0.064	0.016	0.009	0.009	0.009	0.009	0.009	0.068	0.008	0.022	0.011	0.009	0.009	0.009	0.009	0.009	0.007	0.129	0.006	0.003
624400	0.009	0.009	0.009	0.015	0.082	0.016	0.009	0.009	0.009	0.009	0.016	0.048	0.008	0.008	0.053	0.009	0.009	0.009	0.009	0.009	0.007	0.026	0.049	0.014
624450	0.009	0.009	0.041	0.077	0.061	0.034	0.009	0.009	0.009	0.009	0.011	0.050	0.017	0.100	0.044	0.009	0.009	0.009	0.009	0.009	0.026	0.081	0.053	0.043
624500	0.009	0.009	0.048	0.045	0.016	0.032	0.009	0.009	0.009	0.009	0.008	0.020	0.024	0.040	0.010	0.009	0.009	0.009	0.009	0.009	0.027	0.080	0.053	0.039
624550	0.009	0.009	0.006	0.127	0.112	0.005	0.009	0.009	0.009	0.009	0.009	0.058	0.007	0.025	0.015	0.009	0.009	0.009	0.009	0.009	0.009	0.120	0.089	0.001
624600	0.009	0.009	0.018	0.020	0.053	0.046	0.009	0.009	0.009	0.009	0.009	0.105	0.092	0.025	0.022	0.009	0.009	0.009	0.009	0.009	0.007	0.062	0.008	0.009
624650	0.009	0.009	0.012	0.075	0.048	0.041	0.009	0.009	0.009	0.009	0.008	0.026	0.056	0.091	0.005	0.009	0.009	0.009	0.009	0.009	0.005	0.100	0.081	0.002
624700	0.009	0.009	0.009	0.126	0.137	0.013	0.009	0.009	0.009	0.009	0.002	0.038	0.028	0.040	0.004	0.009	0.009	0.009	0.009	0.009	0.008	0.137	0.091	0.022
624750	0.010	0.009	0.013	0.061	0.045	0.008	0.009	0.009	0.009	0.009	0.009	0.012	0.009	0.012	0.013	0.009	0.009	0.009	0.009	0.009	0.007	0.135	0.004	0.008
624800	0.011	0.011	0.007	0.055	0.055	0.010	0.010	0.011	0.010	0.010	0.010	0.051	0.128	0.157	0.010	0.009	0.009	0.009	0.009	0.009	0.008	0.043	0.060	0.011
624850	0.013	0.013	0.029	0.059	0.060	0.033	0.011	0.013	0.012	0.012	0.012	0.091	0.113	0.102	0.005	0.011	0.011	0.011	0.011	0.011	0.037	0.064	0.079	0.049
624900	0.013	0.013	0.028	0.080	0.034	0.033	0.013	0.013	0.013	0.013	0.011	0.015	0.024	0.025	0.011	0.013	0.013	0.013	0.013	0.013	0.042	0.073	0.033	0.064
624950	0.013	0.012	0.010	0.110	0.045	0.025	0.013	0.013	0.013	0.013	0.009	0.066	0.071	0.117	0.010	0.013	0.013	0.013	0.013	0.012	0.012	0.137	0.142	0.033
625000	0.011	0.010	0.006	0.148	0.042	0.053	0.014	0.013	0.013	0.013	0.008	0.118	0.064	0.080	0.010	0.013	0.013	0.013	0.008	0.014	0.101	0.022	0.043	0.013
625050	0.010	0.008	0.008	0.055	0.043	0.070	0.013	0.013	0.013	0.013	0.012	0.029	0.045	0.105	0.038	0.056	0.052	0.066	0.050	0.036	0.141	0.011	0.004	0.001
625100	0.006	0.005	0.007	0.152	0.178	0.017	0.010	0.012	0.013	0.010	0.004	0.022	0.104	0.086	0.071	0.057	0.020	0.154	0.043	0.064	0.045	0.006	0.010	0.008
625150	0.000	0.003	0.014	0.073	0.049	0.015	0.009	0.008	0.005	0.001	0.002	0.050	0.073	0.002	0.043	0.049	0.034	0.255	0.225	0.172	0.081	0.006	0.006	0.008
625200	0.000	0.010	0.001	0.044	0.031	0.118	0.003	0.002	0.005	0.009	0.015	0.005	0.004	0.001	0.003	0.003	0.003	0.003	0.217	0.292	0.170	0.006	0.006	0.006
625250	0.010	0.015	0.174	0.127	0.201	0.119	0.016	0.004	0.003	0.005	0.006	0.005	0.004	0.003	0.003	0.003	0.003	0.003	0.184	0.209	0.067	0.000	0.006	0.006
625300	0.073	0.026	0.023	0.089	0.089	0.034	0.047	0.001	0.006	0.005	0.006	0.005	0.005	0.004	0.003	0.003	0.003	0.003	0.007	0.016	0.139	0.003	0.006	0.006
625350	0.113	0.030	0.045	0.006	0.065	0.045	0.006	0.013	0.006	0.006	0.005	0.005	0.005	0.005	0.004	0.003	0.003	0.003	0.034	0.163	0.180	0.196	0.004	0.006
625400	0.011	0.010	0.019	0.021	0.014	0.153	0.103	0.013	0.003	0.006	0.005	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.006	0.234	0.163	0.057	0.009	0.009
625450	0.004	0.014	0.004	0.002	0.006	0.065	0.104	0.061	0.022	0.006	0.005	0.005	0.006	0.006	0.005	0.004	0.003	0.003	0.003	0.000	0.176	0.177	0.047	0.009
625500	0.005	0.001	0.005	0.008	0.006	0.049	0.008	0.068	0.062	0.006	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.003	0.003	0.129	0.278	0.080	0.052	0.012
625550	0.005	0.010	0.001	0.008	0.005	0.008	0.008	0.140	0.018	0.141	0.005	0.009	0.005	0.005	0.005	0.005	0.004	0.004	0.003	0.072	0.064	0.022	0.008	0.008
