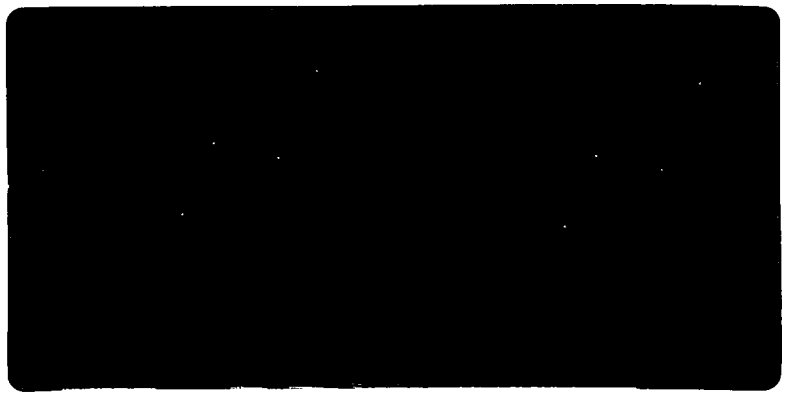


JONES EDMUNDS

CITRUS COUNTY CENTRAL LANDFILL
GROUNDWATER
INVESTIGATION REPORT

RESPONSE TO FDEP REQUEST
FOR ADDITIONAL INFORMATION

Prepared for:

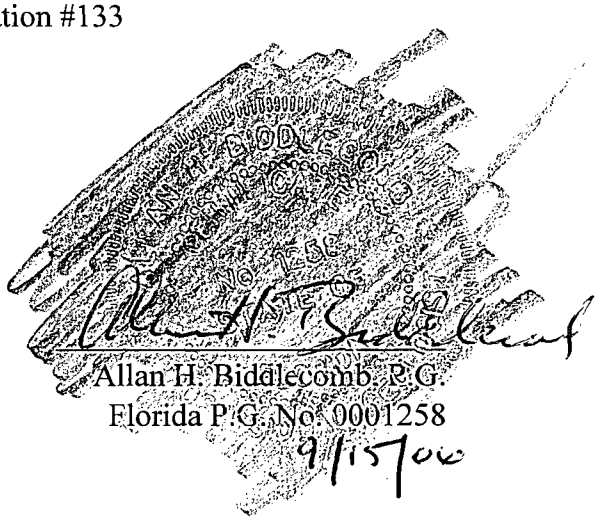
CITRUS COUNTY BOARD OF COUNTY COMMISSIONERS
110 North Apopka Avenue
Inverness, Florida 34450

Prepared by:

JONES EDMUNDS & ASSOCIATES, INC.
730 NE Waldo Road
Gainesville, Florida 32641

P.E. Certificate of Authorization #1841
P.G. Certificate of Authorization #133

September 2006



Allan H. Biddlecomb, P.G.
Florida P.G. No. 0001258
9/15/06

CITRUS COUNTY CENTRAL LANDFILL
GROUNDWATER
INVESTIGATION REPORT

RESPONSE TO FDEP REQUEST
FOR ADDITIONAL INFORMATION

September 2006

The following information is provided in response to the Florida Department of Environmental Protection (FDEP) May 10, 2006 request for additional information prepared by John R. Morris, P.G. Information is provided in the order requested in the referenced correspondence. In each case, the DEP request is repeated with the response immediately following.

TABLE OF CONTENTS

RESPONSES TO COMMENTS

SECTION 2.3 – GROUND WATER SAMPLING

Comment 1: The second paragraph of this section indicated that ground water samples collected from wells MW-10 through MW-15 and MW-17 were analyzed for the parameters listed in Table 2 ("Initial Ground Water Sampling Parameters"). It is noted that the elevated detection levels reported for selected volatile organics and semi-volatile organics listed by 40 CFR Part 258, Appendix II do not demonstrate compliance with ground water standards or minimum criteria as summarized on the attached table. It is also noted that until final approval of the pending lease expansion with the Florida Division of Forestry has been resolved, Citrus County Solid Waste Management has agreed to include wells MW-10 through MW-15 and MW-17 in the routine (semi-annual) ground water sampling events required by Specific Condition No. E.4.b., of permit No. 21375-008-SO. The next routine ground water sampling event is scheduled for July 2006, however the parameters required for this upcoming sampling event do not include the parameters listed in 40 CFR Part 258, Appendix II. Please have the Respondent include analysis of the above-referenced volatile organics and semi-volatile organics from samples collected from wells MW-10 through MW-15 and MW-17 during the July 2006 sampling event using alternate methodologies as appropriate to demonstrate compliances with the Department's ground water standards and minimum criteria. Please have the Respondent submit revisions this section to reference this supplemental sampling event and results of analyses.

Response 1: Groundwater samples were collected from monitoring wells MW-10 through MW-15 and MW-17 during July 2006. The samples were analyzed for the parameters listed in 40 CFR Part 258, Appendix II. Analytical results for the July 2006 sampling event are provided in Appendix H of the Groundwater Investigation Report (GWIR). Alternate methodologies were used by the analytical laboratory following communications with the FDEP Laboratory in Tallahassee, Florida. Using the best available technology, the laboratory was able to reduce the reporting limits for Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(a)pyrene, and Indeno(1,2,3-cd)pyrene to levels below the Maximum Contaminant Levels (MCL) for those constituents. The reporting limits for the following parameters were not able to be reduced to levels below the MCL: Chlorobenzilate, Diallate, Dibenzo(a,h)anthracene, Dimethoate, 2,4-dinitrotoluene, Disulfoton, Kepone, Pentachloronitrobenzene, and Phorate. A copy of the laboratory analytical report detailing the methodologies used is also provided in Appendix H of the GWIR.

Comment 2: Please have the Respondent submit revisions to this section to reference the initial sampling event (November 2005), resampling events conducted at well MW-15 (January 5, 2006 and January 27, 2006) and the upcoming supplemental sampling event referenced in review comment No. 1, above.

Response 2: Section 2.3 of the GWIR has been revised to reference the initial sampling event (November 2005), re-sampling events at MW-15 (January 5, 2006 and January 27, 2006), the July 2006 sampling event, and the August 2006 re-sampling of MW-10.

SECTION 2.4 – GROUND WATER ELEVATION MEASUREMENTS

Comment 3: Please have the Respondent submit revisions to this section to provide a summary of ground water elevation data to be collected during the upcoming supplemental sampling event referenced in review comment No. 1, above. Please have the Respondent submit revisions to this section of the GWR to include a new ground water surface contour map for the upcoming supplemental sampling event.

Response 3: Section 2.4 of the GWIR has been revised to reference groundwater elevation data from the July 2006 sampling event. Table 3 of the GWIR has been revised to include the December 2005 and the July 2006 groundwater elevation data. A new groundwater contour map was prepared with the July 2006 data and is provided as Figure 5 in the GWIR. The revised GWIR is provided as Attachment 1.

SECTION 2.5 – HYDRAULIC TESTING

Comment 4: Field data of residual head vs. time collected during the hydraulic conductivity testing ("slug out" tests) conducted at wells MW-10 through MW-17 were provided in Appendix G. Please have the Respondent submit revisions to Appendix G to also include the graphical solutions prepared for each set of slug test data.

Response 4: Appendix G has been revised (Attachment 1) to include the graphical solutions prepared for each set of slug test data.

SECTION 3.1 – SITE SPECIFIC HYDROGEOLOGY

Comment 5: Please have the Respondent submit revisions to this section to include the absence of limestone sediments in the soil borings completed at wells MW-10, MW-15 and MW-17 in the discussion of the variation in elevation of the sediments that comprise the top of the Ocala Formation.

Response 5: Section 3.1 has been revised (Attachment 1) to include a discussion of the absence of limestone sediments in the soil borings completed at wells MW-10, MW-15, and MW-17.

SECTION 3.2 – GROUND WATER SAMPLING RESULTS

Comment 6: Please have the Respondent submit revisions to the fourth paragraph of this section to include the occurrence of vinyl chloride that was reported at a concentration of 0.8 µg/L for the sample collected from well MW-13 during November 2005. Please have the Respondent submit revisions to the fourth paragraph of this section to include the results reported for the resampling events conducted at well MW-15.

Response 6: **Paragraph 4 of Section 3.2 has been revised (Attachment 1) to include a discussion of vinyl chloride concentrations in MW-13 during the November 2005 sampling and in MW-15 during the January 2006 re-sampling events.**

Comment 7: Please have the Respondent submit revisions to this section to include a summary of the analytical results for the upcoming supplemental sampling event referenced in review comment No. 1, above.

Response 7: **Section 3.2 has been revised (Attachment 1) to include a discussion of the July 2006 sampling event and the August 2006 re-sampling of MW-10.**

SECTION 3.3.1 – GROUND WATER FLOW DIRECTION

Comment 8: Please have the Respondent submit revisions to this section to include the ground water elevations measured during the upcoming supplemental sampling event referenced in review comment No. 1, above, in the discussion of the direction of ground water flow.

Response 8: **Section 3.3.1 has been revised (Attachment 1) to include a discussion of the July 2006 groundwater elevation data.**

SECTION 3.3.2 – GROUND WATER FLOW RATE

Comment 9: Please have the Respondent submit revisions to this section (and Table 4) to include ground water velocity calculations also using the hydraulic gradient values obtained for the new ground water surface contour map for the upcoming supplemental sampling event referenced in review comment No. 1, above.

Response 9: **Section 3.3.2 and Table 4 have been revised (Attachment 1) to include the hydraulic gradient values calculated from the July 2006 groundwater elevation data and the resultant groundwater velocity calculations.**

SECTION 4.0 – SUMMARY OF FINDINGS AND RECOMMENDATIONS

Comment 10: Please have the Respondent submit revisions to the third conclusions bullet item t be consistent with the response provided to review comment No. 8, above.

Response 10: **The third bullet item of the conclusions portion of Section 4.0 has been revised (Attachment 1) to be consistent with the November 2005 and July 2006 data.**

Comment 11: Please have the Respondent submit revisions to the fifth conclusion bullet item to include the results of the initial sampling event (November 2005), resampling events conducted at well MW-15 (January 5, 2006 and January 27, 2006) and the upcoming supplemental sampling event referenced in review comment No. 1, above.

Response 11: **The fifth bullet of the conclusions portion of Section 4.0 has been revised (Attachment 1) to include the results of the initial sampling event (November 2005), re-sampling events at MW-15 (January 5, 2006 and January 27, 2006), the July 2006 sampling event and the August 2006 re-sampling of MW-10.**

Comment 12: Please have the Respondent submit revisions to the first recommendation bullet item to item the results of the initial sampling event (November 2005), resampling events conducted at well MW-15 (January 5, 2006 and January 27, 2006) and the upcoming supplemental sampling event referenced in review comment No. 1, above.

Response 12: **The first bullet of the recommendations portion of Section 4.0 has been revised (Attachment 1) based on the results of the initial sampling event (November 2005), re-sampling events at MW-15 (January 5, 2006 and January 27, 2006), the July 2006 sampling event, and the August 2006 re-sampling of MW-10.**

ATTACHMENT 1

REVISED GROUNDWATER INVESTIGATION REPORT

CITRUS COUNTY
CENTRAL LANDFILL
GROUNDWATER INVESTIGATION
REPORT

Prepared for:

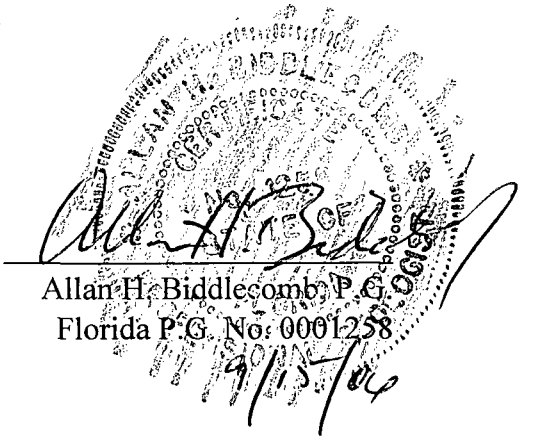
CITRUS COUNTY BOARD OF COUNTY COMMISSIONERS

Prepared by:

JONES EDMUNDS & ASSOCIATES, INC.
730 NE Waldo Road
Gainesville, Florida 32641

P.E. Certificate of Authorization #1841
P.G. Certificate of Authorization #133

~~January 2006~~September 2006



Allan H. Biddlecomb, P.G.
Florida P.G. No. 0001258

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 BACKGROUND

On September 20, 2005 the State of Florida Department of Environmental Protection (DEP) and the Citrus County Board of County Commissioners (County) entered into a Consent Agreement to address issues related to the Citrus County Central Landfill (Landfill). The Consent Agreement (OGC File Number 05-1078) was required as a result of exceedances of DEP groundwater standards in downgradient groundwater monitoring wells and exceedances of the lower explosive limit for combustible gases (calibrated to methane) in landfill gas monitoring probes located at or beyond the landfill property boundary.

Jones Edmunds & Associates, Inc. (Jones Edmunds) was retained by the County to perform the groundwater investigation activities required in Consent Agreement Paragraphs 6, 8, 11a, 11b, 12a (if necessary), and Exhibit A. This report provides a discussion of the investigative work performed to comply with the Consent Agreement, the results of the investigation, and recommendations for further action based upon the results. A report of all non-groundwater related work, findings, and recommendations as required by the Consent Agreement will be submitted to DEP under separate cover.

1.2 PHYSICAL LOCATION AND GEOLOGICAL SETTING

The Landfill is located in central Citrus County approximately 3 miles east of Lecanto, Florida, on State Road 44. The landfill is located at latitude 28° 51' 07" North and longitude 82°26'12" West in Section 1, Township 19 South, Range 18 East. The Landfill is composed of a closed 60-acre site and an active 80-acre site. A site location map of the Landfill is provided as Figure 1. The active landfill is a lined cell with a leachate collection system. Except for 7 acres, the closed landfill is unlined and is not served by a leachate collection system. The closed landfill is capped with a membrane (with the exception of one small area) and soil cover.

The Landfill lies within the Hernando Hammock physiographic subdivision of the Ocala Uplift District as described by Brooks (1981). This region is characterized by remnant erosional hills and ridges, which are in-filled with thick, weathered deposits of sand, and clayey sand. The Landfill is also within the northern portion of the Brooksville Ridge. The Brooksville Ridge is characterized as an extensive, internally drained, karst terrain with high local relief.

Near-surface regional geology in the landfill area is typically characterized by undifferentiated sands and clays of the Hawthorn Group. The thickness and continuity of individual strata varies greatly in the area. The sand and clays act as a partial confining unit for the Floridan aquifer in some parts of the region but is absent or discontinuous in other areas. Beneath the undifferentiated sands and clays lies a thick sequence of Eocene age carbonate deposits, which generally consist of the Suwannee Limestone, Ocala Limestone, and Avon Park Formation.

1.3 EXEMPTION FROM SECONDARY DRINKING WATER STANDARDS

Florida Administrative Code (FAC) allows for exemptions from certain drinking water standards for facilities which meet specific criteria. Specifically, Rule 62-520.520 allows for exemption from Secondary Drinking Water Standards (SDWS) for facilities which meet the following requirements:

> **62-520.520 Exemptions from Secondary Drinking Water Standards Outside a Zone of Discharge in Class G-II GroundWater.**
> (1) An existing installation discharging to Class G-II ground water is exempt from compliance with secondary drinking water standards unless the Department determines that compliance with one or more secondary standards by such installation is necessary to protect ground water used or reasonably likely to be used as a potable water source. Such determination shall be based upon:
>
> (a) A determination that the portion of the aquifer(s) reasonably likely to be affected by the discharge:
>
> 1. is used as a potable water source, or
> 2. is identified in a planning document as a future potable water source by a state agency, water management district, regional water supply authority, or local government, and is reasonably likely to be used as such.
>
> (b) A site specific hydrogeologic characterization of the receiving aquifer which defines:
>
> 1. direction and rate of ground water flow, and
> 2. depth and degree of confinement.
>
> (c) A waste stream characterization, site specific hydrogeologic characterization, and review of monitoring data which demonstrates that the discharge is likely to cause a violation of one or more secondary standards outside the zone of discharge in:
>
> 1. the portion of the receiving aquifer identified in (a)2. above, or
> 2. a known public or private potable water supply well.

The definition of an "existing installation" is provided in Rule 62-522.200, FAC as follows:

> **62-522.200 Definitions for Ground Water Permitting and Monitoring.**
> (1) For the purposes of Chapters 62-520 and 62-522, F.A.C., "Existing Installation" means any installation which had filed a complete application for a water discharge permit on or before January 1, 1983, or which submitted a ground water monitoring plan no later than six months after the date required for that type of installation as listed in Rule 62-528.700, F.A.C., (1983) and a plan was subsequently approved by the Department, or which was in fact an installation reasonably expected to release contaminants into the ground water on or before July 1, 1982, and operated consistently with statutes and rules relating to ground water discharge in effect at the time of the operation.

A groundwater monitoring program has been conducted at the Landfill since 1975 in compliance with the statutes and rules in effect at the time of operation. A copy of selected pages of the 1985 permit renewal application discussing the original monitoring program and subsequent modifications is provided in Appendix A.

2.0 FIELD INVESTIGATIVE WORK

2.1 FORESTRY SITE USE PERMIT

A State Forest Use Permit was provided by the State of Florida Department of Agriculture and Consumer Services Division of Forestry (Forestry) on October 5, 2005. The permit provided permission to conduct the groundwater and landfill gas investigations on Forestry property prior to execution of a lease expansion agreement. A copy of the Forestry permit is provided in Appendix B.

2.2 GROUNDWATER MONITORING WELL INSTALLATION

2.2.1 Archeological Monitoring

Prior to installation of the groundwater investigation monitoring wells, Forestry was contacted to provide archeological monitoring during or prior to well construction as required by the State Forest Use Permit. On October 26, 2005, Ms. Colleen Werner of Forestry performed an evaluation of each of the borehole locations with respect to potential artifacts. Ms. Werner determined that no artifacts were present and authorized drilling to proceed at the selected well sites. A copy of the Archaeological Monitoring Results is provided in Appendix C.

2.2.2 Groundwater Monitoring Well Construction

Seven groundwater monitoring wells (MW-10 through MW-15 and MW-17) were installed within 100 feet of the edge of waste along the western, southwest, and northwest Landfill boundaries. One water-level monitoring well (MW-16) was installed between the lined and unlined cells to provide additional groundwater flow information. The locations of the monitoring wells and coordinates are shown in Figure 2.

The wells were constructed of 2-inch diameter, polyvinyl chloride (PVC) piping, with 20-feet of 0.010-inch slotted screen extending from approximately -7 to 15 feet, National Geodetic Vertical Datum (NGVD). The screen interval was selected to accommodate the large water level fluctuations observed at the site, while allowing for monitoring of the uppermost water bearing unit. The boreholes were advanced using 8-¼-inch diameter hollow stem augers. All of the wells were finished with 12-inch diameter steel flush mount protective covers encased in 2-foot-by-2-foot concrete pads. Copies of the drilling logs and well completion reports are provided in Appendices D and E, respectively. A summary of monitoring well construction details is provided in Table 1. A discussion of geology encountered during borehole advancement is provided in Section 3.1.

2.2.3 Topographic Survey

The groundwater investigation monitoring wells were surveyed by Nature Coast Land Surveying, Inc. during December 2005. The wells were surveyed to determine horizontal locations and top of casing elevations within an accuracy of +/-0.01 foot, NGVD. The monitoring well elevations and horizontal coordinates are provided in Table 1. The horizontal well locations are shown in Figure 2.

2.2.4 Groundwater Monitoring Well Development

The newly installed monitoring wells were developed by Jones Edmunds staff during November 2005. The wells were developed using the pump and surge technique with an electric submersible pump. Turbidity values were generally greater than 1,000 NTU prior to development. Upon completion of development, turbidity values ranged from 11 to 1 NTU. Turbidity values at the time of sampling were less than 5 NTU. Copies of the development notes are provided in Appendix F.

2.3 GROUNDWATER SAMPLING

Groundwater samples were collected from monitoring wells MW-10 through MW-15 and MW-17 on November 16 and 17, 2005. Monitoring well MW-15 was re-sampled on January 5 and 27, 2006. Samples were also collected from wells MW-10 through MW-15 and MW-17 on July 17 through 20, 2006. MW-10 was re-sampled on August 31, 2006. Samples were collected by Jones Edmunds personnel using DEP Standard Operating Procedures 001-01.

Analyses were performed by ENCO Laboratories, Inc. in Orlando, Florida. Groundwater samples from the initial sampling were analyzed for the parameters listed in Table 2. Groundwater samples from the MW-15 re-sampling were analyzed for Vinyl Chloride. Groundwater samples from the July 2006 sampling event were analyzed for the parameters listed in Table 2, with the exception that Polynuclear Aromatic Hydrocarbons were analyzed in place of the Appendix II parameters. The August 2006 re-sample of MW-10 was analyzed for the parameters listed in Table 2, excluding the Appendix II parameters. A discussion of the analytical results is provided in Section 3.2.

2.4 GROUNDWATER ELEVATION MEASUREMENTS

Groundwater elevation data was collected from all site monitoring wells on December 21, 2005 and July 17, 2006. Depths to water measurements were recorded using an electronic water level indicator. The depth measurements were then subtracted from the top of casing elevations to determine the resultant groundwater elevation in feet, NGVD. A summary of groundwater elevation data from the ~~event~~ events is provided in Table 3. ~~A groundwater contour map~~ Groundwater contour maps prepared with the December and July data ~~is~~ are provided as Figures 3 and 5, respectively. A discussion of groundwater flow direction is included in Section 3.3.1.

2.5 HYDRAULIC TESTING

Hydraulic conductivity testing (slug testing) was performed in monitoring wells MW-10 through MW-17 during the week of November 17, 2005. The tests were conducted by lowering a slug (a solid plastic cylinder) into the well causing water levels to rise (referred to as slug-in). An electronic data logger recorded water levels as they rose in the well and as they recovered (fell) to static conditions. The slug was then quickly removed from the well (referred to as slug-out). Water levels were recorded by the data logger as they fell upon slug removal and recovered (rose) to static levels. The data were evaluated using the Hvorslev method (Fetter, 2001) to determine the hydraulic

conductivity (K) value of the aquifer. The slug-in data were not used due to the well screens being partially submerged. Use of the slug-out data also minimized the influence of the sand filter pack on the test results. A discussion of the hydraulic conductivity values and resultant groundwater velocity values for the site is provided in Section 3.3.2. Hydraulic conductivity data and graphs from each slug test are provided in Appendix G.

3.0 RESULTS

3.1 SITE-SPECIFIC HYDROGEOLOGY

Site-specific geology is characterized by surficial sands ranging from fine to medium sands to clayey, silty fine sands. Limestone is encountered at varying depths across the site. The top of the Ocala Formation is at an approximate elevation of 20 feet at MW-11 to -2 feet NGVD at MW-14 along the western boundary of the landfill. Limestone was not encountered in MW-10, MW-15, and MW-17, which were completed to depths of approximately -6 feet, NGVD. This indicates that the top of the Ocala Formation is generally higher towards the center of the site, though the formation surface is likely highly variable as a result of Oligocene erosion. Interbedded with the limestone are fine to medium grained sands, sandy clays, and clays. Laterally discontinuous clay layers approximately 1 to 5 feet thick were encountered at MW-13 and MW-14.

3.2 GROUNDWATER SAMPLING RESULTS

Laboratory analytical results were compared to Primary Drinking Water Standards (PDWS), Secondary Drinking Water Standards (SDWS) and minimum criteria as required by Paragraph 11b of the Consent Agreement and Specific Condition E7 of the permit. Groundwater analytical data are provided in Appendix H. Three parameters were reported outside groundwater standards for samples collected from the groundwater investigation monitoring wells. The three parameters were as follows:

Field Parameters:	pH
Metals:	Iron
Volatile Organic Compounds:	Vinyl Chloride

The SDWS range for pH is 6.5 to 8.5 S.U. Values of pH from the initial sampling event ranged from 4.93 to 7.03 S.U. The pH values reported for monitoring wells MW-10, MW-13, MW-15, and MW-17 were below the lower SDWS. All other wells were within the SDWS range. Similar values were reported for samples collected during July 2006. Historical background values for pH range from 4.66 to 6.48 S.U. (Attachment 6 of the July 2005 Groundwater Monitoring Plan Evaluation report). The pH values observed in the groundwater investigation wells are consistent with background values and are therefore considered to be representative of ambient conditions.

The SDWS for Iron is 300 µg/L. The initial sampling event reported Iron ~~was reported~~ at concentrations ranging from 54 to 5,600 µg/L, with values above the SDWS in monitoring wells MW-12, MW-15, and MW-17. Iron concentrations for the July 2006 sampling ranged from less than 54 to 6,710 µg/L, with values above the SDWS in monitoring wells MW-10, MW-12, MW-13, MW-15, and MW-17. Historical background values range from below the laboratory detection limit to 694 µg/L (Attachment 6 of the July 2005 Groundwater Monitoring Plan Evaluation report).