625600	0.000	0.003	0.003	0.005	0.006	0.008	0.050	0.119	0.225	0.056	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.003	0.000	0.013	0.145	0.133	0.003
625650	0.000	0.006	0.005	0.005	0.005	0.008	0.008	0.000	0.008	0.145	0.058	0.009	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.003	0.044	0.045	0.048	0.002
625700	0.010	0.011	0.006	0.005	0.005	0.006	0.006	0.001	0.131	0.048	0.049	0.031	0.006	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.020	0.043	0.108	0.033
625750	0.024	0.011	0.006	0.005	0.006	0.005	0.006	0.001	0.006	0.150	0.124	0.019	0.001	0.005	0.005	0.005	0.005	0.005	0.006	0.004	0.002	0.112	0.176	0.166
625800	0.035	0.003	0.006	0.005	0.006	0.005	0.006	0.006	0.006	0.058	0.067	0.053	0.007	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.001	0.113	0.116	0.118
625850	0.022	0.006	0.005	0.005	0.006	0.006	0.006	0.006	0.004	0.032	0.022	0.078	0.043	0.002	0.005	0.005	0.006	0.005	0.006	0.005	0.004	0.001	0.125	0.142
625900	0.102	0.082	0.003	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.070	0.139	0.028	0.163	0.006	0.005	0.005	0.005	0.006	0.005	0.005	0.002	0.167	0.176
625950	0.082	0.012	0.012	0.005	0.005	0.006	0.006	0.006	0.006	0.005	0.067	0.092	0.268	0.181	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.003	0.040	
626000	0.078	0.124	0.043	0.002	0.005	0.006	0.006	0.006	0.005	0.005	0.806	0.014	0.106	0.068	0.094	0.001	0.005	0.005	0.005	0.005	0.004	0.043	0.017	0.024
626050	0.141	0.092	0.005	0.028	0.003	0.006	0.006	0.006	0.006	0.006	0.005	0.002	0.152	0.139	0.023	0.005	0.005	0.005	0.001	0.018	0.014	0.451	1.026	0.463
626100	0.018	0.020	0.062	0.042	0.002	0.006	0.005	0.006	0.005	0.005	0.005	0.003	0.001	0.092	0.120	0.029	0.008	0.004	-0.003	0.147	1.084	0.550	1.608	0.655
626150	0.029	0.036	0.060	0.027	0.026	0.006	0.006	0.006	0.006	0.005	0.005	0.006	0.006	0.125	0.037	0.026	0.015	0.011	0.711	0.713	1.272	0.560	0.638	0.745
626200	0.001	0.012	0.015	0.050	0.047	0.006	0.006	0.005	0.006	0.006	0.005	0.004	0.003	0.009	0.064	0.053	0.511	1.108	0.829	1.030	0.513	0.590	0.067	0.100
626250	0.006	0.003	0.032	0.056	0.033	0.018	0.006	0.006	0.004	0.004	0.004	0.004	0.018	0.103	0.541	1.074	0.722	1.543	0.683	0.612	0.279	0.253	0.119	0.051
626300	0.004	0.004	0.012	0.006	0.055	0.024	0.004	0.004	0.004	0.002	0.003	0.009	0.074	1.002	0.449	1.418	0.662	0.653	0.604	0.232	0.003	0.124	0.000	0.000
626350	0.004	0.002	0.000	0.009	0.025	0.068	0.001	0.004	0.001	0.002	0.006	0.409	0.841	1.956	0.685	0.818	0.748	0.094	0.069	0.149	0.003	0.000	0.000	0.000
626400	0.000	0.000	-0.001	0.008	0.009	0.082	0.022	0.001	-0.002	0.438	1.116	0.625	1.120	0.681	0.631	0.121	0.151	0.173	0.031	0.000	0.000	0.000	0.000	0.000
626450	-0.001	-0.001	-0.001	-0.001	0.004	0.015	0.063	0.218	1.207	0.667	1.545	0.696	0.639	0.450	0.265	0.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626500	-0.001	-0.001	0.001	0.011	0.019	0.022	0.872	0.788	1.435	0.571	0.644	0.737	0.167	0.019	0.132	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626550	-0.001	0.000	0.018	0.000	0.524	0.967	0.885	1.030	0.597	0.710	0.049	0.089	0.162	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626600	-0.001	0.011	0.314	1.240	0.870	1.503	0.657	0.811	0.236	0.242	0.140	0.053	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626650	0.054	0.921	0.594	1.839	0.859	0.883	0.568	0.251	0.005	0.122	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626700	0.856	1.105	0.772	0.838	0.763	0.112	0.050	0.145	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626750	1.240	0.629	0.650	0.094	0.130	0.174	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626800	0.623	0.388	0.275	0.080	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626850	0.192	0.010	0.129	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626900	0.158	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Major Principal Strain, Tensile: Post-Settlement (sheet 5 of 6)