The PDWS for Vinyl Chloride is 1 µg/L. During the initial sampling event, Vinyl Chloride was reported at a concentration of 2 µg/L in monitoring well MW-15. However, this value was not confirmed by the January 2006 re-sampling of MW-15. Vinyl Chloride was reported below the laboratory detection limit for all other samples collected during the initial sampling event, with the exception of MW-13, which reported a value of 0.8 µg/L. During the July 2006 sampling event, Vinyl Chloride was reported at concentrations of 5 µg/L in MW-10 and 1 µg/L in MW-15. MW-10 was re-sampled on August 31, 2006. The re-sampling reported a Vinyl Chloride concentration of 2 µg/L.

The PDWS for Benzene is 1 µg/L. During the July 2006 sampling event, Benzene was reported at a concentration of 2 µg/L in MW-10 and 0.6 µg/L in MW-15 . The August re-sampling of MW-10 reported Benzene at 1 µg/L. All other wells reported Benzene at less than 0.1 µg/L.

The PDWS for Methylene Chloride is 5 µg/L. During the July 2006 sampling event, Methylene Chloride was reported at a concentration of 6 µg/L in MW-10 and 5 µg/L in MW-17. All other wells reported Methylene Chloride at less than 1 µg/L. The August re-sampling of MW-10 reported Methylene Chloride at a concentration of 5 µg/L.

Bromodichloromethane and Dibromochloromethane were reported in MW-10 during the initial sampling event ~~each~~ at concentrations of 1µg/L. These concentrations are above the Groundwater Cleanup Target Level of 0.6 µg/L and 0.4 µg/L, respectively. Bromodichloromethane and Dibromochloromethane do not have a PDWS or SDWS, nor are they minimum criteria parameters. They are two of a group of constituents which are collectively referred to as Total Trihalomethanes. Total Trihalomethane has a PDWS of 80 µg/L. The highest Total Trihalomethane value reported for the initial sampling event was 4 µg/L.

3.3 GROUNDWATER FLOW

3.3.1 Groundwater Flow Direction

The Floridan aquifer is the only aquifer present beneath the Landfill area. The Floridan aquifer is under water table conditions due to the absence of a laterally continuous confining layer of lower permeability strata. Groundwater surface contouring of the Floridan aquifer was performed using groundwater elevation data collected on December 21, 2005 and July 17, 2006. The depths to water measurements were subtracted from the top of casing elevations to determine the resultant groundwater elevations, which are provided for both sampling events in Table 3. An interpretation of groundwater contours is included as Figure 3 for the December 21, 2005 water level elevations and as Figure 5 for the July 17, 2006 water level elevations.

Regionally, groundwater flow within the Floridan aquifer is from east to west toward the Gulf of Mexico. Interpretation of site-specific elevation data shows a similar east to west groundwater flow direction. As shown in Figures 3 and 5, the highest groundwater elevations are observed in the three background monitoring wells located along the eastern Landfill boundary, while the lowest

elevations are observed in monitoring wells along the western boundary. The direction of groundwater flow beneath the site is impacted by the disposal of treated leachate effluent and collection of site stormwater in the center of the site in the area of MW-4, MW-5, and MW-6. The effluent disposal and stormwater system create a localized groundwater mounding effect, which slightly alters what would otherwise be an east-to-west flow direction. Groundwater elevation data from MW-16 indicate that the influence of the stormwater system and effluent disposal on flow direction is limited to a rather small area (a radius of influence of less than 500 feet). A similar groundwater high was observed for both the 2005 and 2006 data sets in the vicinity of MW-10. The 2005 data were interpreted as a localized mound in the area of MW-10, possibly as a result of stormwater infiltration from the pond located immediately northwest of MW-10. Data for MW-10 were not included in the July 2006 contour map as there is insufficient data to verify and explain the apparent groundwater high in this area. The top of casing elevation at MW-10 will be surveyed to evaluate the accuracy of the original data. A third data set of groundwater elevations will be recorded at the time of the survey, and a new groundwater contour map will be prepared and submitted to the Department no later than October 30, 2006.

3.3.2 Groundwater Flow Rate

The rate of groundwater flow beneath the Landfill was determined using the following equation:

Velocity (V) = Hydraulic Conductivity (K) x Hydraulic Gradient (i) / Porosity (n)

Hydraulic conductivity (K) values were determined by evaluating slug test data using the Hvorslev method. A summary of hydraulic data for December 2005 is provided in Table 4. A summary of hydraulic data for July 2006 is provided in Table 5. Data used to prepare the histogram in Figure 7 is provided in Table 6. The K values ranged from a low of 5.53 feet/day in monitoring well MW-13 to a high of 40.04 feet/day in monitoring well MW-17. A summary of slug test data and K value calculations using the Hvorslev method are provided in subset A of Table 4. The slug test field data is provided in Appendix ~~E~~G.

The hydraulic gradient of the site was calculated using groundwater elevation data collected on December 21, 2005 and July 17, 2006. The groundwater elevation of a downgradient well was subtracted from the groundwater elevation of an upgradient well and then divided by the distance between the two wells. This calculation was performed using three separate well combinations to provide a range of values representative of the site. Hydraulic gradient values ranged from 0.00021 to 0.00132 foot/foot on December 21, 2005 and from 0.00024 to 0.00068 feet/foot on July 17, 2006. The well combinations and calculations are shown in Figure 4 for December 21, 2005 and in Figure 6 for July 17, 2006. A summary of the resultant gradient values is provided in subset B of Table 4.

A conservative estimate for the effective porosity (25%) was selected based on published values (Fetter, 2001).

Using the equation provided above and the most conservative values (i.e., the highest) for hydraulic conductivity (40.04 feet/day), hydraulic gradient (.00132 foot/foot), and porosity (.25), the maximum groundwater flow velocity was determined to be 0.211 foot/day. The resulting groundwater travel time in six months is approximately 38 feet. A summary of groundwater velocity calculations is provided in Part C of Table 4.

A histogram of the calculated distances that groundwater can travel in 6 months is included as Figure 7. The histogram includes distances calculated from hydraulic gradients compiled from both the December 21, 2005 and the July 17, 2006 groundwater contour maps. The histogram shows that 77% (37 out of 48 values) of calculated distances that groundwater can travel in 6 months are between 0 and 15 feet with 29 of 48 values (or 60%) being less than 7.5 feet. Only three distances were greater than 35 feet in 6 months with 8 distances calculated between 17.6 and 25 feet. Although the maximum distance that groundwater could travel in 6 months was calculated to be 38 feet, it is more probable that the maximum distance will be no greater than 15 feet.

4.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

The following conclusions can be drawn based upon the results of the investigation:

- The Landfill is underlain by a single aquifer system—the Floridan aquifer. The Floridan aquifer exists under water table conditions and generally flows from east to west.
- The collection of site stormwater and disposal of treated leachate effluent in the center of the site is creating a localized groundwater mounding effect, with a radius of influence of less than 500 feet. This effect was observed on both the December 21, 2005 and July 17, 2006 groundwater elevation contour maps.
- ~~The~~ Monitoring groundwater velocity beneath the Landfill is less than 0.22 foot per day, or approximately 76 feet per year as ~~compliance monitoring wells for the Landfill~~ determined using hydraulic gradients from groundwater contour maps compiled from data collected December 21, 2005 and July 17, 2006. The majority of groundwater velocities calculated (77% or 37 out of 48 calculated values) yielded travel times of less than 30 feet per year.
- The groundwater investigation wells are constructed appropriately to intersect the water table of the uppermost water bearing unit. The wells are also located appropriately horizontally according to FAC to serve as compliance monitoring wells for the Landfill.
- Concentrations of groundwater constituents exceeded applicable drinking water standards for the initial samples collected from three of the seven groundwater investigation monitoring wells. Specifically, Vinyl Chloride (PDWS), Iron (SDWS), and pH (SDWS) were reported at concentrations in excess of applicable standards. The Vinyl Chloride concentration reported for MW-15 in the initial sampling was not confirmed in the January 2006 re-sampling. Values of pH are comparable to site background concentrations and are considered to be representative of natural conditions. The July 2006 sampling results indicated exceedances of the PDWS for Benzene, Methylene Chloride, and Vinyl Chloride in monitoring well MW-10. A re-sampling of MW-10 was conducted on August 31, 2006. The re-sample results confirmed concentrations of Vinyl Chloride above the PDWS.
- The Landfill meets the requirements to be classified as an "existing installation" as defined by Rule 62-522.200, FAC. Additionally, the Landfill is bound in the downgradient direction, to the west, by the Withlacoochee State Forest. No potable drinking water wells are currently located immediately west or southwest of the Landfill, and there is no indication that future land use will change. Therefore, as discussed in Section 1.3, the County should be considered exempt from compliance with SDWS at the zone of discharge. Accordingly, the Iron concentrations reported for MW-12, MW-15, and MW-17 do not require assessment activities.

The following recommendations are provided based on the results of the investigation:

- ~~MW-15 will be resampled to provide confirmation of the Vinyl Chloride concentration reported during the initial sampling event. Sampling is currently scheduled for the week of December 26, 2005. Analytical results will be available the week of January 16, 2006. A report of the sampling methods and analytical data will provided to the DEP no later than January 30, 2006. If the presence of Vinyl Chloride at a concentration above the PDWS is confirmed, then assessment monitoring will be initiated in accordance with Rule 62-780, FAC. If the Vinyl Chloride concentration is not confirmed by re-sample, the County will request that the re-sampling value replace the concentration reported for the initial sampling event. If the re-sample value is below the PDWS, no assessment monitoring will be required for this parameter.~~
- Based on the confirmed Vinyl Chloride concentrations in MW-10, a Site Assessment will be conducted as required by Rule 62-780.600, F.A.C. and Section 5.0 of Exhibit A of the Consent Agreement.
- A permit modification will be submitted to the DEP requesting changes to (1) the Landfill property boundary, (2) the zone of discharge, (3) the groundwater monitoring network, and (4) the landfill gas monitoring network. The proposed landfill property boundary, zone of discharge, and groundwater monitoring network are shown in Figure 2. The new Landfill property boundary will extend approximately 300 feet from the current west, south, and east property boundaries. The new zone of discharge will extend approximately 100 feet from the edge waste along the western, northwestern, and southwestern landfill boundaries. The new monitoring well network will consist of four background wells (MW-1R, MW-3, MW-2, MW-7), one intermediate well (MW-6), three water-level-only wells (MW-4R, MW-5, and MW-16), and seven compliance monitoring wells (MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-17). The existing detection wells (MW-AA, MW-B, MW-C, MW-D, MW-E, MW-8R, and MW-9) will be removed from the monitoring network and abandoned. The frequency of compliance monitoring will remain unchanged. Semiannual sampling is appropriate since the distance groundwater will travel in six months (38 feet) is less than the distance between the edge of waste and the new compliance monitoring well locations (100 feet).

The permit modification application will be submitted to the DEP following execution of the Lease Expansion agreement between the County and Forestry. ~~The DEP has verbally agreed to grant an extension of 120 days (the original 30-day extension provided for in Paragraph 10 of the Consent Agreement plus 90 days as requested by Forestry to execute the expansion agreement). Therefore, pending written approval of the requested time extension, it is anticipated that the permit modification application will be submitted to the DEP no later than May 2006.~~ Until such time as the modification application is approved, the County will continue to comply with the requirements of the current permit.

5.0 REFERENCES

Brooks, H.K., 1981. *Guide to the Physiographic Divisions of Florida.* Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida.

Fetter C.W., 2001. *Applied Hydrogeology – 4th Edition.* Prentice Hall. 66-204

TABLES

TABLE 1
CITRUS COUNTY CENTRAL LANDFILL
WELL CONSTRUCTION DETAILS

Well Name	Date Installed	Top of Casing Elevation (Ft. NGVD)	Ground Elevation (Ft. NGVD)	Total Depth (Ft. BLS)	Total Depth (Ft. BTOC)	Screen Details					Filter Pack (Silica Sand)	Well Location	
						Length (Ft.)	Depth (Ft. BLS)		Elevation (Ft. NGVD)			Northing (Ft.)	Easting (Ft.)
							Top	Bottom	Top	Bottom			
MW-AA[1]	NR	106.11	104.7	116	NR	10	106	116	0.1	-9.9	NR	NR	NR
MW-B[1]	NR	111.94	111.1	128	NR	20	108	128	3.9	-16.1	NR	NR	NR
MW-C[1]	NR	115.18	114.1	199	NR	OH	192	199	-76.8	-83.8	NR	NR	NR
MW-D[1]	NR	109.77	108.4	208	NR	OH	188	208	-78.2	-98.2	NR	NR	NR
MW-E[1]	NR	109.88	107.0	118	NR	20	98	118	11.9	-8.1	NR	NR	NR
MW-1R[1]	NR	118.08	115.3	125	NR	10	115	125	3.1	-6.9	NR	NR	NR
MW-2[1]	NR	136.29	133.5	161	NR	15	146	161	-9.7	-24.7	NR	NR	NR
MW-3[1]	NR	120.47	119.7	119	NR	15	104	119	16.5	1.5	NR	NR	NR
MW-4R	11/9/05	119.33	119.71	125.0	124.6	20	105.0	125.0	14.7	-5.3	NR	1642794.06	515836.95
MW-5[1]	NR	121.14	118.6	120	NR	10	110	120	11.1	1.1	NR	NR	NR
MW-6[1]	NR	118.48	115.8	122	NR	10	112	122	6.5	-3.5	NR	NR	NR
MW-7[1]	NR	128.66	NR	137	NR	20	117	137	11.7	-8.3	NR	NR	NR
MW-8R[1]	NR	118.13	NR	128	NR	20	108	128	10.1	-9.9	NR	NR	NR
MW-9[1]	NR	113.55	NR	121	NR	20	101	121	12.6	-7.5	NR	NR	NR
MW-10	11/2/05	113.51	114.05	120.5	118.6	20	100.5	120.5	14.9	-5.1	20/30	1643658.80	514808.73
MW-11	11/2/05	104.83	105.17	112.0	111.5	20	92.0	112.0	13.3	-6.7	Gravel	1643432.56	514300.80
MW-12	11/2/05	103.49	103.98	110.0	108.8	20	90.0	110.0	14.7	-5.3	20/30	1642972.51	514307.73
MW-13	11/10/05	112.04	112.55	120.0	118.8	20	100.0	120.0	13.2	-6.8	20/30	1642402.16	514320.79
MW-14	11/10/05	108.63	109.09	116.0	115.9	20	96.0	116.0	12.7	-7.3	20/30	1641950.73	514332.03
MW-15	11/10/05	123.71	124.15	130.0	129.5	20	110.0	130.0	14.2	-5.8	20/30	1641702.99	514864.91
MW-16	10/31/05	119.81	120.22	127.0	126.5	20	107.0	127.0	13.3	-6.7	20/30	1642141.07	515781.53
MW-17	11/3/05	110.98	111.50	118.0	117.6	20	98.0	118.0	13.4	-6.6	20/30	1641705.53	515647.01

BLS = Below Land Surface

BTOC = Below Top of Casing

NR = Not recorded

Ft. = Feet

NGVD = National Geodetic Vertical Datum

OH = Open Hole

Notes:

[1] Well Construction and Elevation information obtained from the Two-Year Groundwater Monitoring Report for Years 1997 and 1998, prepared by CH2MHill

Elevation and survey data complied from a Nature Coast Land Surveying, Inc. survey dated December 16, 2005.

All wells constructed with 2" PVC risers and screens.

Screens are .01" slot size.

TABLE 2
CITRUS COUNTY CENTRAL LANDFILL
INITIAL GROUNDWATER SAMPLING PARAMETERS

Field Parameters	Laboratory Parameters
Static Water Levels	Total Ammonia – N
Specific Conductivity	Chlorides
Temperature	Iron
Ph	Mercury
Dissolved Oxygen	Nitrate
Turbidity	Sodium
Colors and Sheens (by observation)	Total Dissolved Solids
	Those Parameters listed in 40 CFR Part 258, Appendix I and Appendix II

TABLE 3
CITRUS COUNTY CENTRAL LANDFILL
GROUNDWATER ELEVATION DATA
DECEMBER 21, 2005 and JULY 17, 2006

Well Name	Top of Casing Elevation (Ft. NGVD)	Well Screen Elevation (Ft. NGVD)		Depth to Water (Ft.)		Groundwater Elevation (Ft, NGVD)	
		Top*	Bottom*	21-Dec-05	17-Jul-06	21-Dec-05	17-Jun-06
MW-1R	118.25	5.3	-4.8	111.52	112.92	6.73	5.33
MW-2	136.19	-4.8	-24.8	127.35	129.33	8.85	6.86
MW-3	120.43	16.8	1.8	111.98	114.16	8.46	6.27
MW-4R	119.33	14.33	-5.67	110.85	112.84	8.48	6.49
MW-5	121.13	8.7	-1.3	112.63	114.62	8.50	6.51
MW-6	118.48	7.8	-2.2	109.98	111.96	8.51	6.52
MW-7	128.58	9.6	-10.4	120.13	122.13	8.46	6.45
MW-8R	118.08	17.1	-3	111.50	112.79	6.58	5.29
MW-9	113.46	11.8	-8.3	107.05	108.28	6.41	5.18
MW-10	113.51	14.9	-5.1	105.67	107.45	7.84	6.06
MW-11	104.83	13.3	-6.7	98.46	99.68	6.37	5.15
MW-12	103.49	14.7	-5.3	97.14	98.66	6.35	4.83
MW-13	112.04	13.2	-6.8	105.39	106.69	6.65	5.35
MW-14	108.63	12.7	-7.3	102.26	103.48	6.37	5.15
MW-15	123.71	14.2	-5.8	116.73	118.14	6.98	5.57
MW-16	119.81	13.3	-6.7	113.14	114.44	6.67	5.37
MW-17	110.98	13.4	-6.6	104.43	105.69	6.55	5.29
MW-AA	106.07	-0.4	-10.4	99.60	100.88	6.47	5.19
MW-B	113.46	5.5	-14.5	106.69	108.00	6.77	5.46
MW-C+	115.44	-85	-92	108.95	110.14	6.49	5.30
MW-D+	109.83	-81	-101	103.37	104.65	6.47	5.18
MW-E	109.51	12.6	-7.3	103.06	104.20	6.46	5.31

NGVD = National Geodetic Vertical Datum

Ft. = Feet

+ Well completed as open borehole

Table 4
Citrus County Central Landfill
Hydraulic Data Summary

A: Slug Test Results / Hvorslev Method

Well ID	r^2 (ft)	L_e (ft)	R (ft)	t_{37} (min)	K (ft/min)	K (ft/day)
MW-10	0.01	14.82	0.08	0.27	4.6E-03	6.60
MW-11	0.01	13.72	0.08	0.05	2.8E-02	39.91
MW-12	0.01	13.06	0.08	0.05	2.6E-02	37.43
MW-13	0.01	14.8	0.08	0.32	3.8E-03	5.53
MW-14	0.01	13.86	0.08	0.07	1.8E-02	25.74
MW-15	0.01	13.56	0.08	0.10	1.3E-02	19.09
MW-16	0.01	13.96	0.08	0.18	6.9E-03	10.00
MW-17	0.01	13.64	0.08	0.05	2.8E-02	40.04

notes:
Hydraulic Conductivity (K) calculation based on Hvorslev method; $K = r^2 \ln(L_e/R)/2L_e t_{37}$ (Fetter 2001)
r = the radius of the well casing
R = the radius of the well screen
L_e = length of the well screen (includes 2 ft (estimate) gravel pack zone)
t_{37} = time it takes for the water level to rise or fall to 37% of the initial change; from slug test data (attached)

B: Hydraulic Gradient

Transect	Hydraulic Gradient (ft/ft) December 21, 2005
A-A'	6.60E-04
B-B'	2.10E-04
C-C'	**1.32E-03**

Hydraulic gradients determined from groundwater contour map (Figure 3). Calculations are shown on Figure 4.

C: Flow Rates

Well ID	Hydraulic Gradient (ft/ft) [1]	K (ft/day) [2]	n_e, Effective Porosity (%) [3]	Average Linear Velocity (ft/day) [4]	Travel Distance (ft) in 6 months (180 days) [5]
MW-10	1.32E-03	6.60	0.25	3.5E-02	6.27
MW-11	1.32E-03	39.91	0.25	2.1E-01	37.93
MW-12	1.32E-03	37.43	0.25	2.0E-01	35.57
MW-13	1.32E-03	5.53	0.25	2.9E-02	5.25
MW-14	1.32E-03	25.74	0.25	1.4E-01	24.47
MW-15	1.32E-03	19.09	0.25	1.0E-01	18.15
MW-16	1.32E-03	10.00	0.25	5.3E-02	9.51
MW-17	1.32E-03	40.04	0.25	2.1E-01	38.1

Notes:
1 = Largest hydraulic gradient determined during period listed above (see item shown in bold in Table B) to yield most conservative velocity value.
2 = K in ft/day (see Table A above)
3 = Effective porosity for limestone/sand aquifer matrix based on porosity values provided in Table 3.4 (Fetter 2001), calculations based on low range of porosity for sand provided (20-35%)
4 = Average groundwater velocity (Flow rate in ft/day); from Fetter (2001), $V_x = -K/n_e (dh/dl)$, where V_x = Velocity in X direction, K = conductivity, n_e = effective porosity, and dh/dl = hydraulic gradient.
5 = Distance groundwater will travel in six months = average linear velocity (ft/day) times 180 days = feet groundwater travels in six months

References:
Fetter, C. W. 2001. Applied Hydrogeology - 4th ed. Prentice Hall. 66-204

Table 5
Citrus County Central Landfill
Hydraulic Data Summary for July 2006

17-Jul-06

A: Slug Test Results / Hvorslev Method

Well ID	r^2 (ft)	L_e (ft)	R (ft)	t_{37} (min)	K (ft/min)	K (ft/day)
MW-10	0.01	14.82	0.08	0.27	4.6E-03	6.60
MW-11	0.01	13.72	0.08	0.05	2.8E-02	39.91
MW-12	0.01	13.06	0.08	0.05	2.6E-02	37.43
MW-13	0.01	14.8	0.08	0.32	3.8E-03	5.53
MW-14	0.01	13.86	0.08	0.07	1.8E-02	25.74
MW-15	0.01	13.56	0.08	0.10	1.3E-02	19.09
MW-16	0.01	13.96	0.08	0.18	6.9E-03	10.00
MW-17	0.01	13.64	0.08	0.05	2.8E-02	40.04

notes:

Hydraulic Conductivity (K) calculation based on Hvorslev method; $K = r^2 \ln(L_e/R)/2L_e t_{37}$ (Fetter 2001)

r = the radius of the well casing

R = the radius of the well screen

L_e = length of the well screen (includes 2 ft (estimate) gravel pack zone)

t_{37} = time it takes for the water level to rise or fall to 37% of the initial change; from slug test data (attached)

B: Hydraulic Gradient

Transect	Hydraulic Gradient (ft/ft) July 17, 2006
A-A'	2.40E-04
B-B'	3.70E-04
C-C'	**6.80E-04**

Hydraulic gradients determined from groundwater contour map (Figure 3). Calculations are shown on Figure 4.

C: Flow Rates

Well ID	Hydraulic Gradient (ft/ft) [1]	K (ft/day) [2]	n_e, Effective Porosity (%) [3]	Average Linear Velocity (ft/day) [4]	Travel Distance (ft) in 6 months (180 days) [5]
MW-10	6.80E-04	6.60	0.25	1.8E-02	3.23
MW-11	6.80E-04	39.91	0.25	1.1E-01	19.54
MW-12	6.80E-04	37.43	0.25	1.0E-01	18.33
MW-13	6.80E-04	5.53	0.25	1.5E-02	2.71
MW-14	6.80E-04	25.74	0.25	7.0E-02	12.60
MW-15	6.80E-04	19.09	0.25	5.2E-02	9.35
MW-16	6.80E-04	10.00	0.25	2.7E-02	4.90
MW-17	6.80E-04	40.04	0.25	1.1E-01	19.6

Notes:

1 = Largest hydraulic gradient determined during period listed above (see item shown in bold in Table B) to yield most conservative velocity value.

2 = K in ft/day (see Table A above)

3 = Effective porosity for limestone/sand aquifer matrix based on porosity values provided in Table 3.4 (Fetter 2001), calculations based on low range of porosity for sand provided (20-35%)

4 = Average groundwater velocity (Flow rate in ft/day); from Fetter (2001), $V_x = - K/n_e (dh/dl)$, where V_x = Velocity in X direction, K = conductivity, n_e = effective porosity, and dh/dl = hydraulic gradient.

5 = Distance groundwater will travel in six months = average linear velocity (ft/day) times 180 days = feet groundwater travels in six months

References:

Fetter, C. W. 2001. Applied Hydrogeology - 4th ed. Prentice Hall. 66-204

Table 6
Citrus County Central Landfill
Hydrualic Data Complied for the Histogram (Figure 7)

Well ID	Hydraulic Gradient (ft/ft)	K (ft/day)	n_e, Effective Porosity (%)	Average Linear Velocity (ft/day)	Travel Distance (ft) in 6 months (180 days)
21-Dec-05					
Transect A-A'					
MW-10	6.60E-04	6.60	0.25	1.7E-02	3.13
MW-11	6.60E-04	39.91	0.25	1.1E-01	18.97
MW-12	6.60E-04	37.43	0.25	9.9E-02	17.79
MW-13	6.60E-04	5.53	0.25	1.5E-02	2.63
MW-14	6.60E-04	25.74	0.25	6.8E-02	12.23
MW-15	6.60E-04	19.09	0.25	5.0E-02	9.07
MW-16	6.60E-04	10.00	0.25	2.6E-02	4.75
MW-17	6.60E-04	40.04	0.25	1.1E-01	19.0
Transect B-B'					
MW-10	2.10E-04	6.60	0.25	5.5E-03	1.00
MW-11	2.10E-04	39.91	0.25	3.4E-02	6.03
MW-12	2.10E-04	37.43	0.25	3.1E-02	5.66
MW-13	2.10E-04	5.53	0.25	4.6E-03	0.84
MW-14	2.10E-04	25.74	0.25	2.2E-02	3.89
MW-15	2.10E-04	19.09	0.25	1.6E-02	2.89
MW-16	2.10E-04	10.00	0.25	8.4E-03	1.51
MW-17	2.10E-04	40.04	0.25	3.4E-02	6.1
Transect C-C'					
MW-10	1.32E-03	6.60	0.25	3.5E-02	6.27
MW-11	1.32E-03	39.91	0.25	2.1E-01	37.93
MW-12	1.32E-03	37.43	0.25	2.0E-01	35.57
MW-13	1.32E-03	5.53	0.25	2.9E-02	5.25
MW-14	1.32E-03	25.74	0.25	1.4E-01	24.47
MW-15	1.32E-03	19.09	0.25	1.0E-01	18.15
MW-16	1.32E-03	10.00	0.25	5.3E-02	9.51
MW-17	1.32E-03	40.04	0.25	2.1E-01	38.1

Well ID	Hydraulic Gradient (ft/ft)	K (ft/day)	n_e, Effective Porosity (%)	Average Linear Velocity (ft/day)	Travel Distance (ft) in 6 months (180 days)
17-Jul-06					
Transect A-A'					
MW-10	2.40E-04	6.60	0.25	6.3E-03	1.14
MW-11	2.40E-04	39.91	0.25	3.8E-02	6.90
MW-12	2.40E-04	37.43	0.25	3.6E-02	6.47
MW-13	2.40E-04	5.53	0.25	5.3E-03	0.95
MW-14	2.40E-04	25.74	0.25	2.5E-02	4.45
MW-15	2.40E-04	19.09	0.25	1.8E-02	3.30
MW-16	2.40E-04	10.00	0.25	9.6E-03	1.73
MW-17	2.40E-04	40.04	0.25	3.8E-02	6.9
Transect B-B'					
MW-10	3.70E-04	6.60	0.25	9.8E-03	1.76
MW-11	3.70E-04	39.91	0.25	5.9E-02	10.63
MW-12	3.70E-04	37.43	0.25	5.5E-02	9.97
MW-13	3.70E-04	5.53	0.25	8.2E-03	1.47
MW-14	3.70E-04	25.74	0.25	3.8E-02	6.86
MW-15	3.70E-04	19.09	0.25	2.8E-02	5.09
MW-16	3.70E-04	10.00	0.25	1.5E-02	2.67
MW-17	3.70E-04	40.04	0.25	5.9E-02	10.7
Transect C-C'					
MW-10	6.80E-04	6.60	0.25	1.8E-02	3.23
MW-11	6.80E-04	39.91	0.25	1.1E-01	19.54
MW-12	6.80E-04	37.43	0.25	1.0E-01	18.33
MW-13	6.80E-04	5.53	0.25	1.5E-02	2.71
MW-14	6.80E-04	25.74	0.25	7.0E-02	12.60
MW-15	6.80E-04	19.09	0.25	5.2E-02	9.35
MW-16	6.80E-04	10.00	0.25	2.7E-02	4.90
MW-17	6.80E-04	40.04	0.25	1.1E-01	19.6

FIGURES

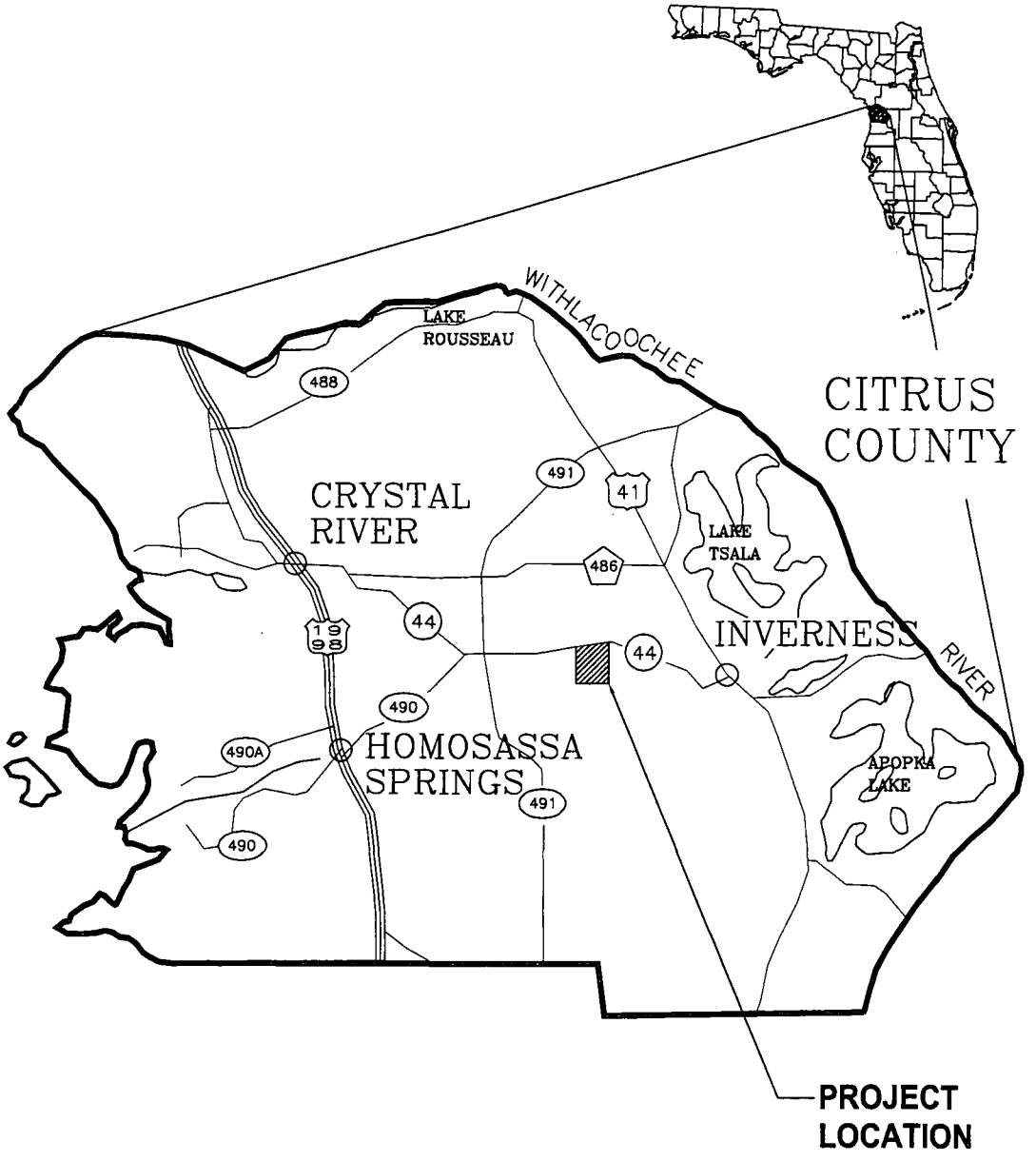


FIGURE 1
SITE LOCATION MAP
CITRUS COUNTY CENTRAL LANDFILL

JONES EDMUNDS

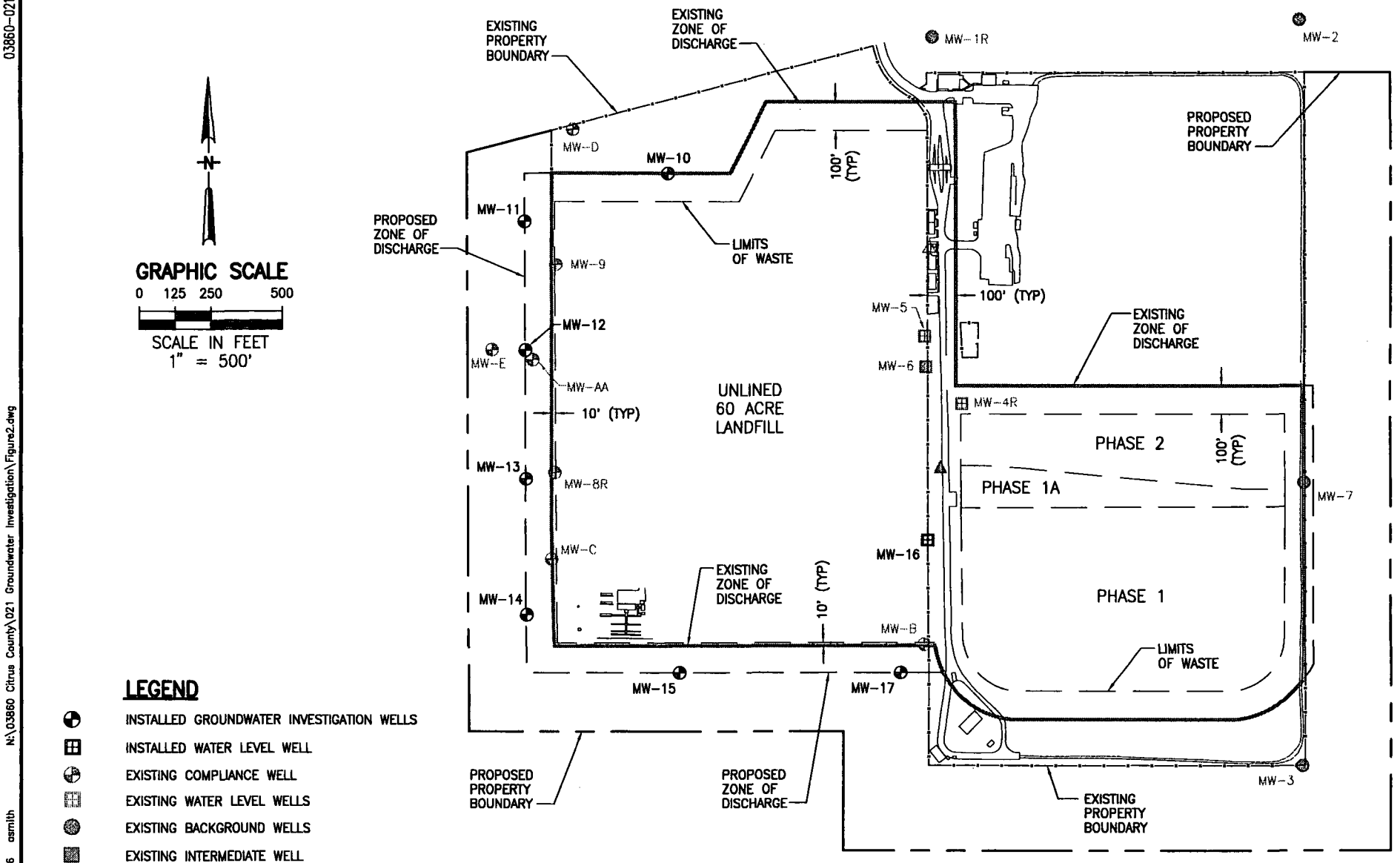


FIGURE 2
SITE PLAN
CITRUS COUNTY CENTRAL LANDFILL

JONES EDMUNDS

03860-021-01
N:\03860 Citrus County\021 Groundwater Investigation\Figure2.dwg
Edited: 12/19/05 10:46 asmith
Plotted: 12/29/05 2:16pm asmith

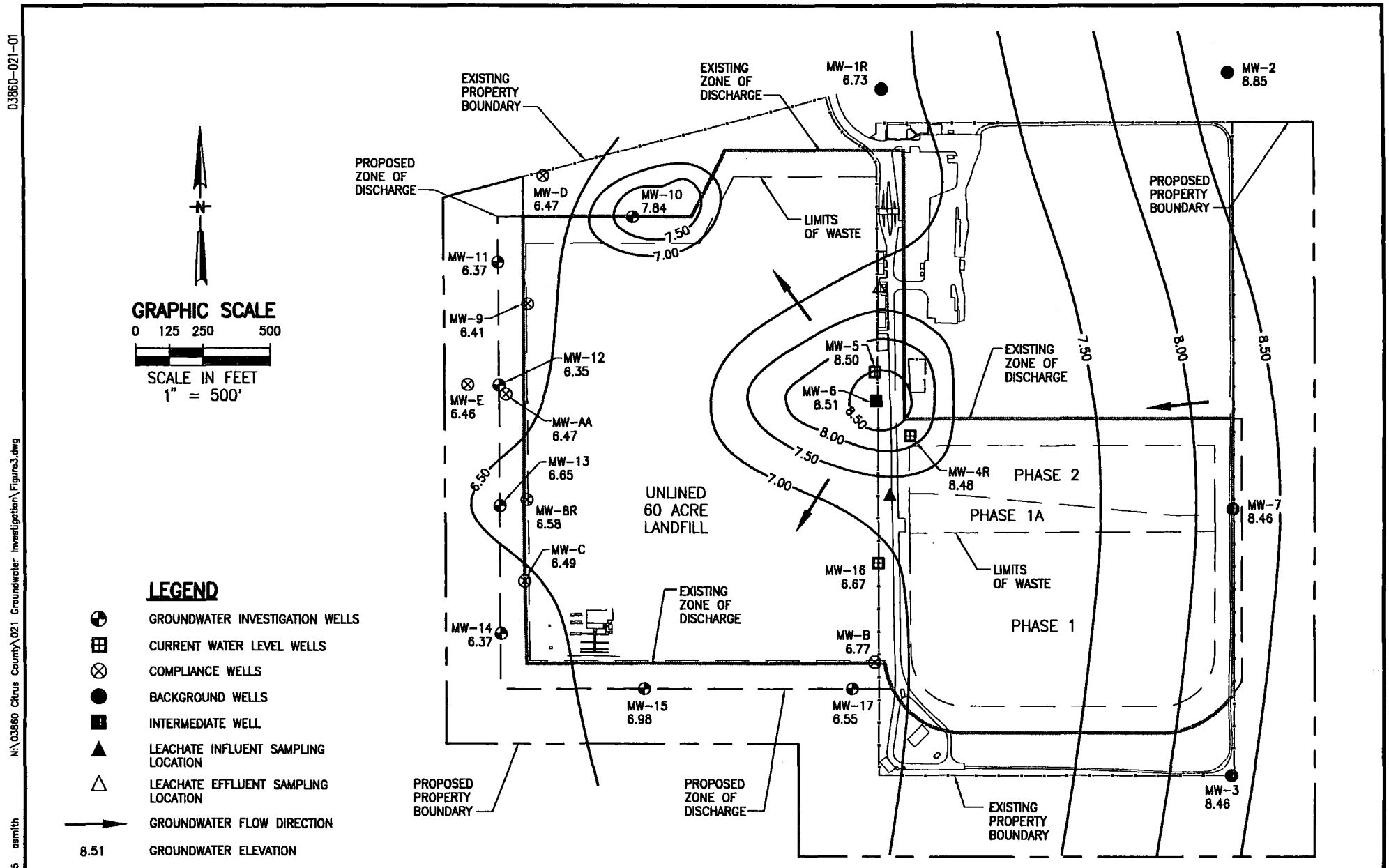


FIGURE 3
GROUNDWATER CONTOUR MAP
DECEMBER 21, 2005
CITRUS COUNTY CENTRAL LANDFILL

JONES EDMUNDS

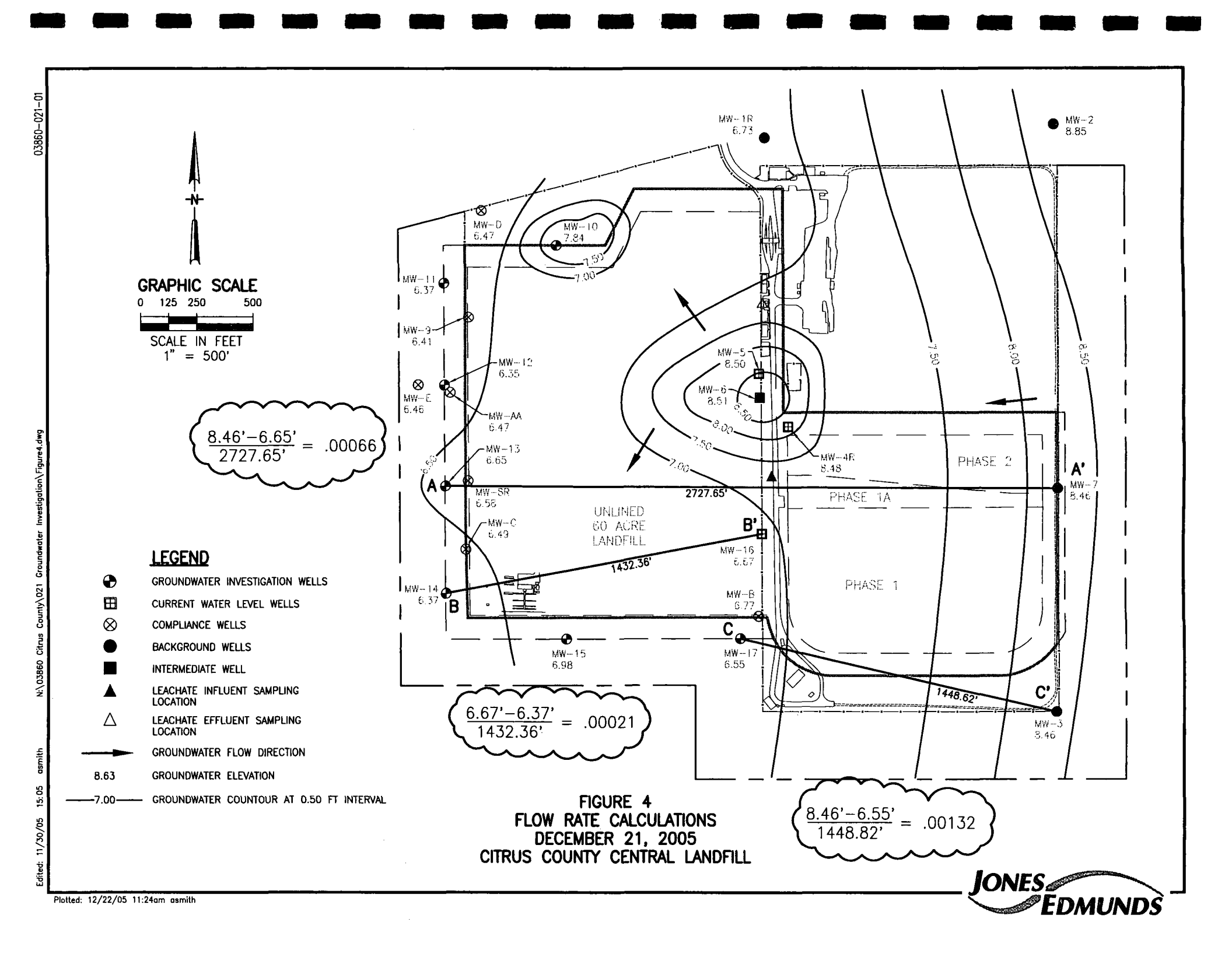
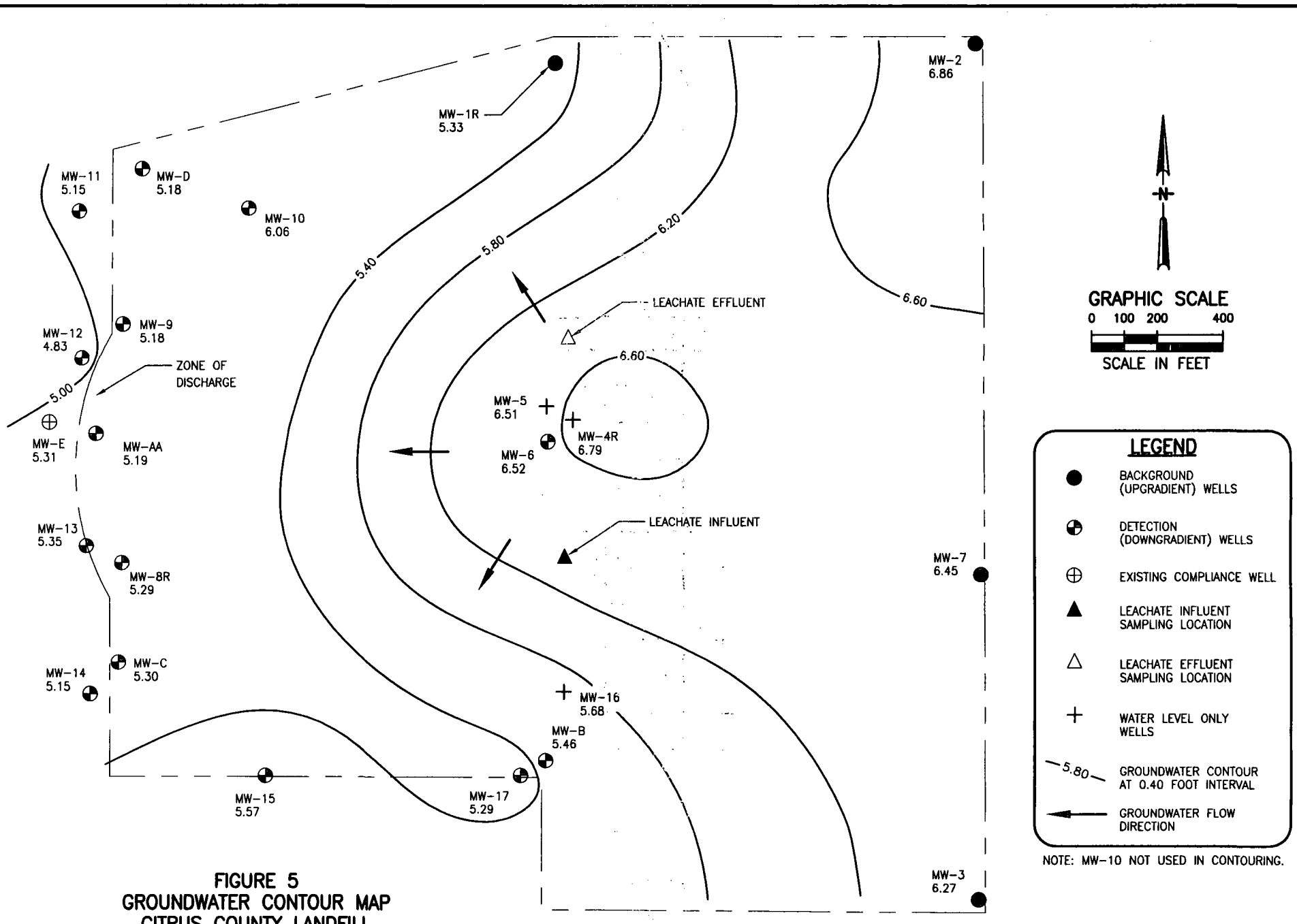


FIGURE 4
FLOW RATE CALCULATIONS
DECEMBER 21, 2005
CITRUS COUNTY CENTRAL LANDFILL

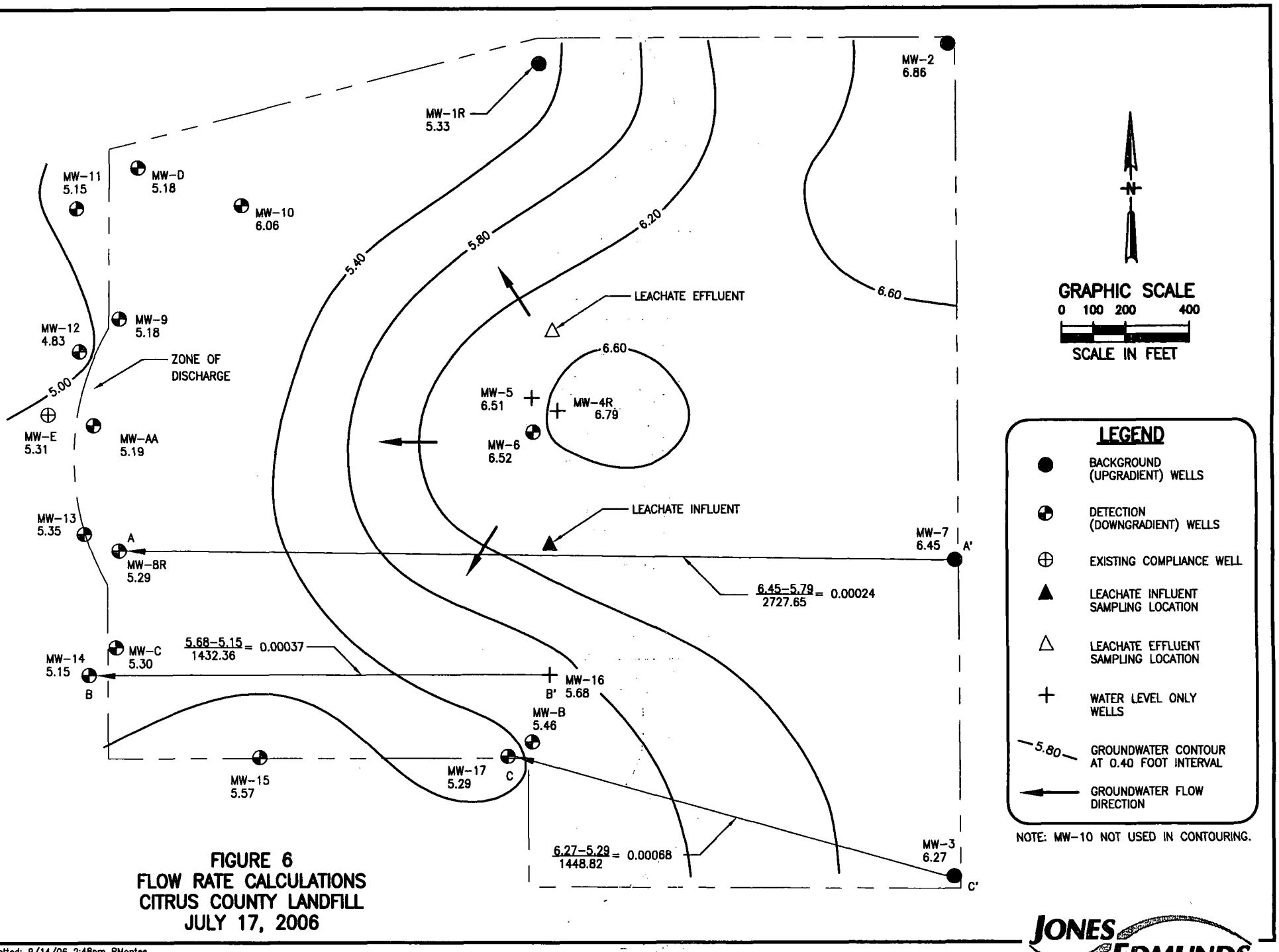
JONES EDMUNDS



NOTE: MW-10 NOT USED IN CONTOURING.