EASTING (ft) \ NORTHING (ft)	1353200	1353150	1353100	1353050	1353000	1352950	1352900	1352850	1352800	1352750	1352700	1352650	1352600	1352550	1352500	1352450	1352400	1352350	1352300	1352250	1352200	1352150	1352100	1352050
623600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
623900	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000
623950	0.043	0.028	0.062	0.008	0.108	0.039	0.041	0.030	0.132	0.007	0.035	0.027	0.054	0.006	0.092	0.025	0.021	0.030	0.112	0.005	0.093	0.011	0.104	0.003
624000	0.101	0.060	0.065	0.054	0.111	0.076	0.092	0.041	0.159	0.052	0.142	0.089	0.078	0.056	0.122	0.048	0.084	0.052	0.164	0.051	0.034	0.115	0.224	0.059
624050	0.044	0.081	0.024	0.108	0.084	0.033	0.037	0.149	0.078	0.123	0.060	0.068	0.027	0.117	0.061	0.030	0.056	0.173	0.056	0.026	0.018	0.194	0.069	0.140
624100	0.004	0.001	0.008	0.018	0.001	0.019	0.006	0.053	0.214	0.068	0.012	0.000	0.011	0.020	0.005	0.001	0.021	0.045	0.050	0.028	0.006	0.082	0.003	0.013
624150	0.007	0.007	0.008	0.006	0.007	0.007	0.007	0.135	0.244	0.158	0.007	0.007	0.008	0.007	0.007	0.007	0.007	0.003	0.015	0.002	0.007	0.013	0.007	0.007
624200	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.166	0.086	0.020	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.005	0.004	0.004	0.008	0.007
624250	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.038	0.071	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.007	0.003	0.019	0.007	0.008	0.008
624300	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.089	0.130	0.231	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.006	0.005	0.017	0.016	0.008	0.006
624350	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.102	0.164	0.167	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.012	0.017	0.008	0.008
624400	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.091	0.023	0.041	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.008	0.017	0.009	0.008	0.008
624450	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.040	0.034	0.144	0.010	0.009	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.002	0.003	0.001	0.008	0.008
624500	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.041	0.047	0.123	0.015	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.010	0.031	0.016	0.008	0.008
624550	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.141	0.246	0.178	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.003	0.005	0.017	0.038	0.008	0.008
624600	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.161	0.119	0.039	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.007	0.017	0.017	0.022	0.008	0.008
624650	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.013	0.041	0.084	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.014	0.038	0.063	0.008	0.008	0.007
624700	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.056	0.107	0.216	0.004	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.019	0.013	0.027	0.004	0.004
624750	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.058	0.096	0.141	0.007	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.007	0.044	0.027	0.010	0.004	0.004
624800	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.053	0.059	0.030	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.012	0.038	0.062	0.059	0.005	0.004
624850	0.010	0.010	0.011	0.009	0.009	0.011	0.042	0.044	0.012	0.159	0.007	0.008	0.007	0.007	0.008	0.008	0.007	0.008	0.007	0.047	0.012	0.022	0.004	0.027
624900	0.005	0.013	0.034	0.018	0.007	0.072	0.056	0.051	0.077	0.073	0.056	0.006	0.003	0.002	0.005	0.004	0.001	0.004	0.003	0.016	0.010	0.016	0.011	0.019
624950	0.007	0.037	0.037	0.020	0.037	0.061	0.008	0.009	0.228	0.051	0.035	0.010	0.004	0.004	0.009	0.004	0.005	0.009	0.005	0.008	0.036	0.028	0.021	0.009
625000	0.019	0.029	0.019	0.005	0.008	0.010	0.003	0.342	0.460	0.198	0.006	0.009	0.009	0.008	0.009	0.009	0.008	0.009	0.011	0.017	0.014	0.002	0.006	0.006
625050	0.004	0.009	0.008	0.008	0.006	0.006	0.008	0.183	0.182	0.131	0.002	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.004	0.002	0.005	0.008	0.004	0.004
625100	0.006	0.006	0.006	0.006	0.006	0.006	0.003	0.076	0.186	0.156	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.003	0.008	0.010	0.007	0.004	0.004
625150	0.006	0.006	0.006	0.006	0.006	0.006	0.037	0.108	0.105	0.261	0.001	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.011	0.008	0.004	0.008	0.005	0.004
625200	0.006	0.006	0.006	0.006	0.006	0.006	0.015	0.081	0.470	0.303	0.011	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.004	0.005	0.010	0.007	0.005	0.006
625250	0.006	0.006	0.006	0.006	0.006	0.006	0.007	0.268	0.591	0.196	0.000	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.011	0.013	0.015	0.011	0.008	0.004	0.005
625300	0.006	0.006	0.006	0.006	0.006	0.006	0.003	0.221	0.295	0.164	0.010	0.009	0.009	0.009	0.009	0.009	0.009	0.002	0.003	0.006	0.002	0.006	0.006	0.004
625350	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.055	0.168	0.065	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.004	0.016	0.015	0.004	0.006	0.006
625400	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.067	0.104	0.100	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.011	0.017	0.017	0.010	0.006	0.004
625450	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.040	0.207	0.189	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.001	0.012	0.003	0.006	0.006	0.004
625500	0.001	0.006	0.006	0.006	0.006	0.006	0.006	0.123	0.275	0.221	0.000	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.000	0.031	0.039	0.022	0.006	0.004
625550	0.007	0.006	0.006	0.006	0.006	0.007	0.000	0.107	0.188	0.087	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.003	0.042	0.011	0.008	0.004	0.004
625600	0.006	0.006	0.006	0.007	0.006	0.006	0.006	0.044	0.137	0.099	0.005	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.002	0.021	0.045	0.010	0.004	0.004
625650	0.006	0.006	0.006	0.006	0.006	0.006	0.012	0.067	0.365	0.124	0.034	0.007	0.006	0.009	0.007	0.007	0.007	0.007	0.003	0.040	0.028	0.004	0.003	0.003
625700	0.006	0.006	0.007	0.008	0.007	0.007	0.024	0.029	0.126	0.029	0.025	0.009	0.003	0.021	0.014	0.005	0.001	0.022	0.036	0.029	0.002	0.009	0.004	0.007
625750	0.006	0.006	0.006	0.006	0.006	0.032	0.083	0.064	0.108	0.106	0.064	0.049	0.058	0.008	0.037	0.014	0.003	0.064	0.023	0.046	0.038	0.018	0.005	0.005
625800	0.003	0.006	0.001	0.013	0.001	0.070	0.588	0.470	0.111	0.069	0.091	0.071	0.062	0.069	0.091	0.057	0.061	0.104	0.103	0.080	0.064	0.072	0.076	0.078
625850	0.007	0.004	0.011	0.005	0.085	0.758	0.373	0.893	0.316	0.048	0.182	0.173	0.044	0.267	0.118	0.038	0.236	0.417	0.048	0.047	0.047	0.048	0.048	0.048
625900	0.010	0.003	0.274	1.184	0.518	1.361	0.676	0.221	0.003	0.002	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.012	0.021
625950	0.191	0.897	0.640	1.496	0.669	0.648	0.532	0.186	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.038	0.020	0.004	0.004
626000	0.497	0.924	0.826	0.569	0.737	0.071	0.086	0.084	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.012	0.003	0.004	0.019
626050	1.129	0.667	0.617	0.155	0.176	0.162	0.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.001	0.003
626100	0.058	0.503	0.288	0.041	0.101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.006	0.000	0.003
626150	0.141	0.030	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.005	0.000	0.003
626200	0.166	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.005	0.000	0.002
626250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004	0.000	0.002
626300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004	0.000	0.001
626350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004	0.000	0.001
626400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.000	0.001
626450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.000	0.001
626500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.000	0.001
626550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.000	0.001
626600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.000	0.001
626650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.001	0.000	0.001
626700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000
626750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000
626800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000
626850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000
626900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
626950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
627000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Major Principal Strain, Tensile: Post-Settlement (sheet 6 of 6)