FIGURE 5
GROUNDWATER CONTOUR MAP
CITRUS COUNTY LANDFILL
JULY 17, 2006

JONES EDMUNDS

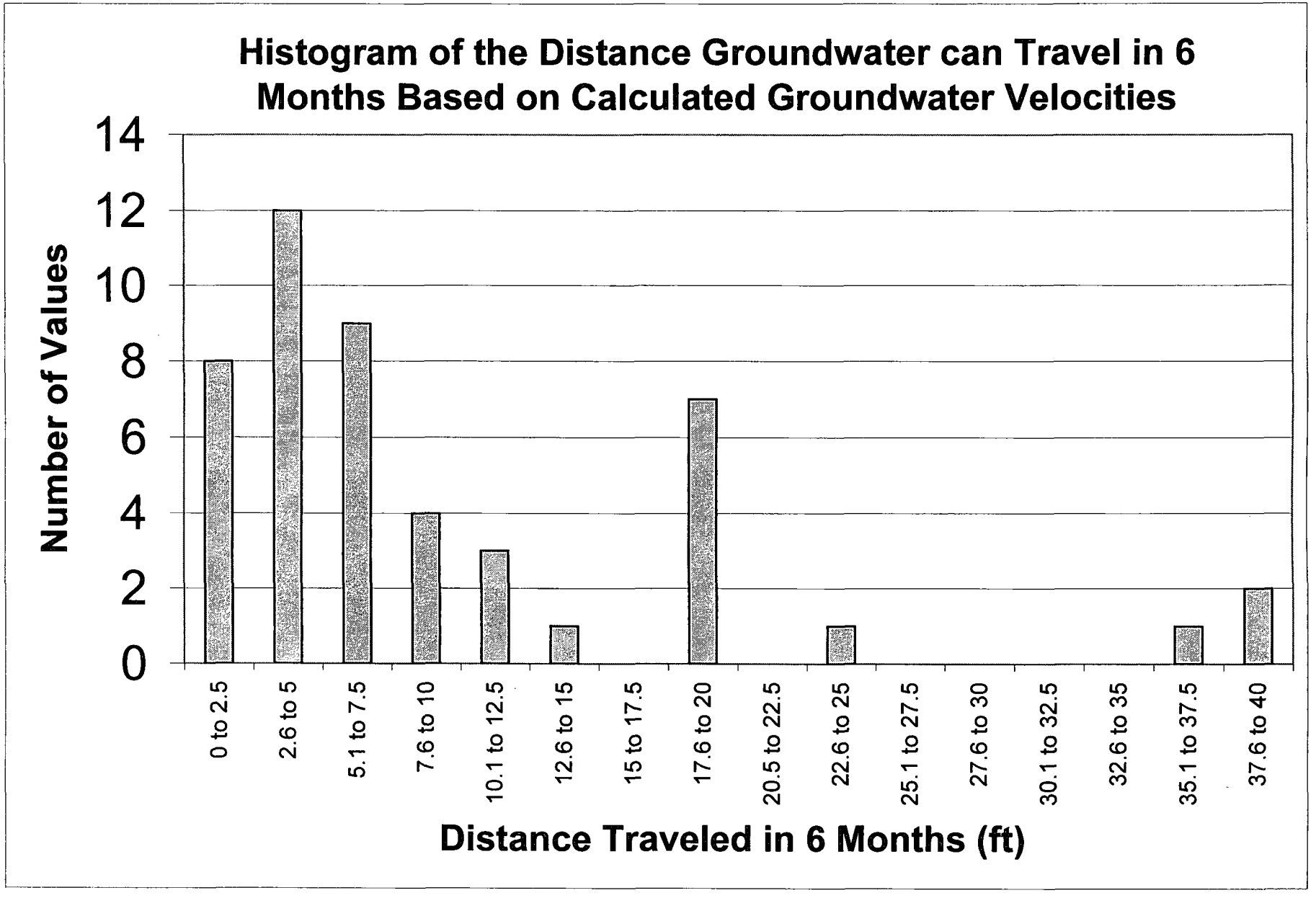


NOTE: MW-10 NOT USED IN CONTOURING.

FIGURE 6
FLOW RATE CALCULATIONS
CITRUS COUNTY LANDFILL
JULY 17, 2006

JONES EDMUNDS

Figure 7
Citrus County Central Landfill



APPENDIX A

PROOF OF SECONDARY EXEMPTION STATUS

SEABURN AND ROBERTSON, INC.

Water Resources Consultants

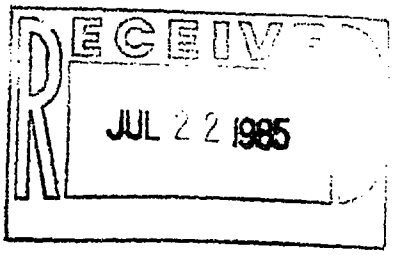
as:
ecutive Square
10 Gray Street
ite 118
Tampa, Florida 33609
ing address:
O. Box 23184
mpa, Florida 33623

(813) 870-2792
(813) 870-2823

ALTON F. ROBERTSON, P.E.
GERALD E. SEABURN, Ph.D., P.E.

ROBERT L. WESTLY, C.P.G.
SUSAN J. METCALFE, C.P.G.

July 16, 1985
PN-83153



Mr. Tom Dick, Director
Environmental Division
Citrus County
P.O. Box U
Lecanto, Fl 32661

Re: Groundwater Monitoring Plan

Dear Tom:

As you requested during our phone conversation on 7-15, I have enclosed three additional copies, for your use, of our proposed groundwater monitoring plan for the active County landfill.

Please keep us advised of the status of our proposal to provide assistance in preparing an operating permit renewal for the landfill. We can proceed as soon as your Board approves the project.

Our best estimate of the water quality analysis costs for one more sampling during the current fiscal year and four quarterly samplings during fiscal year 85-86, is between $4,650 and 10,000. The minimum value assumes one comprehensive analysis and four minimum analyses. The higher range assumes two comprehensive analyses and three follow-up analyses with more than minimum requirements.

If there is anything else for which we can assist you, please let me know.

Yours truly,

SEABURN AND ROBERTSON, INC.
Water Resources Consultants

Susie Metcalfe

Susan J. Metcalfe, CPG
Vice President

SJM/mlr

CITRUS COUNTY LANDFILL

MONITORING PLAN

Prepared For

CITRUS COUNTY PUBLIC WORKS DIVISION

Prepared By

SEABURN AND ROBERTSON, INC.
Water Resources Consultants
Tampa, Florida

June 1985

CITRUS COUNTY LANDFILL
MONITORING PLAN

INTRODUCTION

Purpose and Scope

This report was prepared by Seaburn and Robertson, Inc., for the Citrus County Public Works Division and is submitted to the Florida Department of Environmental Regulation (FDER) as part of of an application for approval of a groundwater monitoring plan for the Citrus County Landfill. This plan is a modification of the existing groundwater monitoring program conducted since 1975. The plan and its supporting information is submitted in compliance with the requirements of the Florida Administrative Code (FAC) Chapter 17-4.245. This report is the result of research and interpretation of existing data as well as data collected from investigations performed by Seaburn and Robertson, Inc. at the landfill and surrounding areas.

Location

The Citrus County Landfill, as shown in Figure 1, is located in the center of Citrus County near Lecanto. The landfill covers approximately 60 acres in the southeast quarter of Section 1, Township 19 South, Range 18 East at latitude 28 51'08", longitude 82 26'38". The landfill is bordered on the east, west and south

MONITORING PLAN

Monitor Well Locations

A review of the existing monitoring well system indicated that only one of them was deep enough to reach the water table during the dry season. Therefore, two new monitor wells were set at appropriate locations, using state of the art methods and materials. The existing landfill supply well was also incorporated into the monitoring plan.

Selection of appropriate locations and sampling depths for the wells is one of the most critical aspects of developing a groundwater monitoring plan. One background well (B) was installed near the southeast corner of the landfill property boundary. This is upgradient of all waste disposal cells and facilities and will monitor the top 20 feet of the sands of the water table. A compliance well (A) was installed as close as possible to the downgradient property boundary approximately in the center of the landfill's west property line. The upper 30 feet of the saturated zone will be monitored in this well which is screened in limestone. The existing monitor well (C) is on the downgradient property boundary near the southwest corner of the landfill. The existing supply well (D) is located near the northwest corner of the landfill, both of these wells will also

monitor the upper Floridan aquifer. The locations of all monitor wells are shown on Figure 3.

Well Construction

Each of the new monitor wells was constructed with four-inch threaded flush joint Schedule 40 PVC with matching 0.01-inch slotted screen. Boreholes at both locations were drilled by the rotary method with thin well-mixed bentonite drilling fluid. During installation of the well and performance of the earlier standard penetration test boring at Site A on the west side of the landfill, colorless gas with a distinct organic or "pesticide" odor was detected in the upper 25 feet of sands. No gas venting was observed after the surface casing was placed. No odor was detected when the borehole was open to sands at levels beneath the fill nor in the limestone interval. Due to the thickness of unsaturated unconsolidated sediments at both sites, it was necessary to install eight-inch PVC surface casing to keep the boreholes open. A 10-inch hole was drilled and then the annulus grouted around the eight-inch casing. Surface casing was installed to 94 feet below land surface at Site A and to 55 feet below land surface at Site B. The well at Site A has a total depth of 135 feet with the bottom 30 feet screened. The well at Site B has a total depth of 128 feet with the bottom 20 feet screen. Both wells were sand packed with 20-30 silica sand to a point above the screened section. Both wells were then grouted

to the inside of the eight-inch surface casing. Each of the wells has approximately two feet of stick-up set into a surface cement pad. One-half horsepower Red Jacket submersible pumps were then installed in each well and also in the existing monitor well, with the intakes set at approximately 123 feet below land surface. The return pipes are one-inch threaded PVC each discharging through a stainless steel valve and spigot. A benchmark has been established at each well for elevation control. Construction details for monitor Wells A and B are shown in Figures 12 and 13, respectively.

Wells were developed first by low pressure airlift and then by pumping with the submersible pumps. Well B was then developed by surging. This is accomplished by putting a rubber "surge block" on the drill stem and moving it up and down to create a plunging effect in the well. This helps to move most of the fine sediment out of the well and leaves the rest in suspension so that it may be pumped out.

Sampling Procedure

Each well will be sampled by Seaburn and Robertson, Inc. personnel for the first year of monitoring. Prior to each sampling, a depth to water measurement will be taken with a weighted steel tape. The water level will then be recorded and related to the reference datum.

APPENDIX B

FORESTRY SITE USE PERMIT

Permit# 239

STATE OF FLORIDA
DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES
DIVISION OF FORESTRY

STATE FOREST USE PERMIT

CITRUS COUNTY SOLID WASTE MANAGEMENT DIVISION
NAME OF GROUP/INDIVIDUAL

has permission to use an area 300 linear feet from the boundary of the Citrus landfill
FACILITIES AND LOCATION
IN SECTIONS 1, 6 AND 12 OF TOWNSHIP 19 SOUTH, RANGE 18 EAST on the Withlacoochee State Forest. See attached maps:
From: October 5, 2005 **To: January 5, 2006**

ARRIVAL DATE DEPARTURE DATE

Number in Group:

Person in charge of group: Susan Metcalfe

Address: P. O. Box 340

Lecanto, Florida 34460

Phone: 352-527-7670

Fax/Email: 352-527-7672

Special Arrangement of Accommodations: **All Division of Forestry and Wildlife Management rules and regulations apply.** Please call (352) 754-6896 to acquire or cancel your permit. For emergencies call our 24 hour Fire Dispatch office at (352) 754-6777 choose option 4.

Citrus County Solid Waste Management division has permission to access the Withlacoochee State Forest for the purpose of installing and monitoring 18 gas and ground water monitoring wells adjacent To the Citrus County landfill facility. Prior to installation of the ground water monitoring wells the Citrus County Solid Waste Management Division should notify the Division so a trained Archeological Monitor may be on site during drilling operations. Contact Colleen Werner at 352-754-6777.

The person or group granted this permit will be responsible for any damages to the facilities and /or furnishings as a result of their use of these facilities. Use all State Forest lands and facilities at your own
risk.

Keith G. Mousel October 5, 2005

State Forest Officer Date

Distribution: * RVC Permit Book; *W-9; W-16; W-17; Park Ranger: ; Volunteer File

C:\Documents and Settings\mouselk\Local Settings\Temporary Internet Files\OLK209\General Use Permit..doc

Citrus Landfill
Special Use Permit Map

Citrus sublease expansion1.shp
Dof_boundaries_outline.shp

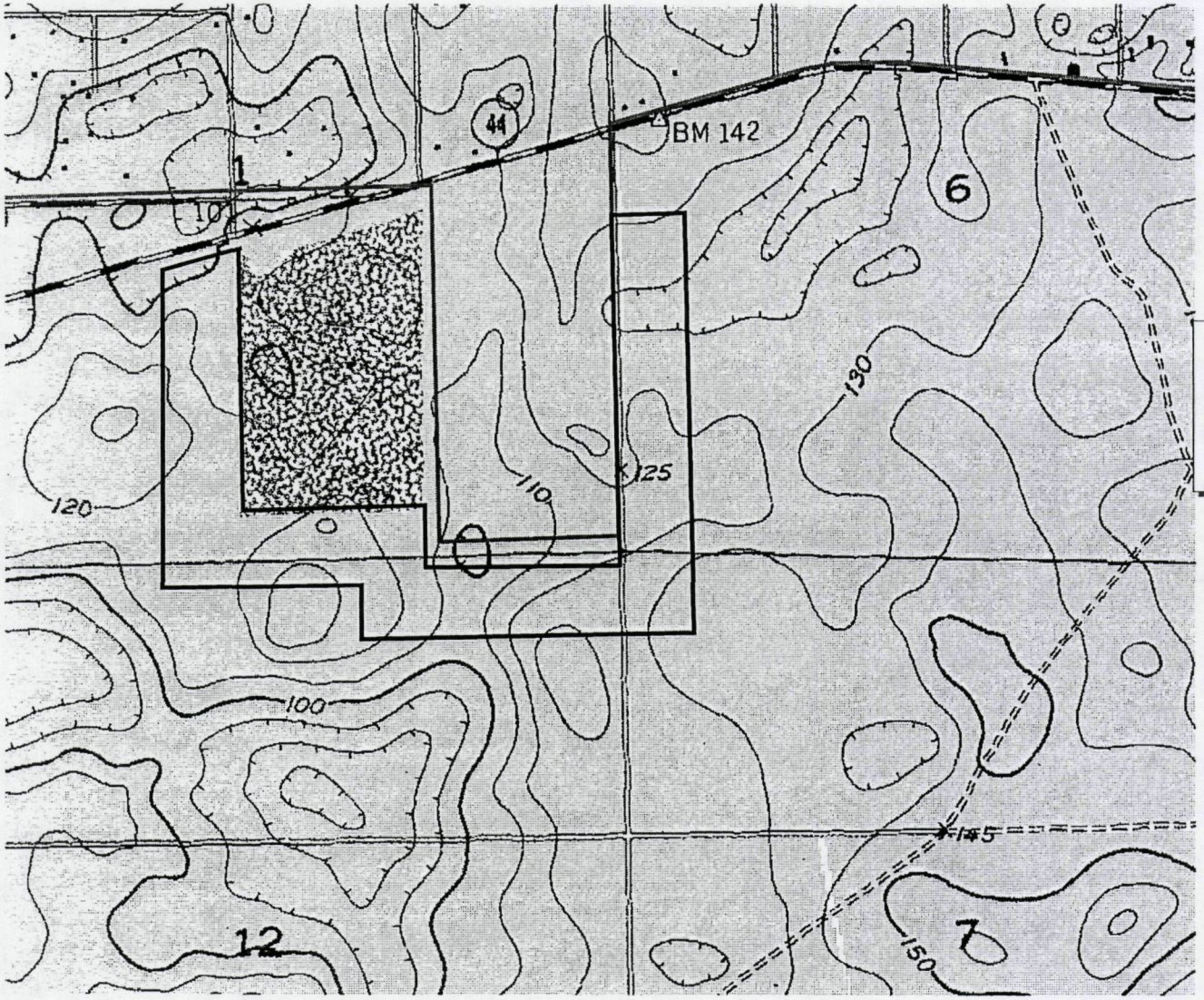
N
W E

Section 1, 6, 12, Township 19 South, Range 18 east
Citrus County, Florida
Lecanto NW Quad

"This map is the product of the Department of Agriculture and Consumer Services, Division of Forestry. This map is for internal uses only and was produced with the intent of internal field communication, fire control, or forest land management. This map is not a parcel map (cadastral), nor is it a legal survey. There are no warranties made as to the fitness of this map for any unlisted purpose or reproduction at other than the original scale. Furthermore, no warranties, expressed or implied are provided for the data therein, its use, or its interpretation."

0.5 0 0.5 1 Miles

Citrus Landfill
Special Use Permit Map



"This map is the product of the Department of Agriculture and Consumer Services, Division of Forestry. This map is for internal uses only and was produced with the intent of internal field communication, fire control, or forest land management. This map is not a parcel map (cadastral), nor is it a legal survey. There are no warranties made as to the fitness of this map for any unlisted purpose or reproduction at other than the original scale. Furthermore, no warranties, expressed or implied are provided for the data therein, its use, or its interpretation."

Section 1, 6, 12, Township 19 South, Range 18 east
Citrus County, Florida
Lecanto NW Quad

Citrus sublease expansion1.shp
Dof_boundaries_outline.shp

N
W E
S

0.5 0 0.5 1 Miles

APPENDIX C

ARCHAEOLOGICAL MONITORING REPORT

ARCHAEOLOGICAL MONITORING RESULTS/LETTER OF TRANSMISSION

Date of this form 10/24/05

Name of Park/Management Area Withlacoochee St. Forest County Citrus

Project Name/Activities Monitoring Wells near Citrus Co. Landfill, DHR Project 2005-100

Project Undertaken Because of X Compliance Review Letter or because of ___ Matrix (check appropriate one)

Archaeological Monitor(s) Colleen Werner

Large Scale Plans of Site & Project attached? No (yes or no) COPY

REQUIRED: Copy of USGS Map (other maps if applicable) indicating precise project location attached Lecanto
USGS Mapname & Date

Section, Township, Range 1, 19S, 19E

Were Artifacts Encountered? ____ **Yes** X **No**

If yes: 1) DHR notified and permission to proceed obtained? Date and Contact Person_____

2) Florida Master Site File form completed and attached (either an update form or a form for a new site)____ (yes or no)

3) All artifacts must be transmitted to this agency with the appropriate Monitoring Field Sheet unless other arrangements have been made by contacting BAR Collections & Conservation Lab. Date contacted_____

Description and Dates of Monitoring Activities 10-26-05 4 ft Deep X ± 6 inch shovel test was done (using post hole diggers) at the precise location of each proposed Monitoring well site.

Methods Employed:

____Pedestrian Survey ____Shovel Test X Posthole

____Local Informant ____Monitoring Heavy Equipment

____Other (describe)_____

Remarks (use additional sheet if necessary) * see additional Sheet

---

What to send if no artifacts collected:

- ☑ **This completed form**

Project Maps:

- ☑ **USGS 7.5" plot of Project area**
- ☐ **Large scale map with test excavations and negative areas of surface collection plotted**

What to send if artifacts collected:

- ☐ **Florida Master Site File form with site plotted on attached USGS map**
- ☐ **Artifacts properly packaged**
- ☐ **FPS Monitoring Field Sheet(s)**
- ☐ **This completed form**

Project Maps:

- ☐ **USGS 7.5" plot of project area**
- ☐ **Large scale map with test excavations and areas of surface collection plotted**

Please submit completed form along with project maps, and if applicable, site file form, Letter of Transmission and any artifacts to:

Susan Harp
Bureau of Historic Preservation
Division of Historical Resources
R. A. Gray Building
500 S. Bronough St.
Tallahassee, FL 32399-0250

Contact numbers: Bureau of Archaeological Research: (850) 245-6444
For project planning/adequacy – Compliance & Review: (850) 245-6333
For questions concerning forms - Florida Master Site File: (850) 245-6444
For artifact questions – Conservation Lab: (850) 245-6444

original mailed 10-27-05

Additional Monitoring

Remarks section of Archaeological Monitoring Results/Letter of Transmission Form

DHR Project 2005-10074

DHR review had requested a certified monitor be present during the drilling of each well. The drilling would have required two days per well. Due to the lack of potential cultural resources in the area and man power available, the monitor attempted to have the drill rig do a ten foot test pit at each proposed well site. This would have caused the drill rig truck to have to reach each site twice. The rig was continuously getting stuck in the soft sand and the traveling over the area twice would have caused additional harm to the fragile sandhill ground cover plants in the area. The final field decision made was to do four foot deep posthole tests at each well site and screen the soil from these test pits.