(%)	NORTHING (ft)																		
EASTING (ft)	1352000	1351950	1351900	1351850	1351800	1351750	1351700	1351650	1351600	1351550	1351500	1351450	1351400	1351350	1351300	1351250	1351200	1351150	1351100
623800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623800	0.004	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623850	0.002	0.061	0.080	0.123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623900	0.029	0.122	0.142	0.224	0.123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623950	0.323	0.491	0.036	0.069	0.184	0.109	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624000	0.301	0.318	0.046	0.380	0.203	0.089	0.063	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624050	0.687	0.982	0.606	0.361	0.449	0.338	0.035	0.056	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624100	-0.002	0.441	0.511	0.518	0.317	0.467	0.455	0.009	0.029	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624150	0.017	0.024	0.453	0.326	0.563	0.471	0.578	0.546	0.037	0.001	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624200	0.008	0.022	0.000	0.371	0.221	0.877	0.556	0.654	0.613	0.045	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624250	0.008	0.004	0.002	0.018	0.294	0.085	0.752	0.856	0.739	0.667	0.034	0.042	0.026	0.000	0.000	0.000	0.000	0.000	0.000
624300	0.008	0.005	0.003	0.001	0.015	0.282	0.233	0.813	0.731	0.831	0.703	0.027	0.036	0.000	0.000	0.000	0.000	0.000	0.000
624350	0.008	0.007	0.005	0.002	0.000	0.011	0.289	0.386	0.687	0.800	0.656	0.373	0.128	0.081	0.000	0.000	0.000	0.000	0.000
624400	0.008	0.008	0.007	0.004	0.002	0.002	0.008	0.272	0.487	0.705	0.211	0.291	0.100	0.041	0.000	0.000	0.000	0.000	0.000
624450	0.008	0.008	0.008	0.008	0.004	0.001	0.000	0.001	0.330	0.801	0.632	0.243	0.011	0.000	0.000	0.000	0.000	0.000	0.000
624500	0.008	0.008	0.008	0.008	0.006	0.003	0.000	0.000	0.000	0.346	0.135	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624550	0.008	0.008	0.008	0.008	0.005	0.001	0.001	0.001	0.000	0.093	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624600	0.008	0.007	0.005	0.003	0.004	0.001	0.001	0.001	0.000	0.061	0.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624650	0.004	0.004	0.004	0.004	0.003	0.001	0.001	0.001	0.001	0.049	0.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624700	0.004	0.004	0.004	0.004	0.003	0.001	0.001	0.001	0.001	0.048	0.067	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624750	0.004	0.004	0.004	0.004	0.002	0.001	0.001	0.001	0.002	0.085	0.155	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624800	0.003	0.005	0.006	0.016	-0.001	0.007	0.000	0.008	0.000	0.087	0.118	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624850	0.001	0.026	0.005	0.022	0.000	0.016	0.001	0.018	0.006	0.078	0.251	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624900	0.008	0.016	0.010	0.014	0.003	0.002	0.002	0.004	0.034	0.081	0.077	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624950	0.023	0.009	0.023	0.009	0.012	0.004	0.007	0.006	0.001	0.084	0.458	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625000	0.007	0.006	0.005	0.006	0.001	0.001	0.002	0.006	0.077	0.163	0.199	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625050	0.004	0.004	0.004	0.004	0.002	0.001	0.001	0.001	0.015	0.078	0.203	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625100	0.004	0.004	0.004	0.004	0.002	0.001	0.001	0.001	0.026	0.101	0.077	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625150	0.004	0.004	0.004	0.004	0.003	0.001	0.001	0.001	0.002	0.077	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625200	0.004	0.004	0.004	0.004	0.004	0.002	0.001	0.001	0.011	0.082	0.078	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625250	0.005	0.004	0.004	0.004	0.004	0.002	0.001	0.003	0.001	0.082	0.087	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625300	0.005	0.006	0.004	0.004	0.004	0.002	0.001	0.003	0.004	0.085	0.078	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625350	0.004	0.005	0.006	0.004	0.004	0.002	0.001	0.004	0.002	0.087	0.257	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625400	0.006	0.004	0.005	0.006	0.004	0.003	0.002	0.001	0.019	0.101	0.167	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625450	0.004	0.006	0.004	0.005	0.006	0.004	0.002	0.001	0.007	0.084	0.090	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625500	0.004	0.004	0.006	0.004	0.005	0.006	0.002	0.001	0.003	0.090	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625550	0.004	0.004	0.004	0.005	0.004	0.005	0.004	0.001	0.003	0.085	0.081	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625600	0.004	0.004	0.004	0.004	0.005	0.004	0.004	0.002	0.001	0.089	0.081	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625650	0.003	0.003	0.003	0.003	0.003	0.005	0.002	0.002	0.001	0.094	0.178	0.139	0.015	0.000	0.000	0.000	0.000	0.000	0.000
625700	0.002	0.004	0.002	0.002	0.001	0.003	0.002	0.000	-0.002	0.672	1.165	0.372	0.056	0.048	0.000	0.000	0.000	0.000	0.000
625750	0.007	0.030	0.012	0.016	0.005	0.007	0.007	0.065	0.957	0.784	0.587	0.593	0.106	0.071	0.000	0.000	0.000	0.000	0.000
625800	0.084	0.072	0.076	0.078	0.081	0.063	0.085	0.153	0.838	0.900	0.810	0.132	0.135	0.000	0.000	0.000	0.000	0.000	0.000
625850	0.156	0.074	0.120	0.050	0.050	0.051	0.187	0.561	0.298	0.550	0.030	0.038	0.017	0.000	0.000	0.000	0.000	0.000	0.000
625900	0.001	0.001	0.001	0.001	0.002	0.001	0.087	0.380	0.508	0.190	0.082	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625950	0.027	0.042	0.000	0.000	0.000	0.000	0.011	0.008	0.047	0.118	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626000	0.009	0.000	0.000	0.000	0.000	0.000	0.021	0.050	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626100	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626200	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626350	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626400	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626450	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626600	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626650	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626700	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626750	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626850	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626900	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
627200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Written by: STEVEN TAPP Date: 02/04/26 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___