...nsmit with artifacts to: Florida Master Site File, Bureau of Archaeological Research, R.A. Gray Building, 500 South Bronough Street, Tallahassee, Florida 32399-0250)

Withlacoochee State Forest
Park Name Citrus Tract

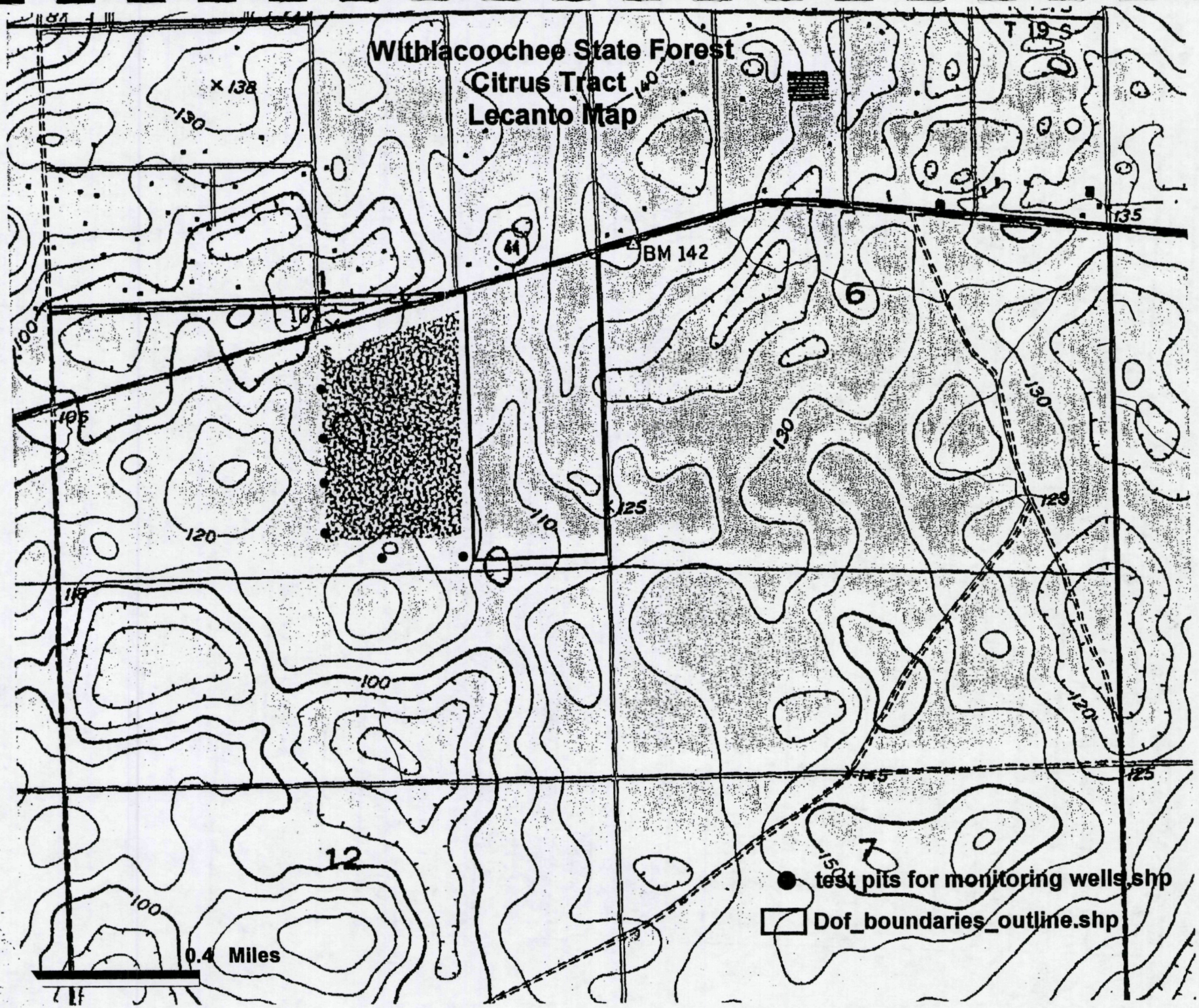
Colleen Werner
Collector's Name

Monitoring wells near Citrus Co. Land fill
Project Name DHR Project 2005-10074

Colleen Werner
Recorder's Name

DATE: 10-26-05

HOLE NUMBER	ARTIFACT BAG NUMBER	SCREENED (YES OR NO)	COMMENTS
1	N/A	NO	10 ft deep hole dug with well drilling Rig; Sterile N28.85393° W082.44318°
2	N/A	Yes	4 ft Deep hole dug with post hole digger; Sterile N 28.85265° W082.44315°
3	N/A	Yes	4 ft. Deep, dug with post hole digger; Sterile N 28.85150° W082.44316°
4	N/A	Yes	4 ft Deep, post hole digger used; Sterile N28.85020° W082.44316°
5	N/A	Yes	4 ft Deep, post hole, Sterile N 28.84956° W082.44149°
6	N/A	Yes	4 ft Deep, used Pot hole Digger; Sterile N 28.84956° W082.43906°


Withlacoochee State Forest
Citrus Tract
Lecanto Map
T 19 S
BM 142
6
7
12
test pits for monitoring wells.shp
Dof_boundaries_outline.shp
0.4 Miles

Werner, Colleen

To: Harp, Susan

Subject: monitoring wells - Citrus co. landfill

Hello Susan,

Six test pits wells were done for the Citrus County Landfill water monitoring wells (DHR Project File No. 2005-10074). All of the test pits were sterile. With DHR's permission, the Citrus Co. Landfill would like to proceed with the drilling of these wells.

Additional archaeological monitoring will be conducted at a later date for gas monitoring wells that are included in the same project. DHR will be contacted with the results before the drilling will proceed for these monitoring wells.

Thank you,
Colleen

Sent 10-26-05
as per S. Harp's request

Werner, Colleen

From: Harp, Susan [SHarp@dos.state.fl.us]
Sent: Thursday, October 27, 2005 7:55 AM
To: Werner, Colleen
Subject: RE: monitoring wells - Citrus co. landfill

Hi, Colleen. Based on the results of the pre-testing, these wells may proceed. Thanks for the excellent coordination!

Susan

-----Original Message-----
From: Werner, Colleen [mailto:wernerc@doacs.state.fl.us]
Sent: Wednesday, October 26, 2005 4:06 PM
To: Harp, Susan
Subject: monitoring wells - Citrus co. landfill

Hello Susan,

Six test pits wells were done for the Citrus County Landfill water monitoring wells (DHR Project File No. 2005-10074). All of the test pits were sterile. With DHR's permission, the Citrus Co. Landfill would like to proceed with the drilling of these wells.

Additional archaeological monitoring will be conducted at a later date for gas monitoring wells that are included in the same project. DHR will be contacted with the results before the drilling will proceed for these monitoring wells.

Thank you,
Colleen

APPENDIX D

DRILLING LOGS

BORING LOG FIELD REPORT

Boring No.: MW-10 Page 1 of 3

Project Name: Citrus County Groundwater Investigation

Boring Completed: 10/25/05, Well Completed: 11/02/05

Project No.: 03860-021-01

JEA Geologist: Adam Smith

Drillers: Diversified - Dade City, Kevin

ELEVATIONS: Ground 114.05 ft. NGVD, Top of Slab _____ ft. NGVD

Drilling/sampling methods: HSA, ~~Mud Rotary~~ / SPT

Top of Casing 113.51 ft. NGVD (NCLS Surveyors)

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
0				FLUSH MOUNT
5				
10			SAND, tan, fine grained	
15			SAME AS ABOVE	
20			SAME AS ABOVE	2" PVC
25			SAND, Light tan, fine grained	
30			SAME AS ABOVE	
35			SAME AS ABOVE	
40			sl. clayey SAND, tan, fine grained	
42				

Notes & additional data/info. (specify if other materials used):

Total well depth = 120.5 feet bls.

Well casing/pipe: Dia.&type = 2-in. Sch. 40 PVC Solid length = 100.5 ft; Screen = 20 ft., 0.010-in.

Sand filter pack = 17 50 lb. Bags; Type= 20/30 silica ;Placed from 98 to 120.5 ftbls (measured).

Annular seal: Type = 30/65 ; Thickness = 1.5ft. ; Placed from 97 to 98 ft.bls (measured).

Grout = 2 94 lb. bags cement grout to surface; Pad = 2x2 ft. concrete Cover = Flush Mount

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-10

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
42				
45			SAME AS ABOVE 45	
50			SAME AS ABOVE 50	
55			SAME AS ABOVE 55	
60			SAME AS ABOVE 60	
65			SAME AS ABOVE 65	2" PVC
70			sl. silty, clayey SAND, lt. tan, fine grained 70	
75			SAME AS ABOVE, tan/orange 75	
80			SAME AS ABOVE 80	
85			NO RETURN 85	
87			87	

Notes & additional data/info. (specify if other materials used):

Added 6 bags (50lb) of Envirogrout.

Added 2 bags of Hole Plug

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-10

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
87				
90	8 14 / 13 17	27	clayey SAND, lt tan mottled tan	2" PVC
95	12 12 / 14 18	26	SAME AS ABOVE	
100	20 20 / 23 16	43	SAME AS ABOVE	
105	12 12 / 15 23	27	SAME AS ABOVE ▽	
110	13 13 / 21 23	34	SAME AS ABOVE, becomes wet @ 111' bls	
	- - / 23 17	-	ROD SLIPPED 1' SAME AS ABOVE, wet	
115				
120			sl. clayey sand, tan, mottled dk & lt tan, clean, wet BORING TERMINATED @ 121' bls	
125				
130				
132				

Notes & additional data/info. (specify if other materials used):

PTW = 105.5' bls on 10/26/05

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-11 | Page 1 of 3

Project Name: Citrus County Groundwater Investigation

Boring Completed: 10/21/05, Well Completed: 11/02/05

Project No.: 03860-021-01

JEA Geologist: Adam Smith

Drillers: Diversified - Dade City, Kevin

ELEVATIONS: Ground 105.17 ft. NGVD, Top of Slab _____ ft. NGVD

Drilling/sampling methods: HSA, [redacted] / SPT

Top of Casing 104.83 ft. NGVD (NGLS Surveyors)

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
0				FLUSH MOUNT
5			SAND, lt. tan, Fine grained	
10			SAME AS ABOVE	
15			SAND, tan, Fine grained	
20			Sandy, silty, CLAY, tan mottled orange & brown, dense, stiff w/ limerock frags, white	
25			Increasing limerock fragments, hard, possibly dolotemized	2" PVC
30			SAME AS ABOVE, limestone / dolostone, brown	
35			SAME AS ABOVE	
40			SAME AS ABOVE	
42				

Notes & additional data/info. (specify if other materials used):

Total well depth = 111.5 feet bls.

Well casing/pipe: Dia.&type = 2-in. Sch. 40 PVC Solid length = 91.5 ft; Screen = 20 ft., 0.010-in.

Sand filter pack = 17 50 lb. Bags; Type= 20/30 silica ;Placed from 81.5 to 111.5 ftbls (measured).

Annular seal: Type = BENTONITE ; Thickness = 4 ft. ; Placed from 77.5 to 81.5 ft.bls (measured).

Grout = 2 94 lb. bags cement grout to surface; Pad = 2x2 ft. concrete Cover = Flush Mount

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-11

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM. D1586 per 6"	N	Description of Soil	Well Details
42				
45			sl. sandy silty CLAY, brown w/ common limerock frags, hard, possibly dolotomized, tan / brown	45
50			SAME AS ABOVE	50
55			SAME AS ABOVE	55
60			SAME AS ABOVE	60
65			SAME AS ABOVE	65
70			SAME AS ABOVE	70
75			SAME AS ABOVE	75
80			SAME AS ABOVE	80
85	17 11	22	LIMEROCK, white, varies from soft to hard, dry	85
87	11 10			87

2" PVC

Notes & additional data/info. (specify if other materials used):

DTW @ 98.12 below TOC, MEASURED ON 11/03/05

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-11

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
87				
90	24 20	43	LIMEROCK, buff, medium to hard, w/ sandy clay, tan mottled orange and brown to white sand, fine grained, moist	2" PVC
95	23 28			
	13 9	21	sl. ~~sandy CLAY~~ clayey SAND, white to tan, fine grained, clean, moist, becomes wet @ 96.5' bls	
100	12 12		SAME AS ABOVE	
105			SAME AS ABOVE	
110			SAME AS ABOVE	
115				
120				
125				
130				
132				

Notes & additional data/info. (specify if other materials used):
USED 55 BAGS OF PEA GRAVEL AND 61 BAGS OF RIVER PEBBLES AS FILTER PACK.
USED 4 BAGS OF ENVIROPLUG (50lb) & 6 BAGS OF HOLEPLUG DURING GROUTING.

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-12 Page 1 of 3

Project Name: Citrus County Groundwater Investigation

Boring Completed : 11/02/05, Well Completed: 11/02/05

Project No.: 03860-021-01

JEA Geologist: Adam Smith

Drillers: Diversified - Dade City, Kevin

ELEVATIONS: Ground 103.98 ft. NGVD, Top of Slab _____ ft. NGVD

Drilling/sampling methods: HSA, ~~Mud Rotary~~ / SPT

Top of Casing 103.49 ft. NGVD (NGLS Surveyors)

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details: FLUSH MOUNT
0				
5			SAND, tan, Fine grained	5
10			SAME AS ABOVE	10
15			SAND, tan / orange, clean	15
20			v. sl silty SAND, tan / orange	20
25			v. sl. silty, clayey SAND, tan / orange	25
30			sl. silty clayey SAND, tan / orange	30
35			SAME AS ABOVE	35
40			SAME AS ABOVE	40
42				42

2" PVC

Notes & additional data/info. (specify if other materials used):

Total well depth = 110 feet bls.

Well casing/pipe: Dia.&type = 2-in. Sch. 40 PVC Solid length = 90 ft; Screen = 20 ft., 0.010-in.

Sand filter pack = 20 50 lb. Bags; Type= 20/30 silica ;Placed from 86 to 110 ftbls (measured).

Annular seal: Type = BENTONITE ; Thickness = 6 ft.; Placed from 80 to 86 ft.bls (measured).

Grout = 2 94 lb. bags cement grout to surface; Pad = 2x2 ft. concrete Cover = Flush Mount

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-12

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
42				
45			sl. silty clayey SAND, dk tan 45	
50			SAME AS ABOVE 50	
55			SAME AS ABOVE, v. Few limerock frags, tan 55	
60			SAME AS ABOVE, no limerock frags 60	
65			SAME AS ABOVE, v. Few limerock frags, tan 65	2" PVC
70			NO RETURN, possible limerock 70	
75			NO RETURN, possible limerock 75	
80			NO RETURN, possible limerock 80	
85			85	
87	10 3 / 4 5	7	silty sandy CLAY, tan/orange, stiff, mottled white + black 87	

Notes & additional data/info. (specify if other materials used):
USED 6.5 BAGS OF ENVIROPLUG GROUT (50 lbs), AND 4 BAGS OF HOLEPLUG DURING GROUTING.

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-12

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
87				
90	R R / R R	-	LIMESTONE, buff, hard, dry	2" PVC
	R R / R R	-	SAME AS ABOVE, moist	
95	41 17 / 11 15	28	LIMESTONE, buff, soft, becomes wet @ 96' bls ▽	
100			SAME AS ABOVE	
105			sandy CLAY, tan/orange, w/ white lime mud	
110			SAME AS ABOVE	
115				
120				
125				
130				
132				

Notes & additional data/info. (specify if other materials used):

DTW = 96.75' BELOW TOC, MEASURED ON 11/03/05

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW - 13 Page 1 of 3

Project Name: Citrus County Groundwater Investigation

Boring Completed : 11/09/05, Well Completed: 11/10/05

Project No.: 03860-021-01

JEA Geologist: Adam Smith

Drillers: Diversified - Dade City, Kevin

ELEVATIONS: Ground 112.56 ft. NGVD, Top of Slab _____ ft. NGVD

Drilling/sampling methods: HSA, ~~Mud Rotary~~ / SPT

Top of Casing 112.04 ft. NGVD (NCLS Surveyors)

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
0				FLUSH MOUNT
5			SAND, tan, Fine grained	
10			SAND, lt. tan, Fine grained	
15			sl. clayey silty SAND, dk. tan / orange	
20			SAME AS ABOVE	2" PVC
25			SAME AS ABOVE, lt tan / orange	
30			SAME AS ABOVE	
35			SAND, tan, Fine grained	
40			SAME AS ABOVE	
42				

Notes & additional data/info. (specify if other materials used):

Total well depth = 120 feet bls.

Well casing/pipe: Dia.&type = 2-in. Sch. 40 PVC Solid length = 100 ft; Screen = 20 ft., 0.010-in.

Sand filter pack = 20 50 lb. Bags; Type= 20/30 silica ;Placed from 95 to 120 ftbls (measured).

Annular seal: Type = 30/65 ; Thickness = 3 ft. ; Placed from 92 to 95 ft.bls (measured).

Grout = 2 94 lb. bags cement grout to surface; Pad = 2x2 ft. concrete Cover = Flush Mount

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-13

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
42				
45			45	
50			SAND, tan, Fine grained 50	
55			SAME AS ABOVE 55	
60			SAME AS ABOVE 60	2" PVC
65			sl. silty clayey SAND, tan 65	
70			SAME AS ABOVE 70	
75			SAME AS ABOVE 75	
80			SAME AS ABOVE, lt. tan 80	
85			SAME AS ABOVE 85	
87			87	

Notes & additional data/info. (specify if other materials used):

ADDED 9 16 BAGS OF ENVIROPLUG (5016) + 10 BAGS HOLEPLUG DURING GROUTING.

JONES EDMUND

BORING LOG FIELD REPORT

Boring No.: MW-13

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
87				
90			SAND, lt. tan, fine grained, w/ v. few limerock frags, white	90
95				95
	14 9	18	CLAY, brown, mottled grey, white, black and dk. red, plastic	
	9 10		LIMESTONE, white, soft, w/ clay, soft, dk. red	
100				100
	3 3	5	SAME AS ABOVE, WITH UNKNOWN ODOR	
	2 2			
	3 3	7		
	4 4		CLAY, grey mottled dk. red + tan w/ sandy lenses, brown, no odor, wet @ 104.5' bls ▽	
105				105
110			silty CLAY, tan, plastic, w/ limerock frags throughout, white	110
115			SAME AS ABOVE	115
120			SAME AS ABOVE	120
125				125
130				130
132				132

Notes & additional data/info. (specify if other materials used):

DTW = 105.06' bls MEASURED ON 11/15/05

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-14 Page 1 of 3

Project Name: Citrus County Groundwater Investigation

Boring Completed: 11/07/05, Well Completed: 11/10/05

Project No.: 03860-021-01

JEA Geologist: Adam Smith

Drillers: Diversified - Dade City, Kevin

ELEVATIONS: Ground 109.09 ft. NGVD, Top of Slab _____ ft. NGVD

Drilling/sampling methods: HSA, ~~Mud Rotary~~ / SPT

Top of Casing 108.63 ft. NGVD (NCLS Surveyors)

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
0				BOLT DOWN
5			SAND, tan, fine grained	5
10			SAME AS ABOVE	10
15			sl silty SAND, tan/orange	15
20			SAME AS ABOVE	20
25			sl silty SAND, dk tan/orange	25
30			SAME AS ABOVE	30
35			SAME AS ABOVE	35
40			sl silty clayey SAND, dk tan/orange	40
42				42

2" PVC

Notes & additional data/info. (specify if other materials used):

Total well depth = 115 feet bls.

Well casing/pipe: Dia.&type = 2-in. Sch. 40 PVC Solid length = 95 ft; Screen = 20 ft., 0.010-in.

Sand filter pack = 20 50 lb. Bags; Type= 20/30 silica ;Placed from 90 to 115 ftbls (measured).

Annular seal: Type = 30/65 ; Thickness = 5 ft.; Placed from 85 to 90 ft.bls (measured).

Grout = 2 94 lb. bags cement grout to surface; Pad = 2x2 ft. concrete Cover = Flush Mount

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-14

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
42				
45			SAME AS ABOVE, dk red/orange	45
50			SAME AS ABOVE	50
55			SAME AS ABOVE	55
60			SAME AS ABOVE	60
65			SAME AS ABOVE, tan/~~orange~~ orange	65
70			SAME AS ABOVE, tan	70
75			SAME AS ABOVE	75
80			SAME AS ABOVE	80
85				85
	5-4	10	CLAY, TAN mottled white and brown	
87	4-7		SAND, white, clean, wet @ 86' bls	87

2" PVC

Notes & additional data/info. (specify if other materials used):

DRILLERS ADDED 8 BAGS OF ENVIROPLUG (50lb) AND TWO BAGS OF HOLEPLUG DURING GROUTING.

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-14

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth 87	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
	8 7			
	8 9		CLAY, tan mottled black, white and brown, wet	
90			90.	
	6 7			
	9 9		SAND, tan to lt. tan, moist	
95			95	2" PVC
	5 4	7	SAME AS ABOVE, with limerock frags, tan, dry	
	3 3			
100			100	
	1 1	3	sandy CLAY, brown, becomes wet @ 101' bls	
	1 2			
105			SAME AS ABOVE w/ limestone frags 105	
110			LIMESTONE, white to buff, soft, w/ sand and clay, tan 110	
115			SAME AS ABOVE 115	
120			120	
125			125	
130			130	
132			132	

Notes & additional data/info. (specify if other materials used):

DTW = 102.25' BELOW TOC, MEASURED ON 11/08/05

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-15 Page 1 of 3

Project Name: Citrus County Groundwater Investigation
Boring Completed: 11/04/05, Well Completed: 11/10/05
Project No.: 03860-021-01
JEA Geologist: Adam Smith
Drillers: Diversified - Dade City, Kevin
ELEVATIONS: Ground 124.15 ft. NGVD, Top of Slab _____ ft. NGVD
Drilling/sampling methods: HSA, [redacted] / SPT
Top of Casing 123.71 ft. NGVD (NCLS Surveyors)

Depth	SPT Data ASTM D1586 per 6"	N		Description of Soil	Well Details
0					FLUSH MOUNT
5				silty SAND, orange, fine grained	
10				SAME AS ABOVE	
15				SAME AS ABOVE, dk tan	
20				silty clayey SAND, tan, fine grained, hard, dense	2" PVC
25				SAME AS ABOVE, tan to orange/brown	
30				silty clayey SAND, lt. tan, dense	
35				SAME AS ABOVE	
40				cl. clayey SAND, tan	
42					

Notes & additional data/info. (specify if other materials used):
Total well depth = 129 feet bls.
Well casing/pipe: Dia.&type = 2-in. Sch. 40 PVC Solid length = 109 ft; Screen = 20 ft., 0.010-in.
Sand filter pack = 15 50 lb. Bags; Type= 20/30 silica ;Placed from 107 to 129 ftbls (measured).
Annular seal: Type = BENTONITE ; Thickness = 3 ft.; Placed from 104 to 107 ft.bls (measured).
Grout = 2 94 lb. bags cement grout to surface; Pad = 2x2 ft. concrete Cover = Flush Mount

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-15

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Detail
42				
45			SAND, tan, Fine grained 45	
50			sl. clayey SAND, tan 50	
55			SAME AS ABOVE, lt. tan 55	
60			SAME AS ABOVE 60	
65			SAME AS ABOVE 65	2" PVC
70			SAND, buff, Fine grained 70	
75			SAME AS ABOVE 75	
80			SAME AS ABOVE 80	
85			SAND, lt. tan, Fine grained 85	
87			87	

Notes & additional data/info. (specify if other materials used):

ADDED 6 BAGS OF ENVIROPLUG (5016) AND TWO BAGS OF HOLE-PLUG.

JONES EDMUND

BORING LOG FIELD REPORT

Boring No.: MW-15

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth 87	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
90			SAND, H tan, fine grained 90	
95			SAND, tan, fine grained 95	
100			SAME AS ABOVE 100	2" PVC
105			sl. clayey SAND, tan 105	
110	8 25 40 50/5	65	sl. clayey SAND, buff, unknown odor 110	
115	10 26 36 42	62	SAME AS ABOVE, odor, becomes wet @ 116' bls 115	
120			SAME AS ABOVE 120	
125			SAME AS ABOVE 125	
130			SAME AS ABOVE 130	
132			132	

Notes & additional data/info. (specify if other materials used):

DTW = 116.63', BELOW TOC, MEASURED ON 11/08/05

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-16

Project Name: Citrus County Groundwater Investigation

Boring Completed: 10/28/05, Well Completed: 10/31/05

Project No.: 03860-021-01

JEA Geologist: Adam Smith

Drillers: Diversified - Dade City, Kevin

ELEVATIONS: Ground 120.72 ft. NGVD, Top of Slab _____ ft. NGVD

Drilling/sampling methods: HSA, ~~Mud Rotary~~ / SPT

Top of Casing 119.81 ft. NGVD (NCLS Surveyors)

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
0				12" BOLT DOWN
5			SAND, tan/orange, Fine grained, clean	
10			clayey SAND, tan/brown, Fine grained, ~~clean~~	
15			SAND, tan/brown, Fine grained, clean	
20			SAME AS ABOVE	2" PVC
25			SAME AS ABOVE	
30			sl. silty SAND, tan/brown	
35			sl. silty clayey SAND, tan/orange	
40			SAME AS ABOVE	
42				

Notes & additional data/info. (specify if other materials used):

Total well depth = 126 feet bls.

Well casing/pipe: Dia.&type = 2-in. Sch. 40 PVC Solid length = 106 ft; Screen = 20 ft., 0.010-in.

Sand filter pack = 19 50 lb. Bags; Type= 20/30 silica ;Placed from 102 to 126 ftbls (measured).

Annular seal: Type = 30/65 ; Thickness = 2 ft. ; Placed from 100 to 102 ft.bls (measured).

Grout = 2.5 94 lb. bags cement grout to surface; Pad = 2x2 ft. concrete Cover = Flush Mount

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-16

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
42				
45			SAME AS ABOVE, dk tan 45	
50			SAME AS ABOVE, tan / orange 50	
55			SAME AS ABOVE, tan / brown 55	
60			SAME AS ABOVE 60	
65			SAME AS ABOVE 65	2" PVC
70			clayey SAND, dk tan w/ limerock frags, buff, medium hardness 70	
75			NO RECOVERY 75	
80			NO RECOVERY 80	
85			85	
87	19 26 / 21 10	47	LIMEROCK, white, soft, dry 87	

Notes & additional data/info. (specify if other materials used):

ADDED 6 BAGS OF ENVIROPLUG GROUT (5016),

ADDED 12 BAGS OF HOLEPLUG.