Client: OMNI Project: OHD FACILITY Project/Proposal No.: FR0900 Task No.: 03

MAJOR PRINCIPAL STRAIN

$$\epsilon_{P1} = \frac{\epsilon_{N-S} + \epsilon_{E-W}}{2} + \left[\left(\frac{\epsilon_{N-S} - \epsilon_{E-W}}{2}\right)^2 + \left(\frac{\gamma_{NS-EW}}{2}\right)^2\right]^{\frac{1}{2}}$$

FIRST CALCULATE ELEMENT LENGTHS (PRE- + POST-SETTLE) THAT WILL BE NEEDED USING CENTRAL DIFFERENCE APPROX.

$$L_{N-S\,(PRE-SETTLE)} = \frac{1}{2}\left\{\left[(50\,ft)^2 + (88.370\,ft - 88.96\,ft)^2\right]^{\frac{1}{2}} + \left[(50\,ft)^2 + (88.960\,ft - 89.624\,ft)^2\right]^{\frac{1}{2}}\right\}$$

$L_{N-S\,(PRE-SETTLE)} = 50.00436$ ft

$$L_{N-S\,(POST-SETTLE)} = \frac{1}{2}\left\{\left[(50\,ft)^2 + (86.672\,ft - 87.350\,ft)^2\right]^{\frac{1}{2}} + \left[(50\,ft)^2 + (87.350\,ft - 88.024\,ft)^2\right]^{\frac{1}{2}}\right\}$$

$L_{N-S\,(POST-SETTLE)} = 50.00460$ ft

$$L_{E-W\,(PRE-SETTLE)} = \frac{1}{2}\left\{\left[(50\,ft)^2 + (89.710\,ft - 88.960\,ft)^2\right]^{\frac{1}{2}} + \left[(50\,ft)^2 + (89.960\,ft - 88.210\,ft)^2\right]^{\frac{1}{2}}\right\}$$

$L_{E-W\,(PRE-SETTLE)} = 50.00562$ ft

$$L_{E-W\,(POST-SETTLE)} = \frac{1}{2}\left\{\left[(50\,ft)^2 + (88.045\,ft - 87.350\,ft)^2\right]^{\frac{1}{2}} + \left[(50\,ft)^2 + (87.350\,ft - 86.655\,ft)^2\right]^{\frac{1}{2}}\right\}$$

$L_{E-W\,(POST-SETTLE)} = 50.00483$ ft

$$L_{DIAG.\,(PRE-SETTLE)} = \frac{1}{2}\left\{\left[\left[(50')^2 + (50')^2\right]^{\frac{1}{2}} + (88.960' - 88.870')^2\right]^{\frac{1}{2}} + \left[(50')^2 + (50')^2 + (89.050' - 88.960')^2\right]^{\frac{1}{2}}\right\}$$

(CANCELL)

$L_{DIAG.\,(PRE-SETTLE)} = 70.71074$ ft

$$L_{DIAG.\,(POST-SETTLE)} = \frac{1}{2}\left\{\left[(50')^2 + (50')^2 + (87.350' - 87.373')^2\right]^{\frac{1}{2}} + \left[(50')^2 + (50')^2 + (87.376' - 87.350')^2\right]^{\frac{1}{2}}\right\}$$

$L_{DIAG.\,(POST-SETTLE)} = 70.71068$ ft

Written by: STEVEN DRAP Date: 02/04/30 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___

Client: OMNI Project: OHIO FACILITY Project/Proposal No.: FW0400 Task No.: 03

SOLVE FOR NORMAL STRAINS

$$\epsilon_{N\text{-}S} = \left[L_{N\text{-}S(\text{POST-SETTLE})} - L_{N\text{-}S(\text{PRE-SETTLE})}\right] / L_{N\text{-}S(\text{PRE-SETTLE})}$$

$$\epsilon_{N\text{-}S} = \left[(50.00460') - (50.00436')\right] / (50.00436')$$

$$\epsilon_{N\text{-}S} = 4.80 \times 10^{-6}$$

$$\epsilon_{E\text{-}W} = \left[L_{E\text{-}W(\text{POST-SETTLE})} - L_{E\text{-}W(\text{PRE-SETTLE})}\right] / L_{E\text{-}W(\text{PRE-SETTLE})}$$

$$\epsilon_{E\text{-}W} = \left[(50.00483\,ft) - (50.00562\,ft)\right] / (50.00562\,ft)$$

$$\epsilon_{E\text{-}W} = -1.58 \times 10^{-5}$$

$$\epsilon_{DIAG.} = \left[L_{DIAG(\text{POST-SETTLE})} - L_{DIAG(\text{PRE-SETTLE})}\right] / L_{DIAG(\text{PRE-SETTLE})}$$

$$\epsilon_{DIAG.} = \left[(70.71068') - (70.71074')\right] / (70.71074')$$

$$\epsilon_{DIAG.} = -8.49 \times 10^{-7}$$

SOLVE FOR SHEAR STRAIN

$$\gamma_{N\text{-}S,E\text{-}W} = \sin^{-1}\left\{\frac{\left[(1+\epsilon_{DIAG})L_{DIAG(\text{PRE-SETTLE})}\right]^2 - \left[(1+\epsilon_{N\text{-}S})L_{N\text{-}S(\text{PRE-SETTLE})}\right]^2 - \left[(1+\epsilon_{E\text{-}W})L_{E\text{-}W(\text{PRE-SETTLE})}\right]^2}{2\left[(1+\epsilon_{N\text{-}S})L_{N\text{-}S(\text{PRE-SETTLE})}\right]\left[(1+\epsilon_{E\text{-}W})L_{E\text{-}W(\text{PRE-SETTLE})}\right]}\right\}$$