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-16

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
87				
90	8 18 / 15 19	33	LIMEROCK, white, soft, dry, w/ clay, white	
95	8 8 / 8 12	16	SAME AS ABOVE	
100	- - / 11 8	-	SPOON FELL IN FIRST FOOT CLAY, brown, w/ LIMEROCK, white, soft, dry	2" PVC
105	6 4 / 6 6	10	sl. silty CLAY, tan, mottled white & brown w/ many SAND lenses, brown, fine grained, moist	
110	4 4 / 5 8	9	sl. silty CLAY, brown, mottled tan/orange, w/ many SAND lenses, brown to tan, wet @ 111' bls ▽	
115			SAME AS ABOVE	
120			SAME AS ABOVE	
125			silty, clayey SAND, white BORING TERMINATED @ 126' bls	
130				
132				

Notes & additional data/info. (specify if other materials used):

DEPTH TO WATER, 112' bls on 10/31/05

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-17 Page 1 of 3

Project Name: Citrus County Groundwater Investigation
Project No.: 03860-021-01
Drillers: Diversified - Dade City, Kevin
Drilling/sampling methods: HSA, ~~Mud Rotary~~ / SPT

Boring Completed: 11/03/05, Well Completed: 11/03/05
JEA Geologist: Adam Smith / ANGELA K. OWEN
ELEVATIONS: Ground 111.50 ft. NGVD, Top of Slab _____ ft. NGVD
Top of Casing 110.98 ft. NGVD (NCLS Surveyors)

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details: FLUSH MOUNT
0				
5			Sd., f, tn-dk gry, slily mott, cln	
10			slily slty Sd, f, or mott w/tn & beige	
15			a.a. + slily cl; scant sml frags carb Mat	
20			V slty Sd, f-med, rdsh-or, lse	2" PVC
25			a.a. + mott w/beige; Tr sml Cl peas (1/8-1/16" D)	
30			V slty Sd, f-med, rdsh-or	
35			a.a.	
40			slty Sd, f-med, rdsh-or w/tn mott, Tr Cl peas (~1/16" D)	
42				

Notes & additional data/info. (specify if other materials used):
Total well depth = 118 feet bls.
Well casing/pipe: Dia.&type = 2-in. Sch. 40 PVC Solid length = 98 ft; Screen = 20 ft., 0.010-in.
Sand filter pack = 17 50 lb. Bags; Type= 20/30 silica ;Placed from 95 to 118 ftbls (measured).
Annular seal: Type = BENTONITE ; Thickness = 4 ft.; Placed from 89 to 95 ft.bls (measured).
Grout = 2 94 lb. bags cement grout to surface; Pad = 2x2 ft. concrete Cover = Flush Mount

JONES EDMUNDS

BORING LOG FIELD REPORT Boring No.: MW-17

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1586 per 6"	N	Description of Soil	Well Details
42				
45			v slty Sd, med, orsh tn, lse	
50			v slty Sd, f-med, orsh tn, slily cohesive	
55			N.R.	
60			slty, v cl Sd, f, orsh brn, hi plas, scant Ls Frags	2" PVC
65			a.a. w/Tr Ls Frags	
70			a.a. but less plas, more slty	
75			sd Cl, w/f Sd, orsh tn, hi plas, scant Ls Frags	
80			cl slty Sd, f, orsh tn, slily plas	
85			v slty Sd, f-med, Tr gry Cl peas, scant Ls Frags, lse	
87				

Notes & additional data/info. (specify if other materials used):

ADDED 5 BAGS OF ENVIROPLUG (50 lb) DURING GROUTING.

JONES EDMUNDS

BORING LOG FIELD REPORT

Boring No.: MW-17

Project Name: Citrus County Groundwater Investigation

Project No.: 03860-021-01

Depth	SPT Data ASTM D1588 per 6"	N	Description of Soil	Well Details
87				
90			N.R.	
95	5 5	12	slty sd Cl, orsh tn, mott wh; scant carb Mat, hi plas	2" PVC
	7 8		Sd, f-vf, wh, cln, "sugary"	
100	4 4	9	Sd, f, bu-or-wh mott, w/Cl Len(s), much carb Mat, moist	
	5 7		Cl, orsh tn mott w/wh, lam of carb mat, stiff	
	7 4	11	sd Cl, orsh tn mott w/wh lmy Cl, carb Mat, v plas	
	7 9		Cl, orsh tn mott w/wh lmy Cl, carb mat, v plas	
105			▽ 105 v sd Cl, pale orsh brn to tn, w/f wh Sd + Sd Len(s)	
110			cl Sd, f, wh, "sugary"	
115			Sd, f, wh, "sugary", w/Cl Len(s)	
(TD)			sd Cl, w/f Sd, orsh tn, scant carb Mat + Ls Frags (TD)	
120				
125				
130				
132				

Notes & additional data/info. (specify if other materials used):

DTW = -104.09 Below T.O.C.; measured 11/08/05.

JONES EDMUNDS

APPENDIX E

WELL COMPLETION REPORTS

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No. (Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 11/30/05

INSTALLATION NAME: Citrus County Central Landfill

DEP PERMIT NUMBER: 21375-003-SO GMS NUMBER:

WELL NUMBER: MW-10 WELL NAME: MW-10

DESIGNATION: Background Immediate Compliance X

LATITUDE/LONGITUDE:

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Hollow Stem Auger / SPT

INSTALLED BY: Diversified Drilling, Dade City, FL

TOTAL DEPTH: 120.5 (bls) DEPTH OF SCREEN: 100.5 – 120.5' (bls)

SCREEN LENGTH: 20' SCREEN SLOT SIZE: 0.010" SCREEN TYPE: Slotted

CASING DIAMETER: 2" CASING TYPE: SCH 40 PVC

LENGTH OF CASING: 100.5' FILTER PACK MATERIAL: 20/30 Silica

TOP OF CASING ELEVATION (MSL): 113.51'

GROUND SURFACE ELEVATION (MSL): 114.05'

COMPLETION DATE: 11/02/05

DESCRIBE WELL DEVELOPMENT: Purged approx 125 gallons from well with submersible pump. Well draws down at rates greater than 0.5 gpm. At end of development, the turbidity had dropped to 11.3 NTU.

POST DEVELOPMENT WATER LEVER ELEVATION (MSL): 7.95'

DATE AND TIME MEASURED: 12/02/05

REMARKS: (soils information, stratigraphy, etc.) :

REPORT PREPARED BY: Adam Smith, Jones Edmunds & Associates, 352-377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No.
(Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 11/30/05

INSTALLATION NAME: Citrus County Central Landfill

DEP PERMIT NUMBER: 21375-003-SO GMS NUMBER:

WELL NUMBER: MW-11 WELL NAME: MW-11

DESIGNATION: Background Immediate Compliance X

LATITUDE/LONGITUDE:

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Hollow Stem Auger / SPT

INSTALLED BY: Diversified Drilling, Dade City, FL

TOTAL DEPTH: 111.5 (bls) DEPTH OF SCREEN: 91.5 – 111.5 (bls)

SCREEN LENGTH: 20' SCREEN SLOT SIZE: 0.010" SCREEN TYPE: Slotted

CASING DIAMETER: 2" CASING TYPE: SCH 40 PVC

LENGTH OF CASING: 91.5' FILTER PACK MATERIAL: 20/30 Silica, Pea Gravel and River Pebbles

TOP OF CASING ELEVATION (MSL): 104.83'

GROUND SURFACE ELEVATION (MSL): 105.17'

COMPLETION DATE: 11/02/05

DESCRIBE WELL DEVELOPMENT: Purged approximately 512 gallons from well over a 3.5 hr event. No drawdown noted while pumping at a rate of 1.1 gpm. Turbidity at 14.4 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVER ELEVATION (MSL): 6.57'

DATE AND TIME MEASURED: 12/02/05

REMARKS: (soils information, stratigraphy, etc.) :

REPORT PREPARED BY: Adam Smith, Jones Edmunds & Associates, 352-377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No. (Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 11/30/05

INSTALLATION NAME: Citrus County Central Landfill

DEP PERMIT NUMBER: 21375-003-SO GMS NUMBER:

WELL NUMBER: MW-12 WELL NAME: MW-12

DESIGNATION: Background Immediate Compliance X

LATITUDE/LONGITUDE:

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Hollow Stem Auger / SPT

INSTALLED BY: Diversified Drilling, Dade City, FL

TOTAL DEPTH: 110' (bls) DEPTH OF SCREEN: 90' – 110' (bls)

SCREEN LENGTH: 20' SCREEN SLOT SIZE: 0.010" SCREEN TYPE: Slotted

CASING DIAMETER: 2" CASING TYPE: SCH 40 PVC

LENGTH OF CASING: 90' FILTER PACK MATERIAL: 20/30 Silica

TOP OF CASING ELEVATION (MSL): 103.49'

GROUND SURFACE ELEVATION (MSL): 103.98'

COMPLETION DATE: 11/02/05

DESCRIBE WELL DEVELOPMENT: Purged approximately 815 gallons from well over a 9 hr / 3 day event. No drawdown noted while pumping at a rate of 2.0 gpm. Turbidity at 1.07 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVER ELEVATION (MSL): 6.56'

DATE AND TIME MEASURED: 12/02/05

REMARKS: (soils information, stratigraphy, etc.) :

REPORT PREPARED BY: Adam Smith, Jones Edmunds & Associates, 352-377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No. (Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 11/30/05

INSTALLATION NAME: Citrus County Central Landfill

DEP PERMIT NUMBER: 21375-003-SO GMS NUMBER:

WELL NUMBER: MW-13 WELL NAME: MW-13

DESIGNATION: Background Immediate Compliance X

LATITUDE/LONGITUDE:

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Hollow Stem Auger / SPT

INSTALLED BY: Diversified Drilling, Dade City, FL

TOTAL DEPTH: 120' (bls) DEPTH OF SCREEN: 100' – 120' (bls)

SCREEN LENGTH: 20' SCREEN SLOT SIZE: 0.010" SCREEN TYPE: Slotted

CASING DIAMETER: 2" CASING TYPE: SCH 40 PVC

LENGTH OF CASING: 100' FILTER PACK MATERIAL: 20/30 Silica

TOP OF CASING ELEVATION (MSL): 112.04'

GROUND SURFACE ELEVATION (MSL): 112.55'

COMPLETION DATE: 11/10/05

DESCRIBE WELL DEVELOPMENT: Purged approximately 175 gallons from well over a 2.25 hr event. A 5' drawdown is noted while pumping at a rate of 0.75 gpm. Turbidity at 5.33 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVER ELEVATION (MSL): 6.75'

DATE AND TIME MEASURED: 12/02/05

REMARKS: (soils information, stratigraphy, etc.) :

REPORT PREPARED BY: Adam Smith, Jones Edmunds & Associates, 352-377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No. (Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 11/30/05

INSTALLATION NAME: Citrus County Central Landfill

DEP PERMIT NUMBER: 21375-003-SO GMS NUMBER:

WELL NUMBER: MW-14 WELL NAME: MW-14

DESIGNATION: Background Immediate Compliance X

LATITUDE/LONGITUDE:

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Hollow Stem Auger / SPT

INSTALLED BY: Diversified Drilling, Dade City, FL

TOTAL DEPTH: 115" (bls) DEPTH OF SCREEN: 95' – 115' (bls)

SCREEN LENGTH: 20' SCREEN SLOT SIZE: 0.010" SCREEN TYPE: Slotted

CASING DIAMETER: 2" CASING TYPE: SCH 40 PVC

LENGTH OF CASING: 95' FILTER PACK MATERIAL: 20/30 Silica

TOP OF CASING ELEVATION (MSL): 108.63'

GROUND SURFACE ELEVATION (MSL): 109.09'

COMPLETION DATE: 11/10/05

DESCRIBE WELL DEVELOPMENT: Purged approximately 520 gallons from well over a 4.75 hr event. No drawdown is noted while pumping at a rate of 2.0 gpm. Turbidity at 4.70 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVER ELEVATION (MSL): 5.88'

DATE AND TIME MEASURED: 12/02/05

REMARKS: (soils information, stratigraphy, etc.) :

REPORT PREPARED BY: Adam Smith, Jones Edmunds & Associates, 352-377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No.
(Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 11/30/05

INSTALLATION NAME: Citrus County Central Landfill

DEP PERMIT NUMBER: 21375-003-SO GMS NUMBER:

WELL NUMBER: MW-15 WELL NAME: MW-15

DESIGNATION: Background Immediate Compliance X

LATITUDE/LONGITUDE:

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Hollow Stem Auger / SPT

INSTALLED BY: Diversified Drilling, Dade City, FL

TOTAL DEPTH: 129" (bls) DEPTH OF SCREEN: 109' – 129' (bls)

SCREEN LENGTH: 20' SCREEN SLOT SIZE: 0.010" SCREEN TYPE: Slotted

CASING DIAMETER: 2" CASING TYPE: SCH 40 PVC

LENGTH OF CASING: 109' FILTER PACK MATERIAL: 20/30 Silica

TOP OF CASING ELEVATION (MSL): 123.71'

GROUND SURFACE ELEVATION (MSL): 124.15'

COMPLETION DATE: 11/10/05

DESCRIBE WELL DEVELOPMENT: Purged approximately 373 gallons from well over a 8 hr event. No drawdown is noted while pumping at a rate of .5 gpm. Turbidity at 7.72 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVER ELEVATION (MSL): 7.01'

DATE AND TIME MEASURED: 12/02/05

REMARKS: (soils information, stratigraphy, etc.):

REPORT PREPARED BY: Adam Smith, Jones Edmunds & Associates, 352-377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No.
(Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 11/30/05

INSTALLATION NAME: Citrus County Central Landfill

DEP PERMIT NUMBER: 21375-003-SO GMS NUMBER:

WELL NUMBER: MW-16 WELL NAME: MW-16

DESIGNATION: Background Immediate Compliance X

LATITUDE/LONGITUDE:

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Hollow Stem Auger / SPT

INSTALLED BY: Diversified Drilling, Dade City, FL

TOTAL DEPTH: 126' (bls) DEPTH OF SCREEN: 106' – 126' (bls)

SCREEN LENGTH: 20' SCREEN SLOT SIZE: 0.010" SCREEN TYPE: Slotted

CASING DIAMETER: 2" CASING TYPE: SCH 40 PVC

LENGTH OF CASING: 106' FILTER PACK MATERIAL: 20/30 Silica

TOP OF CASING ELEVATION (MSL): 119.81'

GROUND SURFACE ELEVATION (MSL): 120.22'

COMPLETION DATE: 10/31/05

DESCRIBE WELL DEVELOPMENT: Purged approximately 375 gallons from well over a 5 hr event. No drawdown is noted while pumping at a rate of 1.25 gpm. Turbidity at 2.80 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVER ELEVATION (MSL): 6.88'

DATE AND TIME MEASURED: 12/02/05

REMARKS: (soils information, stratigraphy, etc.) :

REPORT PREPARED BY: Adam Smith, Jones Edmunds & Associates, 352-377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No. (Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 11/30/05

INSTALLATION NAME: Citrus County Central Landfill

DEP PERMIT NUMBER: 21375-003-SO GMS NUMBER:

WELL NUMBER: MW-17 WELL NAME: MW-17

DESIGNATION: Background Immediate Compliance X

LATITUDE/LONGITUDE:

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Hollow Stem Auger / SPT

INSTALLED BY: Diversified Drilling, Dade City, FL

TOTAL DEPTH: 118' (bls) DEPTH OF SCREEN: 98' – 118' (bls)

SCREEN LENGTH: 20' SCREEN SLOT SIZE: 0.010" SCREEN TYPE: Slotted

CASING DIAMETER: 2" CASING TYPE: SCH 40 PVC

LENGTH OF CASING: 98' FILTER PACK MATERIAL: 20/30 Silica

TOP OF CASING ELEVATION (MSL): 110.98'

GROUND SURFACE ELEVATION (MSL): 111.50'

COMPLETION DATE: 11/03/05

DESCRIBE WELL DEVELOPMENT: Purged approximately 350 gallons from well over a 3.75 hr event. No drawdown is noted while pumping at a rate of 1.25 gpm. Turbidity at 4.67 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVER ELEVATION (MSL): 6.74'

DATE AND TIME MEASURED: 12/02/05

REMARKS: (soils information, stratigraphy, etc.) :

REPORT PREPARED BY: Adam Smith, Jones Edmunds & Associates, 352-377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

APPENDIX F

WELL DEVELOPMENT NOTES

WELL DEVELOPMENT FIELD REPORT Well No.: MW-10 Page 1 of ____

Job Name: Citrus County Landfill Project No.: ____

Date: 11/8/05 Weather: Clear warm 30°C

Developer(s): S. Messick

Development Technique: Pump & surge

Depth to Water: 105.18 Corrected: MPM-GNV-01

Total Depth of Well: 118.60 Well Dia.: 2" PVC

$118.60 - 105.18 \times 0.16 = 2.1$ GPV

-105.18

13.42

DTW

Time	Gallons Purged	DEPTH OF PUMP	PURGE RATE	TURBIDITY	Comments
0954	INITIAL	110 FT.	0.75	Sandy Tan color to begin	250Hz = 0.75GPM - WELL DRAWS DOWN TO BEGIN. SLOWED TO
					0.4GPM 243Hz. SURGING WELL then pumping it out (dry)
					quickly - continue.
		moved pump thru entire			This well draws down and was hard to develop
		water column when surging.			FOR that reason.
		Then I pumped from bottom.			
	±125			11.3NTU	250Hz = 0.30gpm

Additional Comments: This well draws down >.5 gpm - So I surge well then pumped it dry quickly. Allowed to recharge and continued ~~Same~~ same until it cleared. Then I purge it at top of water column @ 0.3 gpm 30 min. Final turb. = 11.3NTU and still clearing.

I would use grundfos pump for first sampling event in case well gets turbid. Then you could over purge to clear

Adam's

COPY

WELL DEVELOPMENT FIELD REPORT Well No.: MW-11 Page ____ of ____

Job Name: Citrus Co. LF Project No.: 03860-011

Date: 11-3-05 Weather: clear - 75°F

Developer(s): E. SWANEY / JONES + EDMUNDS

Development Technique: Surge & Purge w/ ESP

S-C-T Meter: ysi Conductivity Probe: ysi pH Meter ysi ph Probe: ysi

Depth to Water: 98.0 Corrected: N/A

Total Depth of Well: 111.5' / 20' screen Well Dia.: 2" PVC (flush mount)

(111.5 - 98.0) .16 = 2.16 gal/vol (site closes @ 1700 hrs)

Time	Gallons Purged	Water Temperature (°C)	Conductivity (umhos)	ph	Comments
1100	N/A	N/A	N/A	N/A	complete teardown Decon
1150					Begin developement Pump Quit
1214	1.0 gal/min				Begin Again Beige to begin/clearing @ 8.0 gal
1221					surge
1223	10.0	25.75	290	7.23	>1000 NTU (Beig= thewhite)
1229	17.0	25.59	293	7.21	310 NTU 0.40 D.O. Readings then surge
1231	—	—	—	—	Became Beige turbid Again
1234	20.0	Alot of silty sand present.			surge and increase purge Rate to 3.0 gal/min
1239	35.0				increase purge Rate to 4.0 gal/min
1242	47.0	25.30	296	7.24	slightly cloudy - Readings then surge (116.0 NTU)
1252	87.0	25.27	295	7.35	122 NTU
1255	100.0	25.20	297	7.24	66.4 NTU surge After Readings
1255	—	—	— / 92.9 NTU	—	Pump moved up 6' w/surge then pumped @ 4.0 gal/m
1331	244.0	—	—	—	Pump moved to Top of column @ 99.0'.
1354	336.0	25.31	302	7.21	w/surge quickly cleared to 116.0 NTU (0.56 D.O.)
1438	572.0	25.22	300	7.22	D.O. @ 0.49 - 14.4 NTU very clear.

Additional Comments: No drawdown seen @ 1.0 gl/m @ this well - Large void / Alot of Rock to fill multiple surges Between 1242 & 1252 Pump moved up Column to 105' multiple surges (Beige with each surge) IF well is Disturbed @ this point 1338 on (272 gal) takes Appx 2-3 gal Before clearing is Noticed. Alot of sand being pumped out still @ 308 gal (1347). @ 1425 turb still high @ 54.7 NTU water level @ END @ 97.98'

probe left @ 98.2' with no Drawdown Alarm - well very stable throughout Development

WELL DEVELOPMENT FIELD REPORT Well No.: MW-12 Page 1 of 3

Job Name: Citrus Co. LP Project No.:

Date: 11-4-05 Weather: Clear & Cool

Developer(s): E. SWANEY

Development Technique: Surge + Purge

S-C-T Meter: ysi Conductivity Probe: ysi pH Meter ysi ph Probe: ysi

Depth to Water: ~~HOBS~~ 96.71 Corrected: N/A

Total Depth of Well: 110' / 20' screen Well Dia.: 2" PVC

(110 - 96.71) .16 = 2.126 g/v

Time	Gallons Purged	Water Temperature (°C)	Conductivity (umhos) / NTU	ph	Comments
0930	0	—	—	—	very Beige to begin @ Top of column 0.5 g/min - Flow 1.0
1000	23.0	26.31	381 / >1000	7.06	Bottom of well some clearing / still very Beige w/ Sand
1015	34.5	—	—	—	multiple surges - clearing faster with each - last surge
1025	~~42.0~~	26.26	450 / 411.0 NTU	6.88	White - pump moved up 1' & surged (Became very Beige)
1035	50.0	—	—	—	surge - turned very Beige again - pump Depth @ 108'
1107	82.0	26.33	465 / >1000	6.84	D.O. @ 0.08 pump set @ 98' DTW - 97.50
1118	104.0	—	— / >1000	—	surge - Turned Beige Again - multiple surges
1132	132.0	26.22	460 / >1000	6.87	clears quickly to white Allowing an undisturbed purge
1142	152.0	26.21	455 / 667.0	6.87	milky white
1152	172.0	26.19	462 / 92.1	6.86	Slightly to mod white
1202	192.0	26.18	462 / 43.7	6.85	Slightly to mod white
1222	232.0	26.31	463 / 480	6.85	D.O. @ 0.07 - undisturbed
1242	272.0	26.28	463 / 51.6	6.85	D.O. @ 0.07
1257	302.0	26.29	462 / 36.4	6.85	D.O. @ 0.06 - moved pump back to Bottom
1400	428.0	26.49	431 / >1000	6.81	Quickly clears to white
1500	548.0	—	—	—	pump moved (surged) up + Down Column
1515	570.0	26.25	441 / 454.0	6.83	D.O. @ 0.06
1530	600.0	26.06	457 / 467.0	6.77	Milky white undisturbed Column then surge
1600	660.0	26.21	450 / 451.0	6.79	Milky white from mod Beige

Additional Comments: Drawdown @ 1.0 g/m - pump slowed to .75 g/min - pump lowered to Bottom when Column Began clearing @ Top

Recharge increasing - pump speed increased to 1.0 gal/min @ 1035 Depth to water @ 1047 @ 97.46 purge rate increased to 2.0 gal/min @ 1107. At 1118 there was a noticable clearing then I surged well and it became very Beige turb. (Multiple surges over next few minutes) Heavy build up of silt in flow cell water level @ 1212 @ 97.90 - the slight disturbance caused well to cloudy up. w/ mod surge column became Beige again - surging from Top to Bottom very vigorously

1500 - (2 hrs of surging from top to bottom - water quickly clears to cloudy white in 6-10 gal becoming clearer undisturbed (pump @ top of column). Tripped Breaker on generator @ 1510 Restart @ 1514 milky white still high Turb. @ END may need Further Development site closes @ 1700

Well MAY Require substantial stressing to clear Further

WELL DEVELOPMENT FIELD REPORT Well No.: MW-12 Page 2 of 3

Job Name: Citrus County Landfill Project No.:

Date: 11/8/05 Weather: Clear 30°C

Developer(s): S. Messick

Development Technique: Pump & surge

Depth to Water: 96.68 ~~Corrected:~~ MPM-GNV-01

Total Depth of Well: 108.83 Well Dia.: 2" PVC

108.83 - 96.68 (0.16) ± 2.0 GPV

DTW Time	Gallons Purged	DEPTH OF PUMP	PURGE RATE	TURBIDITY	Comments
1506	INITIAL	102	260 Hz > 1.25 GPM	341 NTU ~~341~~	
		moved the pump thru entire water column, when I surged. Then would leave pump at near bottom to purge.			
1655	± 125				

Additional Comments: Ed already spent a day on this well. It still needs more ~~ge~~ developing. After surging it turns milky brown the white but does not clear very good.

WELL DEVELOPMENT FIELD REPORT Well No.: MW-12 Page 3 of 3

Job Name: Citrus Co. LF Project No.:

Date: 11/15/05 Weather: P. Cloudy - Breezy - 29°C

Developer(s): DAN L.