$$\gamma_{N\text{-}S,E\text{-}W} = \sin^{-1}\left\{\frac{\left[(1-8.49E^{-7})(70.71074\,ft)\right]^2 - \left[(1+4.80E^{-6})(50.00436\,ft)\right]^2 - \left[(1-1.58E^{-5})(50.00562\,ft)\right]^2}{2\left[(1+4.80E^{-6})(50.00436\,ft)\right]\left[(1-1.58E^{-5})(50.00562\,ft)\right]}\right\}$$

$$\gamma_{N\text{-}S,E\text{-}W} = \sin^{-1}\left(-1.89 \times 10^{-4}\right) \approx -1.89 \times 10^{-4} \text{ RADIANS}$$

Written by: STEVE / DAPP Date: 02/04/30 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___

Client: OMNI Project: OHD FACILITY Project/Proposal No.: FY0900 Task No.: 03

$$\epsilon_{p1} = \frac{\epsilon_{N-S} + \epsilon_{E-W}}{2} + \left[\left(\frac{\epsilon_{N-S} - \epsilon_{E-W}}{2}\right)^2 + \left(\frac{\gamma_{NS-EW}}{2}\right)^2\right]^{\frac{1}{2}}$$

$$\epsilon_{p1} = \frac{(4.80\times10^{-6}) + (-1.58\times10^{-5})}{2} + \left[\left(\frac{(4.80\times10^{-6}) - (-1.58\times10^{-5})}{2}\right)^2 + \left(\frac{(-1.89\times10^{-4})}{2}\right)^2\right]^{\frac{1}{2}}$$

$\epsilon_{p1} = 8.93\times10^{-5} = 0.00893\%$ TENSION ✓

$\epsilon_{p1} = 0.00894\%$ TENSION ← SPREAD SHEET SOLN.

∴ O.K. ✓✓

STABILITY OF FINAL COVER SYSTEM

1. INTRODUCTION

1.1 General
1.2 Purpose of Analyses
1.3 Method of Analyses

2. INPUT PARAMETERS

2.1 Geometry
2.2 Phreatic Surface
2.3 Material Properties

3. ANALYSIS RESULTS

4. SUMMARY AND CONCLUSION

REFERENCES

FIGURES

1. Final Configuration Geometry

2. Final Cover System Components

1. INTRODUCTION

1.1 General

The proposed Oak Hammock Disposal (OHD) landfill will cover approximately 264 acres. Final side slopes will be 4 horizontal to 1 vertical (4H:1V). A final cover system will consist of a geomembrane, geocomposite drainage layer, and cap protective soil.

1.2 Purpose of the Analysis

The purpose of the analysis is to evaluate the veneer slope stability of the OHD landfill final cover system. A factor of safety of 1.50 is the established minimum criterion.

1.3 Method of Analysis

The factor of safety for the veneer stability of the final cover system was evaluated using the method proposed by Giroud et al. (1995) as follows:

For a shear surface above the geomembrane:

$$FS_A = \frac{\gamma_t(t-t_w)+\gamma_b t_w}{\gamma_t(t-t_w)+\gamma_{sat}t_w}\frac{\tan\delta_A}{\tan\beta} + \frac{a_A/\sin\beta}{\gamma_t(t-t_w)+\gamma_{sat}t_w} + \frac{\gamma_t(t-t^*_w)+\gamma_b t^*_w}{\gamma_t(t-t_w)+\gamma_{sat}t_w}\frac{t}{h}\frac{\sin\phi}{\sin(2\beta)\cos(\beta+\phi)} + \frac{ct/h}{\gamma_t(t-t_w)+\gamma_{sat}t_w}\frac{\cos\phi}{\sin\beta\cos(\beta+\phi)} + \frac{T/h}{\gamma_t(t-t_w)+\gamma_{sat}t_w} \quad \text{(Equation 1)}$$

in which:

a_A is the interface adhesion along a slip surface located above the geomembrane;

c is the soil cohesion above geomembrane;

FS_A is the factor of safety for slip surfaces above the geomembrane;

h is the slope height;

T is the tension within geosynthetic reinforcement;

t is the soil layer thickness;

t_w is the water flow thickness;

t^*_w is the water flow thickness in the toe area;

β is slope angle;

δ_A is the interface friction angle along a slip surface located above the geomembrane;

ϕ is the soil internal friction angle above the geomembrane;

γ_b is the soil buoyant unit weight;

γ_{sat} is the soil saturated unit weight; and

γ_t is the soil total unit weight;

For a slip surface below the geomembrane:

$$FS_B = \frac{\tan\delta_B}{\tan\beta} + \frac{a_B/\sin\beta}{\gamma_t(t-t_w)+\gamma_{sat}t_w} + \frac{\gamma_t(t-t^*_w)+\gamma_b t^*_w}{\gamma_t(t-t_w)+\gamma_{sat}t_w}\frac{t}{h}\frac{\sin\phi}{\sin(2\beta)\cos(\beta+\phi)} + \frac{ct/h}{\gamma_t(t-t_w)+\gamma_{sat}t_w}\frac{\cos\phi}{\sin\beta\cos(\beta+\phi)} + \frac{T/h}{\gamma_t(t-t_w)+\gamma_{sat}t_w} \quad \text{(Equation 2)}$$

in which:

a_B is the interface adhesion along a slip surface located below the geomembrane;

c is the soil cohesion above geomembrane;

FS_B is the factor of safety for slip surfaces below the geomembrane;

h is the slope height;

T is the tension within the geosynthetics;

t is the soil layer thickness;

t_w is the water flow thickness;

t^*_w is the water flow thickness in the toe area;

β is slope angle;

δ_A is the interface friction angle along a slip surface located above the geomembrane;

ϕ is the soil internal friction angle above the geomembrane;

γ_b is the soil buoyant unit weight;

γ_{sat} is the soil saturated unit weight; and

γ_t is the soil total unit weight;

2. INPUT PARAMETERS

2.1 Geometry

A typical cross section showing the final cover system is shown in Figure 1. The slope at the top of the proposed landfill is 5 percent. The final cover system on this top slope is not considered susceptible to veneer instability and is not further considered. It is planned that the landfill will reach the maximum height with a side slope inclination of 4H:1V. The components of the final cover system on the sideslope are shown in Figure 2. As shown, the components of the final cover system on the sideslope from bottom the top are: (i) MSW; (ii) a intermediate cover soil layer; (iii) a 40-mil textured geomembrane; (iv) a geocomposite drainage layer; (v) a cap protective soil layer; and (vi) a vegetative soil layer.

2.2 Phreatic Surface

The final cover system on the sideslope includes a geocomposite drainage layer designed to have sufficient capacity to convey the sub-surface water flow. According to analyses performed in the calculation package entitled "*Final Cover System Performance Evaluation*", the calculated maximum head of water in the geocomposite drainage layer is 0.123 inches, which is less than the thickness of the geocomposite drainage layer (i.e., 0.306 inches). Therefore, the phreatic surface within the geocomposite drainage layer has no influence on soil layers above the geomembrane.

basis ?

2.3 Material Properties

For the cover soil layers, a typical unit weight of 120 lb/ft^3 and a typical peak drained friction angle of 35 degrees were used. For the geosynthetics, the weakest interface below the geomembrane for a final cover system is the textured geomembrane to sand interface. Based on the previous experiences [GeoSyntec, 1998], the value of δ can be estimated as follows:

$$\frac{\tan\delta}{\tan\phi} = 0.7 \; to \; 0.8$$

in which:

δ = geomembrane/soil interface friction angle; and

ϕ =soil friction angle

therefore, using the average value:

$$\frac{\tan\delta}{\tan\phi} = 0.75$$

then,

$$\delta = \tan^{-1}(0.75 \tan 35°) = 27.71°$$

The weakest interface above the geomembrane for a final cover system is the textured geomembrane and geocomposite drainage layer interface. Based on the previous experiences [GeoSyntec, 1998], the value of interface friction angle for this interface varies between 17° and 29° with an average value of δ_A=23°.

4. ANALYSIS AND RESULTS

Using Equations 1 and 2, adapted from Giroud et al. [1995], the factor of safety for the final cover system veneer stability can be calculated using the parameters:

$a_A = 0$ (conservatively assumed)
$a_B = 0$ (conservatively assumed)
$c = 0$ (conservatively assumed)
$h = 98$ ft (maximum)
$T = 0$ (conservatively assumed)
$t = 2.5$ ft.
$t_w = 0$
$t^*_w = 0$
$\beta = \tan^{-1}(1/4) = 14°$
δ_A=23°
$\delta_B = 27.71°$
ϕ= 35°
γ_b = N/A
γ_{sat} = N/A
$\gamma_t = 120$ pcf

For the critical slip surface below the geomembrane:

$$FS = \frac{\tan(27.71)}{\tan(14)} + \frac{4}{98}\frac{\sin(35)}{\sin(2 \times 21.8)\cos(21.8 + 35)}$$

FS = 2.17 > 1.50

For the critical slip surface above the geomembrane:

$$FS = \frac{\tan(23)}{\tan(14)} + \frac{4}{98}\frac{\sin(35)}{\sin(2 \times 14)\cos(14 + 35)}$$

FS = 1.78 >1.50

5. SUMMARY AND CONCLUSION

An analysis was performed to evaluate the final cover system veneer stability for the proposed OHD landfill. The established minimum criterion for stability is a factor of safety of 1.50. The analysis has shown that the critical slip surfaces above and below the cover system geomembrane have calculated factors of safety of 2.17 and 1.78, respectively. The factors of safety for both of these critical slip surfaces were greater than the required 1.50.