Development Technique: pump in mid. H_2O column

Depth to Water: 96.95 Corrected: —

Total Depth of Well: Well Dia.: 2

108.83 - 96.95 (.16) = 1.9 230 Hz = .5 GPM

DTW Time	Gallons Purged	DEPTH OF PUMP	PURGE RATE	TURBIDITY	Comments
1451	INITIAL	103	.5	—	Pseudo Sampling
1455	2.0	↓	↓	115	
1459	↓			28.3	
1503				11.2	
1507				5.87	
1511	↓10			4.55	leave pump + let run
1552	30.5	↓	↓	1.07	STOP

Additional Comments:

WELL DEVELOPMENT FIELD REPORT Well No.: MW-13 Page 1 of ____

Job Name: Citrus County Landfill Project No.: ____

Date: 11/15/05 Weather: Cloudy 22°C - 29°C

Developer(s): S. Messick

Development Technique: Pump & Surge

Depth to Water: 105.06 Corrected: MPM-GNV-01

Total Depth of Well: 118.80 Well Dia.: 2" PVC Flushmount

118.80 - 105.06 (0.16) = 2.2 GPV

DTW Time	Gallons Purged	DEPTH OF PUMP	PURGE RATE	TURBIDITY	Comments
1145	INITIAL	118 FT.	245Hz = 0.55gpm	>1000	Tan/Brown to begin 105-107 FT. drawn in 4 min.
1245	33 gal.	↓	255Hz = 0.75gpm		107-109 FT "ll" holding there @ 0.55gpm
1345	45gal	↑116FT.	~~27.8NTU~~	37.8 NTU	109-110FT. (1FT) more draw down @ 0.75GPM did not try to purge any faster
1415	22.5gal	↑114FT.	~~17.8NTU~~	17.8NTU	
1515	45gal	114FT.	~~7hm~~	7.78NTU	
1545	22.5	114	245Hz = 0.5gpm	70.1 NTU	
1600	7.5	114	↓	5.33NTU	
	Total ≠175gals			5.33NTU	

Additional Comments: Surge well good thru entire water column Began purging slow to prevent drawn down. Adam said when installing this well it had a lot of ~~clay~~ clay. This well draws down a total of 5ft @ 0.75gpm. Use grundfos and purge slowly - when you do 1ST sampling event. Overe purge if needed.

WELL DEVELOPMENT FIELD REPORT Well No.: MW-14 Page ____ of ____

Job Name: Citrus Co. LF Project No.: ____

Date: 11/15/05 Weather: Clear 29°C

Developer(s): DAN L.

Development Technique: Grundfos Surge

Depth to Water: 102.1 Corrected: ____

Total Depth of Well: 116.0 Well Dia.: 2"-PVC

2.2 GPV 150' Tubing

DTW Time	TOTAL Gallons Purged	DEPTH OF PUMP	PURGE RATE	TURBIDITY	Comments
0911	INITIAL	111	0.8		TAN/Orange 242.1 Hz DTW = 102.4
0918	6.0	110	DTW = 102.5	>1000	TAN 252 Hz = 1.1 GPM
0926	15.0	109	DTW = 102.6 1.5 GPM		TAN 272 Hz = 1.5 GPM
0934	34.5	109	2.0	>1000	292 Hz Orange/TAN when surged
1000		Bot/109	"		
1018	125	109		34.1	Agitate >1000 orange/TAN
		Bot/105			Agitate orange/tan
1315		109			
1326	485	109	2.0	13.0	Slowed Pump to 262 ~~242~~ Hz
1352	520	109	1.3	4.70	STOP

Additional Comments: ____

WELL DEVELOPMENT FIELD REPORT Well No.: MW-15 Page 1 of ____

Job Name: Citrus County LandFill Project No.: ____

Date: 11/10/05 Weather: Cool, breezy morning, 31°C clear afternoon

Developer(s): S. Messick

Development Technique: pump and surge

Depth to Water: 116.33 ~~Corrected:~~ MPM-GNV-01

Total Depth of Well: 125.28 Well Dia.: 2" PVC flush mount

125.28 - 116.33 X 0.16 = 1.46 PV

DTW Time	Gallons Purged	DEPTH OF PUMP	PURGE RATE	TURBIDITY	Comments
0916	INITIAL	123	0.55 gpm 250 Hz	>1000	Very thick white to begin
1320	±132		↑265 Hz = 1.1 gpm		purge water gets very white after each surge.
1520	±132		↑275 Hz = 1.3 gpm		Can see tiny sand particles in turbidity cell.
1630	±91		↓250 Hz = 0.6 gpm		Purged last 30 minutes at slower purge rate without surging.
1700	±18				
	±373		7.72 NTU		

Additional Comments: Purge well until it begins clearing. Then surged thru entire water column. Placing pump back near bottom until clearing again. Well did draw down. Had to purge @ ± 0.5 GPM to begin. As well develo was able to increase purge rate. Use grundfos for 1st sampling so you can over purge if needed.

WELL DEVELOPMENT FIELD REPORT Well No.: MW-16 Page 1 of 1

Job Name: Citrus County Landfill Project No.:

Date: 11/9/05 Weather: mostly clear warm 28-31°C

Developer(s): S. Messick

Development Technique: pump and surge

Depth to Water: 112.86 ~~Corrected:~~ MPM-GWV-01

Total Depth of Well: 126.54 Well Dia.: 2" PVC flush mount

126.54 - 112.86 * 0.16 = 2.2 GPV

DTW Time	Gallons Purged	DEPTH OF PUMP	PURGE RATE	TURBIDITY	Comments
0915	INITIAL	moved pump thru water column.	2 GPM = 1.25 gpm	>1000 NTU	very turbid - milky brown to begin
1625	+/- 375		~~2.8 gpm~~	2.80 NTU	Purged final 30 minutes without surging

Additional Comments: I began by purging well until it begins clearing. Then surge through entire water column. I continued this until water cleared quickly. Then I purged from top of water column. Final turb. = 2.80 NTU

Pump failed after about 1½ hours. I had to pull back out of well. I rebuilt the pump and rewired the pump. Then continued same [illegible] time was about 2 hours

WELL DEVELOPMENT FIELD REPORT Well No.: MW-17 Page 1 of ____

Job Name: Citrus County Landfill Project No.: ____

Date: 11/11/05 Weather: Cool morning / clear warm later

Developer(s): S. Messick

Development Technique: pump and surge

Depth to Water: 104.12 Corrected: MPM-GNV-01

Total Depth of Well: 117.58 Well Dia.: 2" PVC flushmount

117.58 - 104.12(0.16) = 2.2 GPV

DTW Time	Gallons Purged	Depth of Pump	Purge Rate	Turbidity	Comments
0920	INITIAL	116	26.5 Hz = 1.25 gpm		white-to light brege to beg in (draw down 5 ft.)
1400	± 350				
1400		110 ft.	4.6 NTU		pumped final 15 minutes without surging

Additional Comments: Surge well thru entire water column. Then pumped from bottom until it starts clearing and repeat. Once bottom is developed moved pump to top of water column and did same thing. Use the grundfos pump to sample so you can over purge if needed

APPENDIX G

SLUG TEST DATA AND GRAPHS

In-Situ Inc. MiniTroll Pro

Report generated: 11/28/2005 11:11:43
Report from file: ...\SN14668 2005-11-22 114344 mw-10out.bin
Win-Situ Version 4.523

Serial number: 14668
Firmware Version 3.09
Unit name:

Test name: mw-10out

Test defined on: 11/22/2005 11:43:29
Test started on: 11/22/2005 11:43:44
Test stopped on: 11/22/2005 11:59:02

Data gathered using Logarithmic testing
Maximum time between data points: 5.0 Seconds.
Number of data samples: 233

TOTAL DATA SAMPLES 233

Channel number [2]
Measurement type: Pressure
Channel name: Depth
Sensor Range: 30 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Pressure Feet H2O	Elapsed Time	Change in Water Level (ft)	h/ho (ft)	T_{37} (sec)	T_{37} (min)
11/22/2005	11:43:44	0	13.782				15.9	0.265
11/22/2005	11:43:44	0.3	13.802					
11/22/2005	11:43:44	0.6	13.809					
11/22/2005	11:43:44	0.9	13.811					
11/22/2005	11:43:45	1.2	13.813					
11/22/2005	11:43:45	1.5	13.815					
11/22/2005	11:43:45	1.8	13.819					
11/22/2005	11:43:46	2.1	13.817					
11/22/2005	11:43:46	2.4	13.505					
11/22/2005	11:43:46	2.7	12.048					
11/22/2005	11:43:47	3	**10.748**	0	3.034	1		
11/22/2005	11:43:47	3.3	10.821	0.3	2.961	0.97594		
11/22/2005	11:43:47	3.6	12.206	0.6	1.576	0.51945		
11/22/2005	11:43:47	3.9	12.606	0.9	1.176	0.38761		
11/22/2005	11:43:48	4.2	10.952	1.2	2.83	0.93276		
11/22/2005	11:43:48	4.5	11.167	1.5	2.615	0.8619		
11/22/2005	11:43:48	4.8	11.409	1.8	2.373	0.78214		
11/22/2005	11:43:49	5.1	11.405	2.1	2.377	0.78345		

11/22/2005	11:43:49	5.4	11.493	2.4	2.289	0.75445
11/22/2005	11:43:49	5.7	11.512	2.7	2.27	0.74819
11/22/2005	11:43:50	6	11.595	3	2.187	0.72083
11/22/2005	11:43:50	6.4	11.624	3.4	2.158	0.71127
11/22/2005	11:43:50	6.7	11.683	3.7	2.099	0.69183
11/22/2005	11:43:51	7.1	11.732	4.1	2.05	0.67568
11/22/2005	11:43:51	7.5	11.805	4.5	1.977	0.65162
11/22/2005	11:43:52	8	11.854	5	1.928	0.63546
11/22/2005	11:43:52	8.4	11.903	5.4	1.879	0.61931
11/22/2005	11:43:52	8.9	11.978	5.9	1.804	0.59459
11/22/2005	11:43:53	9.5	12.029	6.5	1.753	0.57779
11/22/2005	11:43:54	10	12.081	7	1.701	0.56065
11/22/2005	11:43:54	10.6	12.149	7.6	1.633	0.53823
11/22/2005	11:43:55	11.3	12.195	8.3	1.587	0.52307
11/22/2005	11:43:55	11.9	12.26	8.9	1.522	0.50165
11/22/2005	11:43:56	12.6	12.313	9.6	1.469	0.48418
11/22/2005	11:43:57	13.4	12.367	10.4	1.415	0.46638
11/22/2005	11:43:58	14.2	12.416	11.2	1.366	0.45023
11/22/2005	11:43:59	15	12.466	12	1.316	0.43375
11/22/2005	11:43:59	15.9	12.519	12.9	1.263	0.41628
11/22/2005	11:44:00	16.8	12.563	13.8	1.219	0.40178
11/22/2005	11:44:01	17.8	12.599	14.8	1.183	0.38991
11/22/2005	11:44:02	18.9	12.648	**15.9**	1.134	0.37376
11/22/2005	11:44:04	20	12.69	17	1.092	0.35992
11/22/2005	11:44:05	21.2	12.721	18.2	1.061	0.3497
11/22/2005	11:44:06	22.4	12.776	19.4	1.006	0.33158
11/22/2005	11:44:07	23.8	12.833	20.8	0.949	0.31279
11/22/2005	11:44:09	25.2	12.867	22.2	0.915	0.30158
11/22/2005	11:44:10	26.7	12.913	23.7	0.869	0.28642
11/22/2005	11:44:12	28.2	12.97	25.2	0.812	0.26763
11/22/2005	11:44:13	29.8	12.995	26.8	0.787	0.25939
11/22/2005	11:44:15	31.5	13.046	28.5	0.736	0.24258
11/22/2005	11:44:17	33.3	13.082	30.3	0.7	0.23072
11/22/2005	11:44:19	35.2	13.117	32.2	0.665	0.21918
11/22/2005	11:44:21	37.3	13.145	34.3	0.637	0.20995
11/22/2005	11:44:23	39.5	13.176	36.5	0.606	0.19974
11/22/2005	11:44:25	41.8	13.2	38.8	0.582	0.19183
11/22/2005	11:44:28	44.3	13.217	41.3	0.565	0.18622
11/22/2005	11:44:30	46.9	13.231	43.9	0.551	0.18161
11/22/2005	11:44:33	49.7	13.25	46.7	0.532	0.17535
11/22/2005	11:44:36	52.6	13.257	49.6	0.525	0.17304
11/22/2005	11:44:39	55.7	13.267	52.7	0.515	0.16974
11/22/2005	11:44:43	59	13.271	56	0.511	0.16842
11/22/2005	11:44:46	62.5	13.28	59.5	0.502	0.16546
11/22/2005	11:44:50	66.2	13.286	63.2	0.496	0.16348
11/22/2005	11:44:54	70.1	13.29	67.1	0.492	0.16216
11/22/2005	11:44:58	74.3	13.296	71.3	0.486	0.16018
11/22/2005	11:45:02	78.7	13.301	75.7	0.481	0.15854
11/22/2005	11:45:07	83.4	13.305	80.4	0.477	0.15722
11/22/2005	11:45:12	88.4	13.309	85.4	0.473	0.1559
11/22/2005	11:45:17	93.4	13.311	90.4	0.471	0.15524
11/22/2005	11:45:22	98.4	13.315	95.4	0.467	0.15392

In-Situ Inc. MiniTroll Pro

Report generated: 11/28/2005 11:06:19
Report from file: ...\SN14668 2005-11-17 135616 mw-11out.bin
Win-Situ Version 4.523

Serial number: 14668
Firmware Version 3.09
Unit name:

Test name: mw-11out

Test defined on: 11/17/2005 13:55:48
Test started on: 11/17/2005 13:56:16
Test stopped on: 11/17/2005 14:07:38

Data gathered using Logarithmic testing
Maximum time between data points: 10.0 Seconds.
Number of data samples: 130

TOTAL DATA SAMPLES 130

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure
Channel name: Depth
Sensor Range: 30 PSIG.
Specific gravity: 1

Date	Time	ET (se	Chan[2] PressureFeet H2O	Elapsed Time	Change in Water Level (ft)	h/ho (ft)	T_{37} (sec)	T_{37} (min)
11/17/2005	13:56:16	0	11.411				2.8	0.046667
11/17/2005	13:56:16	0.3	11.432					
11/17/2005	13:56:17	0.6	11.437					
11/17/2005	13:56:17	0.9	11.439					
11/17/2005	13:56:17	1.2	11.435					
11/17/2005	13:56:18	1.5	11.414					
11/17/2005	13:56:18	1.8	11.349					
11/17/2005	13:56:18	2.1	**11.33**	0	0.081	1		
11/17/2005	13:56:18	2.4	11.357	0.3	0.054	0.666667		
11/17/2005	13:56:19	2.7	11.345	0.6	0.066	0.814815		
11/17/2005	13:56:19	3	11.334	0.9	0.077	0.950617		
11/17/2005	13:56:19	3.3	11.357	1.2	0.054	0.666667		
11/17/2005	13:56:20	3.6	11.351	1.5	0.06	0.740741		
11/17/2005	13:56:20	3.9	11.374	1.8	0.037	0.45679		
11/17/2005	13:56:20	4.2	11.378	2.1	0.033	0.407407		

11/17/2005	13:56:21	4.5	11.368	2.4	0.043	0.530864
11/17/2005	13:56:21	4.8	11.372	2.7	0.039	0.481481
11/17/2005	13:56:21	5.1	11.389	3	0.022	0.271605
11/17/2005	13:56:21	5.4	11.406	3.3	0.005	0.061728
11/17/2005	13:56:22	5.7	11.4	3.6	0.011	0.135802
11/17/2005	13:56:22	6	11.381	3.9	0.03	0.37037
11/17/2005	13:56:22	6.4	11.38	4.3	0.031	0.382716
11/17/2005	13:56:23	6.7	11.385	4.6	0.026	0.320988
11/17/2005	13:56:23	7.1	11.393	5	0.018	0.222222
11/17/2005	13:56:24	7.5	11.393	5.4	0.018	0.222222
11/17/2005	13:56:24	8	11.391	5.9	0.02	0.246914
11/17/2005	13:56:25	8.4	11.406	6.3	0.005	0.061728
11/17/2005	13:56:25	8.9	11.423	6.8	-0.012	-0.148148
11/17/2005	13:56:26	9.5	11.431	7.4	-0.02	-0.246914
11/17/2005	13:56:26	10	11.418	7.9	-0.007	-0.08642
11/17/2005	13:56:27	10.6	11.418	8.5	-0.007	-0.08642
11/17/2005	13:56:27	11.3	11.418	9.2	-0.007	-0.08642
11/17/2005	13:56:28	11.9	11.416	9.8	-0.005	-0.061728
11/17/2005	13:56:29	12.6	11.412	10.5	-0.001	-0.012346
11/17/2005	13:56:29	13.4	11.412	11.3	-0.001	-0.012346
11/17/2005	13:56:30	14.2	11.412	12.1	-0.001	-0.012346
11/17/2005	13:56:31	15	11.41	12.9	0.001	0.012346
11/17/2005	13:56:32	15.9	11.41	13.8	0.001	0.012346
11/17/2005	13:56:33	16.8	11.41	14.7	0.001	0.012346
11/17/2005	13:56:34	17.8	11.408	15.7	0.003	0.037037
11/17/2005	13:56:35	18.9	11.409	16.8	0.002	0.024691
11/17/2005	13:56:36	20	11.407	17.9	0.004	0.049383
11/17/2005	13:56:37	21.2	11.407	19.1	0.004	0.049383
11/17/2005	13:56:39	22.4	11.407	20.3	0.004	0.049383
11/17/2005	13:56:40	23.8	11.405	21.7	0.006	0.074074
11/17/2005	13:56:41	25.2	11.405	23.1	0.006	0.074074
11/17/2005	13:56:43	26.7	11.405	24.6	0.006	0.074074
11/17/2005	13:56:44	28.2	11.405	26.1	0.006	0.074074
11/17/2005	13:56:46	29.8	11.405	27.7	0.006	0.074074
11/17/2005	13:56:48	31.5	11.403	29.4	0.008	0.098765
11/17/2005	13:56:49	33.3	11.403	31.2	0.008	0.098765
11/17/2005	13:56:51	35.2	11.403	33.1	0.008	0.098765
11/17/2005	13:56:53	37.3	11.401	35.2	0.01	0.123457
11/17/2005	13:56:56	39.5	11.401	37.4	0.01	0.123457
11/17/2005	13:56:58	41.8	11.401	39.7	0.01	0.123457
11/17/2005	13:57:00	44.3	11.401	42.2	0.01	0.123457
11/17/2005	13:57:03	46.9	11.401	44.8	0.01	0.123457
11/17/2005	13:57:06	49.7	11.401	47.6	0.01	0.123457
11/17/2005	13:57:09	52.6	11.401	50.5	0.01	0.123457
11/17/2005	13:57:12	55.7	11.401	53.6	0.01	0.123457
11/17/2005	13:57:15	59	11.401	56.9	0.01	0.123457
11/17/2005	13:57:19	62.5	11.399	60.4	0.012	0.148148
11/17/2005	13:57:22	66.2	11.399	64.1	0.012	0.148148
11/17/2005	13:57:26	70.1	11.397	68	0.014	0.17284
11/17/2005	13:57:30	74.3	11.401	72.2	0.01	0.123457
11/17/2005	13:57:35	78.7	11.396	76.6	0.015	0.185185
11/17/2005	13:57:39	83.4	11.396	81.3	0.015	0.185185

In-Situ Inc. MiniTroll Pro

Report generated: 11/28/2005 11:07:08
Report from file: ...\SN14668 2005-11-17 150933 mw-12out.bin
Win-Situ Version 4.523

Serial number: 14668
Firmware Version 3.09
Unit name:

Test name: mw-12out

Test defined on: 11/17/2005 15:08:58
Test started on: 11/17/2005 15:09:33
Test stopped on: 11/17/2005 15:16:42

Data gathered using Logarithmic testing
Maximum time between data points: 5.0 Seconds.
Number of data samples: 136

TOTAL DATA SAMPLES 136

Channel number [2]
Measurement type: Pressure
Channel name: Depth
Sensor Range: 30 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Pressure Feet H2O	Elapsed Time	Change in Water Level (ft)	h/ho (ft)	T_{37} (sec)	T_{37} (min)
11/17/2005	15:09:33	0	11.148				3.1	0.051667
11/17/2005	15:09:33	0.3	11.167					
11/17/2005	15:09:34	0.6	11.174					
11/17/2005	15:09:34	0.9	11.178					
11/17/2005	15:09:34	1.2	11.182					
11/17/2005	15:09:35	1.5	11.182					
11/17/2005	15:09:35	1.8	11.184					
11/17/2005	15:09:35	2.1	11.184					
11/17/2005	15:09:35	2.4	10.276					
11/17/2005	15:09:36	2.7	10.455					
11/17/2005	15:09:36	3	10.407					
11/17/2005	15:09:36	3.3	10.618					
11/17/2005	15:09:37	3.6	10.925					
11/17/2005	15:09:37	3.9	10.909					
11/17/2005	15:09:37	4.2	10.323					
11/17/2005	15:09:38	4.5	10.677					
11/17/2005	15:09:38	4.8	10.846					
11/17/2005	15:09:38	5.1	10.707					

11/17/2005	15:09:38	5.4	10.852			
11/17/2005	15:09:39	5.7	10.607			
11/17/2005	15:09:39	6	10.14			
11/17/2005	15:09:39	6.4	10.58			
11/17/2005	15:09:40	6.7	10.022			
11/17/2005	15:09:40	7.1	10.11			
11/17/2005	15:09:41	7.5	**9.778**	0	1.37	1
11/17/2005	15:09:41	8	9.818	0.5	1.33	0.970803
11/17/2005	15:09:41	8.4	10.054	0.9	1.094	0.79854
11/17/2005	15:09:42	8.9	9.959	1.4	1.189	0.867883
11/17/2005	15:09:43	9.5	10.224	2	0.924	0.674453
11/17/2005	15:09:43	10	10.46	2.5	0.688	0.50219
11/17/2005	15:09:44	10.6	10.662	**3.1**	0.486	0.354745
11/17/2005	15:09:44	11.3	10.839	3.8	0.309	0.225547
11/17/2005	15:09:45	11.9	10.969	4.4	0.179	0.130657
11/17/2005	15:09:46	12.6	11.064	5.1	0.084	0.061314
11/17/2005	15:09:46	13.4	11.125	5.9	0.023	0.016788
11/17/2005	15:09:47	14.2	11.14	6.7	0.008	0.005839
11/17/2005	15:09:48	15	11.14	7.5	0.008	0.005839
11/17/2005	15:09:49	15.9	11.14	8.4	0.008	0.005839
11/17/2005	15:09:50	16.8	11.14	9.3	0.008	0.005839
11/17/2005	15:09:51	17.8	11.142	10.3	0.006	0.00438
11/17/2005	15:09:52	18.9	11.14	11.4	0.008	0.005839
11/17/2005	15:09:53	20	11.142	12.5	0.006	0.00438
11/17/2005	15:09:54	21.2	11.138	13.7	0.01	0.007299
11/17/2005	15:09:55	22.4	11.14	14.9	0.008	0.005839
11/17/2005	15:09:57	23.8	11.14	16.3	0.008	0.005839
11/17/2005	15:09:58	25.2	11.14	17.7	0.008	0.005839
11/17/2005	15:10:00	26.7	11.136	19.2	0.012	0.008759
11/17/2005	15:10:01	28.2	11.136	20.7	0.012	0.008759
11/17/2005	15:10:03	29.8	11.14	22.3	0.008	0.005839
11/17/2005	15:10:05	31.5	11.144	24	0.004	0.00292
11/17/2005	15:10:06	33.3	11.131	25.8	0.017	0.012409
11/17/2005	15:10:08	35.2	11.142	27.7	0.006	0.00438
11/17/2005	15:10:10	37.3	11.139	29.8	0.009	0.006569
11/17/2005	15:10:13	39.5	11.15	32	-0.002	-0.00146
11/17/2005	15:10:15	41.8	11.129	34.3	0.019	0.013869
11/17/2005	15:10:17	44.3	11.142	36.8	0.006	0.00438
11/17/2005	15:10:20	46.9	11.14	39.4	0.008	0.005839
11/17/2005	15:10:23	49.7	11.139	42.2	0.009	0.006569
11/17/2005	15:10:26	52.6	11.146			
11/17/2005	15:10:29	55.7	11.148			
11/17/2005	15:10:32	59	11.15			
11/17/2005	15:10:36	62.5	11.146			
11/17/2005	15:10:39	66.2	11.148			
11/17/2005	15:10:43	70.1	11.148			
11/17/2005	15:10:47	74.3	11.148			
11/17/2005	15:10:52	78.7	11.148			
11/17/2005	15:10:56	83.4	11.15			
11/17/2005	15:11:01	88.4	11.15			
11/17/2005	15:11:06	93.4	11.15			
11/17/2005	15:11:11	98.4	11.15			

In-Situ Inc. MiniTroll Pro

Report generated: 11/28/2005 11:08:21
Report from file: ...\SN14668 2005-11-18 100024 mw-13out.bin
Win-Situ Version 4.523

Serial number: 14668
Firmware Version 3.09
Unit name:

Test name: mw-13out

Test defined on: 11/18/2005 9:43:57
Test started on: 11/18/2005 10:00:24
Test stopped on: 11/18/2005 10:17:35

Data gathered using Logarithmic testing
Maximum time between data points: 5.0 Seconds.
Number of data samples: 256