REFERENCES

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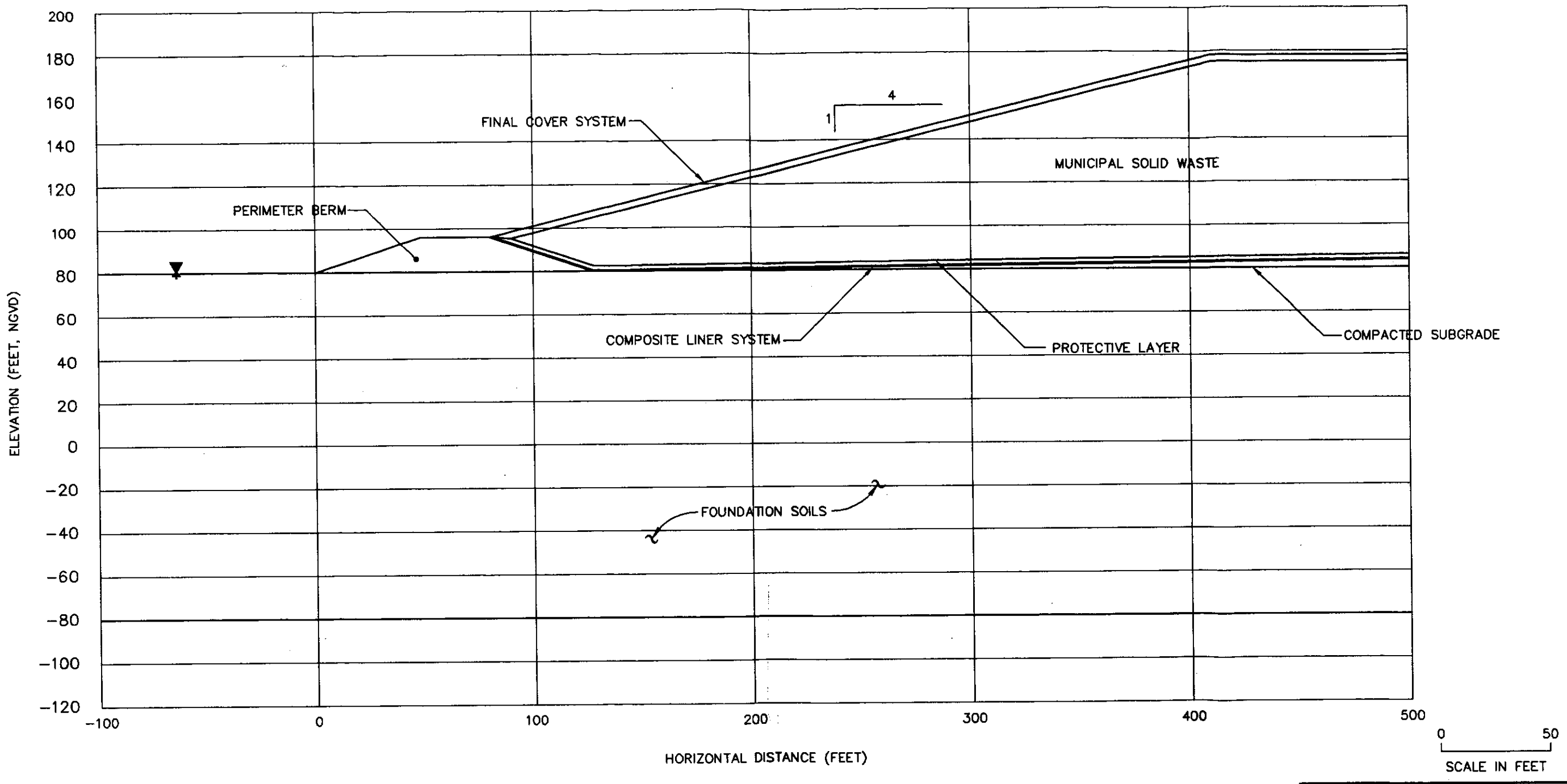

Project	OAK HAMMOCK SOLID WASTE DISPOSAL FACILITY PERMIT APPLICATION
Figure Title	**FINAL CONFIGURATION GEOMETRY**

Project Number	Date	File No.	Figure No.
FW0400	MARCH 02	0400FA035	1

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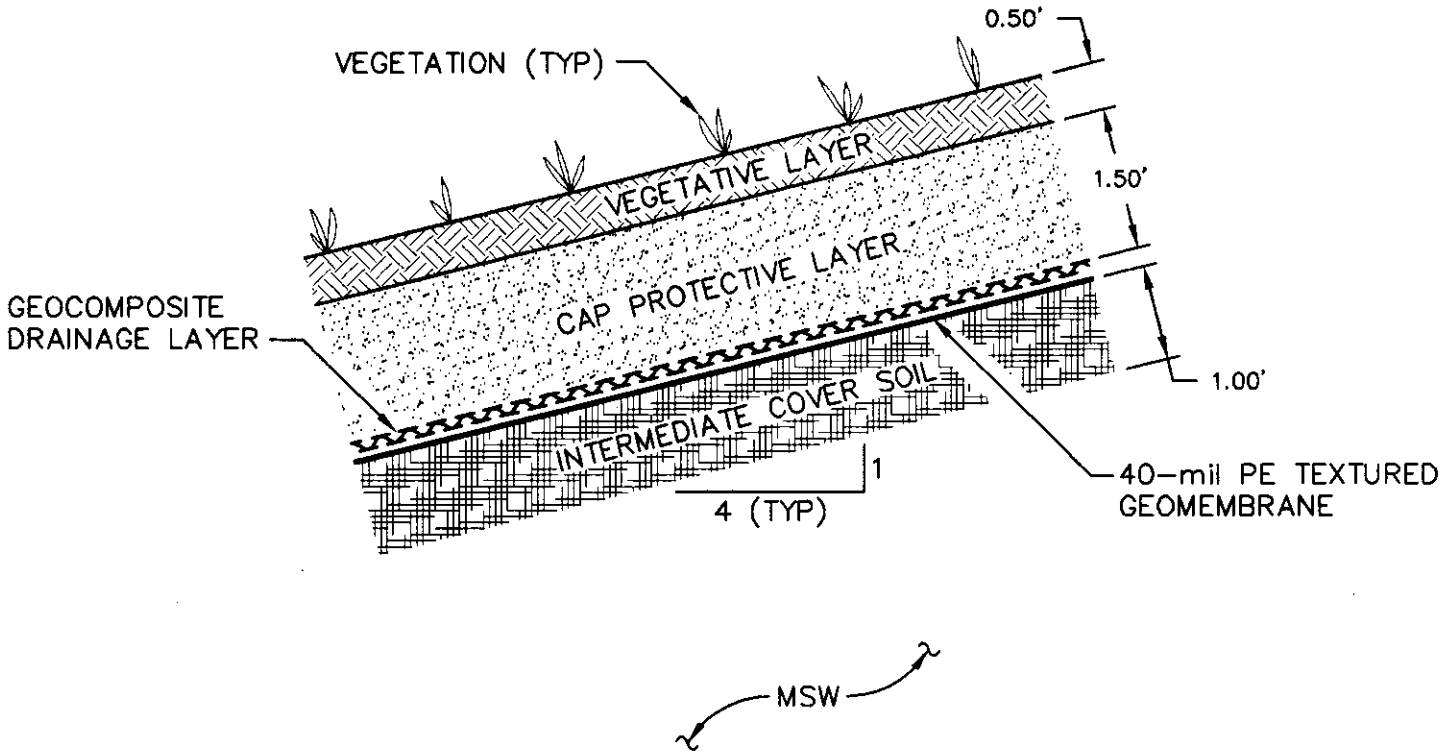

Project: OAK HAMMOCK SOLID WASTE DISPOSAL FACILITY PERMIT APPLICATION			
Figure Title: **FINAL COVER SYSTEM COMPONENTS**			
Project Number: FW0400	Date: MARCH 02	File No.: 0400FA029	Figure No.: 2
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