TOTAL DATA SAMPLES 256

Channel number [2]
Measurement type: Pressure
Channel name: Depth
Sensor Range: 30 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Pressure Feet H2O	Elapsed Time	Change in Water Level (ft)	h/ho (ft)	T_{37} (sec)	T_{37} (min)
11/18/2005	10:00:24	0	13.782				19	0.316667
11/18/2005	10:00:24	0.3	13.802					
11/18/2005	10:00:25	0.6	13.808					
11/18/2005	10:00:25	0.9	13.811					
11/18/2005	10:00:25	1.2	13.804					
11/18/2005	10:00:26	1.5	13.585					
11/18/2005	10:00:26	1.8	12.423					
11/18/2005	10:00:26	2.1	12.473					
11/18/2005	10:00:27	2.4	13.046					
11/18/2005	10:00:27	2.7	12.536					
11/18/2005	10:00:27	3	11.854					
11/18/2005	10:00:27	3.3	11.826					
11/18/2005	10:00:28	3.6	12.001					
11/18/2005	10:00:28	3.9	12.399					
11/18/2005	10:00:28	4.2	11.795					
11/18/2005	10:00:29	4.5	11.31					

11/18/2005	10:00:29	4.8	11.89			
11/18/2005	10:00:29	5.1	11.654			
11/18/2005	10:00:30	5.4	**10.771**	0	3.011	1
11/18/2005	10:00:30	5.7	11.06	0.3	2.722	0.904019
11/18/2005	10:00:30	6	11.068	0.6	2.714	0.901362
11/18/2005	10:00:31	6.4	11.087	1	2.695	0.895051
11/18/2005	10:00:31	6.7	11.142	1.3	2.64	0.876785
11/18/2005	10:00:31	7.1	11.197	1.7	2.585	0.858519
11/18/2005	10:00:32	7.5	11.255	2.1	2.527	0.839256
11/18/2005	10:00:32	8	11.312	2.6	2.47	0.820325
11/18/2005	10:00:33	8.4	11.359	3	2.423	0.804716
11/18/2005	10:00:33	8.9	11.416	3.5	2.366	0.785785
11/18/2005	10:00:34	9.5	11.468	4.1	2.314	0.768515
11/18/2005	10:00:34	10	11.523	4.6	2.259	0.750249
11/18/2005	10:00:35	10.6	11.578	5.2	2.204	0.731983
11/18/2005	10:00:35	11.3	11.641	5.9	2.141	0.711059
11/18/2005	10:00:36	11.9	11.706	6.5	2.076	0.689472
11/18/2005	10:00:37	12.6	11.769	7.2	2.013	0.668549
11/18/2005	10:00:38	13.4	11.839	8	1.943	0.645301
11/18/2005	10:00:38	14.2	11.914	8.8	1.868	0.620392
11/18/2005	10:00:39	15	11.986	9.6	1.796	0.59648
11/18/2005	10:00:40	15.9	12.06	10.5	1.722	0.571903
11/18/2005	10:00:41	16.8	12.144	11.4	1.638	0.544005
11/18/2005	10:00:42	17.8	12.226	12.4	1.556	0.516772
11/18/2005	10:00:43	18.9	12.304	13.5	1.478	0.490867
11/18/2005	10:00:44	20	12.386	14.6	1.396	0.463633
11/18/2005	10:00:45	21.2	12.473	15.8	1.309	0.434739
11/18/2005	10:00:47	22.4	12.557	17	1.225	0.406842
11/18/2005	10:00:48	23.8	12.635	**18.4**	1.147	0.380937
11/18/2005	10:00:49	25.2	12.715	**19.8**	1.067	0.354367
11/18/2005	10:00:51	26.7	12.797	21.3	0.985	0.327134
11/18/2005	10:00:52	28.2	12.865	22.8	0.917	0.30455
11/18/2005	10:00:54	29.8	12.922	24.4	0.86	0.285619
11/18/2005	10:00:56	31.5	12.993	26.1	0.789	0.262039
11/18/2005	10:00:57	33.3	13.037	27.9	0.745	0.247426
11/18/2005	10:00:59	35.2	13.084	29.8	0.698	0.231817
11/18/2005	10:01:01	37.3	13.122	31.9	0.66	0.219196
11/18/2005	10:01:04	39.5	13.157	34.1	0.625	0.207572
11/18/2005	10:01:06	41.8	13.187	36.4	0.595	0.197609
11/18/2005	10:01:08	44.3	13.219	38.9	0.563	0.186981
11/18/2005	10:01:11	46.9	13.225	41.5	0.557	0.184988
11/18/2005	10:01:14	49.7	13.267	44.3	0.515	0.17104
11/18/2005	10:01:17	52.6	13.286	47.2	0.496	0.164729
11/18/2005	10:01:20	55.7	13.297	50.3	0.485	0.161076
11/18/2005	10:01:23	59	13.315	53.6	0.467	0.155098
11/18/2005	10:01:27	62.5	13.318	57.1	0.464	0.154102
11/18/2005	10:01:30	66.2	13.332	60.8	0.45	0.149452
11/18/2005	10:01:34	70.1	13.358	64.7	0.424	0.140817
11/18/2005	10:01:38	74.3	13.364	68.9	0.418	0.138824
11/18/2005	10:01:43	78.7	13.385	73.3	0.397	0.13185
11/18/2005	10:01:48	83.4	13.398	78	0.384	0.127532
11/18/2005	10:01:53	88.4	13.406	83	0.376	0.124875

In-Situ Inc. MiniTroll Pro

Report generated: 11/28/2005 11:09:05
Report from file: ...\SN14668 2005-11-18 110311 mw-14out.bin
Win-Situ Version 4.523

Serial number: 14668
Firmware Version 3.09
Unit name:

Test name: mw-14out

Test defined on: 11/18/2005 11:02:38
Test started on: 11/18/2005 11:03:11
Test stopped on: 11/18/2005 11:11:55

Data gathered using Logarithmic testing
Maximum time between data points: 5.0 Seconds.
Number of data samples: 155

TOTAL DATA SAMPLES 155

Channel number [2]
Measurement type: Pressure
Channel name: Depth
Sensor Range: 30 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Pressure Feet H2O	Elapsed Time	Change in Water Level (ft)	h/ho (ft)	T_{37} (sec)	T_{37} (min)
11/18/2005	11:03:11	0	12.652				**4.3**	0.071667
11/18/2005	11:03:12	0.3	12.67					
11/18/2005	11:03:12	0.6	12.678					
11/18/2005	11:03:12	0.9	12.676					
11/18/2005	11:03:13	1.2	12.55					
11/18/2005	11:03:13	1.5	11.665					
11/18/2005	11:03:13	1.8	**11.265**	0	1.387	1		
11/18/2005	11:03:14	2.1	11.57	0.3	1.082	0.780101		
11/18/2005	11:03:14	2.4	11.96	0.6	0.692	0.498919		
11/18/2005	11:03:14	2.7	11.842	0.9	0.81	0.583994		
11/18/2005	11:03:14	3	11.674	1.2	0.978	0.705119		
11/18/2005	11:03:15	3.3	11.577	1.5	1.075	0.775054		
11/18/2005	11:03:15	3.6	11.802	1.8	0.85	0.612833		
11/18/2005	11:03:15	3.9	12.262	2.1	0.39	0.281182		
11/18/2005	11:03:16	4.2	12.558	2.4	0.094	0.067772		
11/18/2005	11:03:16	4.5	12.723	2.7	-0.071	-0.05119		

11/18/2005	11:03:16	4.8	12.365	3	0.287	0.206921
11/18/2005	11:03:17	5.1	12.076	3.3	0.576	0.415285
11/18/2005	11:03:17	5.4	11.596	3.6	1.056	0.761355
11/18/2005	11:03:17	5.7	11.91	3.9	0.742	0.534968
11/18/2005	11:03:17	6	12.045	**4.2**	0.607	0.437635
11/18/2005	11:03:18	6.4	12.43	**4.6**	0.222	0.160058
11/18/2005	11:03:18	6.7	12.434	4.9	0.218	0.157174
11/18/2005	11:03:19	7.1	12.536	5.3	0.116	0.083634
11/18/2005	11:03:19	7.5	12.588	5.7	0.064	0.046143
11/18/2005	11:03:19	8	12.624	6.2	0.028	0.020187
11/18/2005	11:03:20	8.4	12.641	6.6	0.011	0.007931
11/18/2005	11:03:20	8.9	12.647	7.1	0.005	0.003605
11/18/2005	11:03:21	9.5	12.649	7.7	0.003	0.002163
11/18/2005	11:03:21	10	12.632	8.2	0.02	0.01442
11/18/2005	11:03:22	10.6	12.628	8.8	0.024	0.017304
11/18/2005	11:03:23	11.3	12.626	9.5	0.026	0.018745
11/18/2005	11:03:23	11.9	12.626	10.1	0.026	0.018745
11/18/2005	11:03:24	12.6	12.624	10.8	0.028	0.020187
11/18/2005	11:03:25	13.4	12.623	11.6	0.029	0.020908
11/18/2005	11:03:26	14.2	12.624	12.4	0.028	0.020187
11/18/2005	11:03:26	15	12.624	13.2	0.028	0.020187
11/18/2005	11:03:27	15.9	12.623	14.1	0.029	0.020908
11/18/2005	11:03:28	16.8	12.623			
11/18/2005	11:03:29	17.8	12.624			
11/18/2005	11:03:30	18.9	12.625			
11/18/2005	11:03:31	20	12.624			
11/18/2005	11:03:33	21.2	12.624			
11/18/2005	11:03:34	22.4	12.624			
11/18/2005	11:03:35	23.8	12.626			
11/18/2005	11:03:37	25.2	12.626			
11/18/2005	11:03:38	26.7	12.625			
11/18/2005	11:03:40	28.2	12.627			
11/18/2005	11:03:41	29.8	12.627			
11/18/2005	11:03:43	31.5	12.629			
11/18/2005	11:03:45	33.3	12.628			
11/18/2005	11:03:47	35.2	12.628			
11/18/2005	11:03:49	37.3	12.63			
11/18/2005	11:03:51	39.5	12.632			
11/18/2005	11:03:53	41.8	12.634			
11/18/2005	11:03:56	44.3	12.634			
11/18/2005	11:03:58	46.9	12.636			
11/18/2005	11:04:01	49.7	12.634			
11/18/2005	11:04:04	52.6	12.634			
11/18/2005	11:04:07	55.7	12.636			
11/18/2005	11:04:10	59	12.636			
11/18/2005	11:04:14	62.5	12.64			
11/18/2005	11:04:18	66.2	12.64			
11/18/2005	11:04:22	70.1	12.638			
11/18/2005	11:04:26	74.3	12.644			
11/18/2005	11:04:30	78.7	12.644			
11/18/2005	11:04:35	83.4	12.646			
11/18/2005	11:04:40	88.4	12.65			

In-Situ Inc. MiniTroll Pro

Report generated: 11/28/2005 11:09:27
Report from file: ...\SN14668 2005-11-18 130151 mw-15out.bin
Win-Situ Version 4.523

Serial number: 14668
Firmware Version 3.09
Unit name:

Test name: mw-15out

Test defined on: 11/18/2005 13:01:37
Test started on: 11/18/2005 13:01:51
Test stopped on: N/A N/A

Data gathered using Logarithmic testing
Maximum time between data points: 5.0 Seconds.
Number of data samples: 289

TOTAL DATA SAMPLES 289

Channel number [2]
Measurement type: Pressure
Channel name: Depth
Sensor Range: 30 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Pressure Feet H2O	Elapsed Time	Change in Water Level (ft)	h/ho (ft)	T_{37} (sec)	T_{37} (min)
11/18/2005	13:01:51	0	11.111				5.9	0.098333
11/18/2005	13:01:51	0.3	11.136					
11/18/2005	13:01:52	0.6	11.15					
11/18/2005	13:01:52	0.9	11.147					
11/18/2005	13:01:52	1.2	11.089					
11/18/2005	13:01:53	1.5	10.874					
11/18/2005	13:01:53	1.8	9.901					
11/18/2005	13:01:53	2.1	9.385					
11/18/2005	13:01:54	2.4	9.368					
11/18/2005	13:01:54	2.7	10.04					
11/18/2005	13:01:54	3	10.908					
11/18/2005	13:01:54	3.3	10.503					
11/18/2005	13:01:55	3.6	11.159					
11/18/2005	13:01:55	3.9	11.279					
11/18/2005	13:01:55	4.2	10.944					
11/18/2005	13:01:56	4.5	10.423					

11/18/2005	13:01:56	4.8	9.558			
11/18/2005	13:01:56	5.1	9.435			
11/18/2005	13:01:57	5.4	9.345			
11/18/2005	13:01:57	5.7	8.881			
11/18/2005	13:01:57	6	8.688			
11/18/2005	13:01:57	6.4	8.511			
11/18/2005	13:01:58	6.7	**8.473**	0	2.638	1
11/18/2005	13:01:58	7.1	8.546	0.4	2.565	0.972328
11/18/2005	13:01:59	7.5	8.605	0.8	2.506	0.949962
11/18/2005	13:01:59	8	8.911	1.3	2.2	0.833965
11/18/2005	13:02:00	8.4	9.509	1.7	1.602	0.607278
11/18/2005	13:02:00	8.9	9.625	2.2	1.486	0.563306
11/18/2005	13:02:01	9.5	9.707	2.8	1.404	0.532221
11/18/2005	13:02:01	10	9.739	3.3	1.372	0.520091
11/18/2005	13:02:02	10.6	9.781	3.9	1.33	0.50417
11/18/2005	13:02:02	11.3	9.859	4.6	1.252	0.474602
11/18/2005	13:02:03	11.9	9.97	5.2	1.141	0.432525
11/18/2005	13:02:04	12.6	10.101	**5.9**	1.01	0.382866
11/18/2005	13:02:04	13.4	10.202	6.7	0.909	0.344579
11/18/2005	13:02:05	14.2	10.333	7.5	0.778	0.29492
11/18/2005	13:02:06	15	10.387	8.3	0.724	0.27445
11/18/2005	13:02:07	15.9	10.52	9.2	0.591	0.224033
11/18/2005	13:02:08	16.8	10.585	10.1	0.526	0.199393
11/18/2005	13:02:09	17.8	10.711	11.1	0.4	0.15163
11/18/2005	13:02:10	18.9	10.783	12.2	0.328	0.124337
11/18/2005	13:02:11	20	10.852	13.3	0.259	0.09818
11/18/2005	13:02:12	21.2	10.945	14.5	0.166	0.062926
11/18/2005	13:02:14	22.4	11.015	15.7	0.096	0.036391
11/18/2005	13:02:15	23.8	11.078	17.1	0.033	0.012509
11/18/2005	13:02:16	25.2	11.139	18.5	-0.028	-0.010614
11/18/2005	13:02:18	26.7	11.189	20	-0.078	-0.029568
11/18/2005	13:02:19	28.2	11.236	21.5	-0.125	-0.047384
11/18/2005	13:02:21	29.8	11.278	23.1	-0.167	-0.063306
11/18/2005	13:02:23	31.5	11.318	24.8	-0.207	-0.078469
11/18/2005	13:02:24	33.3	11.35	26.6	-0.239	-0.090599
11/18/2005	13:02:26	35.2	11.384			
11/18/2005	13:02:28	37.3	11.417			
11/18/2005	13:02:31	39.5	11.44			
11/18/2005	13:02:33	41.8	11.478			
11/18/2005	13:02:35	44.3	11.499			
11/18/2005	13:02:38	46.9	11.521			
11/18/2005	13:02:41	49.7	11.544			
11/18/2005	13:02:44	52.6	11.569			
11/18/2005	13:02:47	55.7	11.588			
11/18/2005	13:02:50	59	11.607			
11/18/2005	13:02:54	62.5	11.62			
11/18/2005	13:02:57	66.2	11.636			
11/18/2005	13:03:01	70.1	11.649			
11/18/2005	13:03:05	74.3	11.658			
11/18/2005	13:03:10	78.7	11.666			
11/18/2005	13:03:14	83.4	11.676			
11/18/2005	13:03:19	88.4	11.682			

In-Situ Inc. MiniTroll Pro

Report generated: 11/28/2005 11:12:30
Report from file: ...\SN14668 2005-11-22 132541 mw-16out.bin
Win-Situ Version 4.523

Serial number: 14668
Firmware Version 3.09
Unit name:

Test name: mw-16out

Test defined on: 11/22/2005 13:25:00
Test started on: 11/22/2005 13:25:41
Test stopped on: 11/22/2005 13:34:41

Data gathered using Logarithmic testing
Maximum time between data points: 5.0 Seconds.
Number of data samples: 158

TOTAL DATA SAMPLES 158

Channel number [2]
Measurement type: Pressure
Channel name: Depth
Sensor Range: 30 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Pressure Feet H2O	Elapsed Time	Change in Water Level (ft)	h/ho (ft)	T_{37} (sec)	T_{37} (min)
11/22/2005	13:25:41	0	13.615				11	0.183333
11/22/2005	13:25:41	0.3	13.635					
11/22/2005	13:25:41	0.6	13.639					
11/22/2005	13:25:42	0.9	13.654					
11/22/2005	13:25:42	1.2	13.646					
11/22/2005	13:25:42	1.5	13.658					
11/22/2005	13:25:42	1.8	13.65					
11/22/2005	13:25:43	2.1	11.37					
11/22/2005	13:25:43	2.4	12.725					
11/22/2005	13:25:43	2.7	11.347	0	2.268	1		
11/22/2005	13:25:44	3	11.51	0.3	2.105	0.928131		
11/22/2005	13:25:44	3.3	11.684	0.6	1.931	0.851411		
11/22/2005	13:25:44	3.6	11.746	0.9	1.869	0.824074		
11/22/2005	13:25:45	3.9	11.783	1.2	1.832	0.80776		
11/22/2005	13:25:45	4.2	11.832	1.5	1.783	0.786155		
11/22/2005	13:25:45	4.5	11.864	1.8	1.751	0.772046		

11/22/2005	13:25:45	4.8	11.912	2.1	1.703	0.750882
11/22/2005	13:25:46	5.1	11.95	2.4	1.665	0.734127
11/22/2005	13:25:46	5.4	11.99	2.7	1.625	0.71649
11/22/2005	13:25:46	5.7	12.018	3	1.597	0.704145
11/22/2005	13:25:47	6	12.055	3.3	1.56	0.687831
11/22/2005	13:25:47	6.4	12.108	3.7	1.507	0.664462
11/22/2005	13:25:47	6.7	12.142	4	1.473	0.649471
11/22/2005	13:25:48	7.1	12.192	4.4	1.423	0.627425
11/22/2005	13:25:48	7.5	12.232	4.8	1.383	0.609788
11/22/2005	13:25:49	8	12.285	5.3	1.33	0.58642
11/22/2005	13:25:49	8.4	12.336	5.7	1.279	0.563933
11/22/2005	13:25:50	8.9	12.386	6.2	1.229	0.541887
11/22/2005	13:25:50	9.5	12.435	6.8	1.18	0.520282
11/22/2005	13:25:51	10	12.476	7.3	1.139	0.502205
11/22/2005	13:25:51	10.6	12.538	7.9	1.077	0.474868
11/22/2005	13:25:52	11.3	12.588	8.6	1.027	0.452822
11/22/2005	13:25:53	11.9	12.639	9.2	0.976	0.430335
11/22/2005	13:25:53	12.6	12.692	9.9	0.923	0.406966
11/22/2005	13:25:54	13.4	12.746	**10.7**	0.869	0.383157
11/22/2005	13:25:55	14.2	12.796	**11.5**	0.819	0.361111
11/22/2005	13:25:56	15	12.851	12.3	0.764	0.336861
11/22/2005	13:25:57	15.9	12.906	13.2	0.709	0.31261
11/22/2005	13:25:57	16.8	12.952	14.1	0.663	0.292328
11/22/2005	13:25:58	17.8	12.992			
11/22/2005	13:26:00	18.9	13.035			
11/22/2005	13:26:01	20	13.073			
11/22/2005	13:26:02	21.2	13.108			
11/22/2005	13:26:03	22.4	13.146			
11/22/2005	13:26:04	23.8	13.159			
11/22/2005	13:26:06	25.2	13.188			
11/22/2005	13:26:07	26.7	13.212			
11/22/2005	13:26:09	28.2	13.233			
11/22/2005	13:26:10	29.8	13.252			
11/22/2005	13:26:12	31.5	13.27			
11/22/2005	13:26:14	33.3	13.285			
11/22/2005	13:26:16	35.2	13.304			
11/22/2005	13:26:18	37.3	13.313			
11/22/2005	13:26:20	39.5	13.33			
11/22/2005	13:26:22	41.8	13.338			
11/22/2005	13:26:25	44.3	13.348			
11/22/2005	13:26:28	46.9	13.363			
11/22/2005	13:26:30	49.7	13.374			
11/22/2005	13:26:33	52.6	13.378			
11/22/2005	13:26:36	55.7	13.388			
11/22/2005	13:26:40	59	13.405			
11/22/2005	13:26:43	62.5	13.416			
11/22/2005	13:26:47	66.2	13.422			
11/22/2005	13:26:51	70.1	13.435			
11/22/2005	13:26:55	74.3	13.441			
11/22/2005	13:26:59	78.7	13.448			
11/22/2005	13:27:04	83.4	13.46			
11/22/2005	13:27:09	88.4	13.466			

In-Situ Inc. MiniTroll Pro

Report generated: 11/28/2005 11:10:53
Report from file: ...\SN14668 2005-11-22 103806 mw-17out.bin
Win-Situ Version 4.523

Serial number: 14668
Firmware Version 3.09
Unit name:

Test name: mw-17out

Test defined on: 11/22/2005 10:37:39
Test started on: 11/22/2005 10:38:06
Test stopped on: 11/22/2005 10:46:32

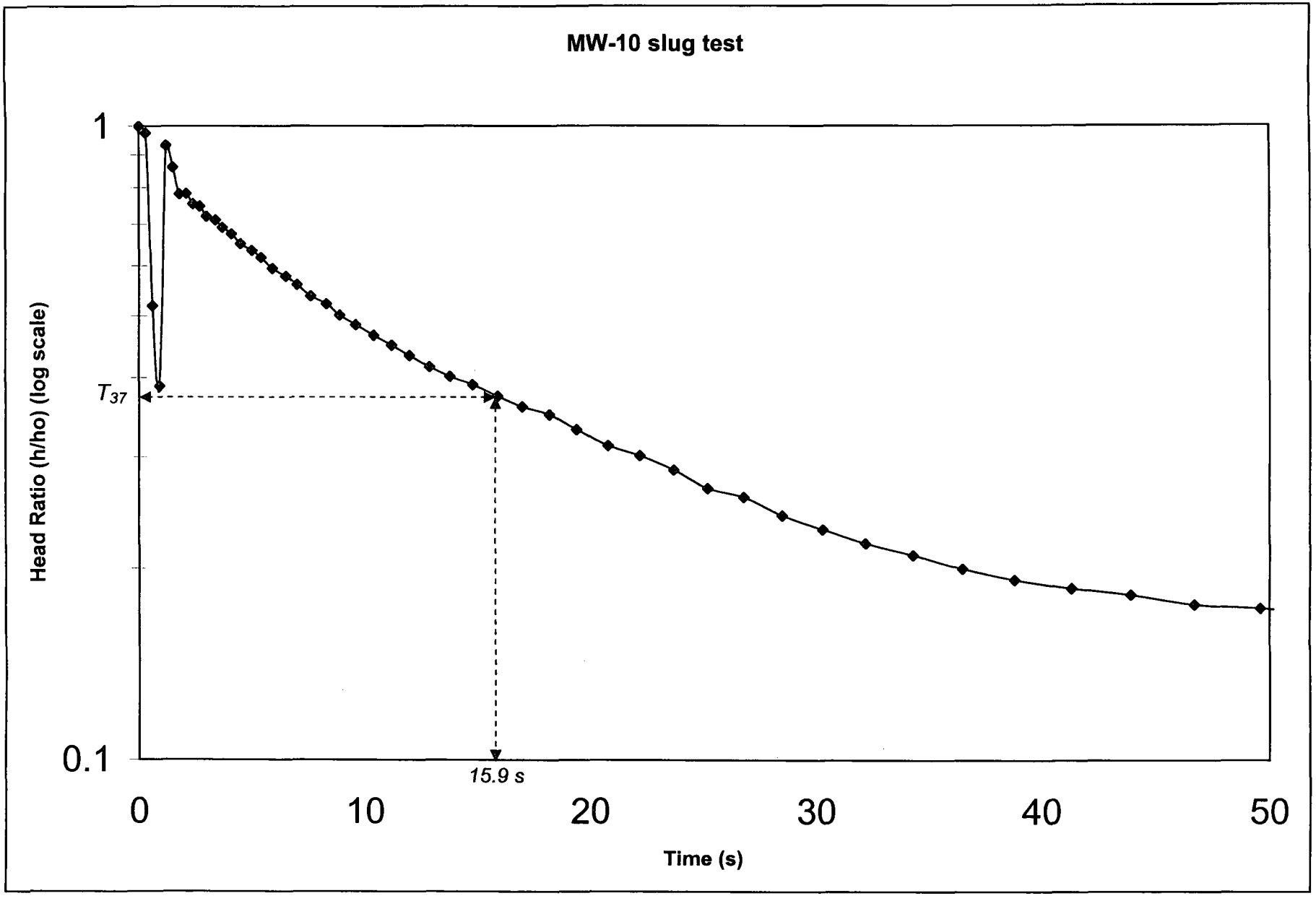
Data gathered using Logarithmic testing
Maximum time between data points: 5.0 Seconds.
Number of data samples: 151

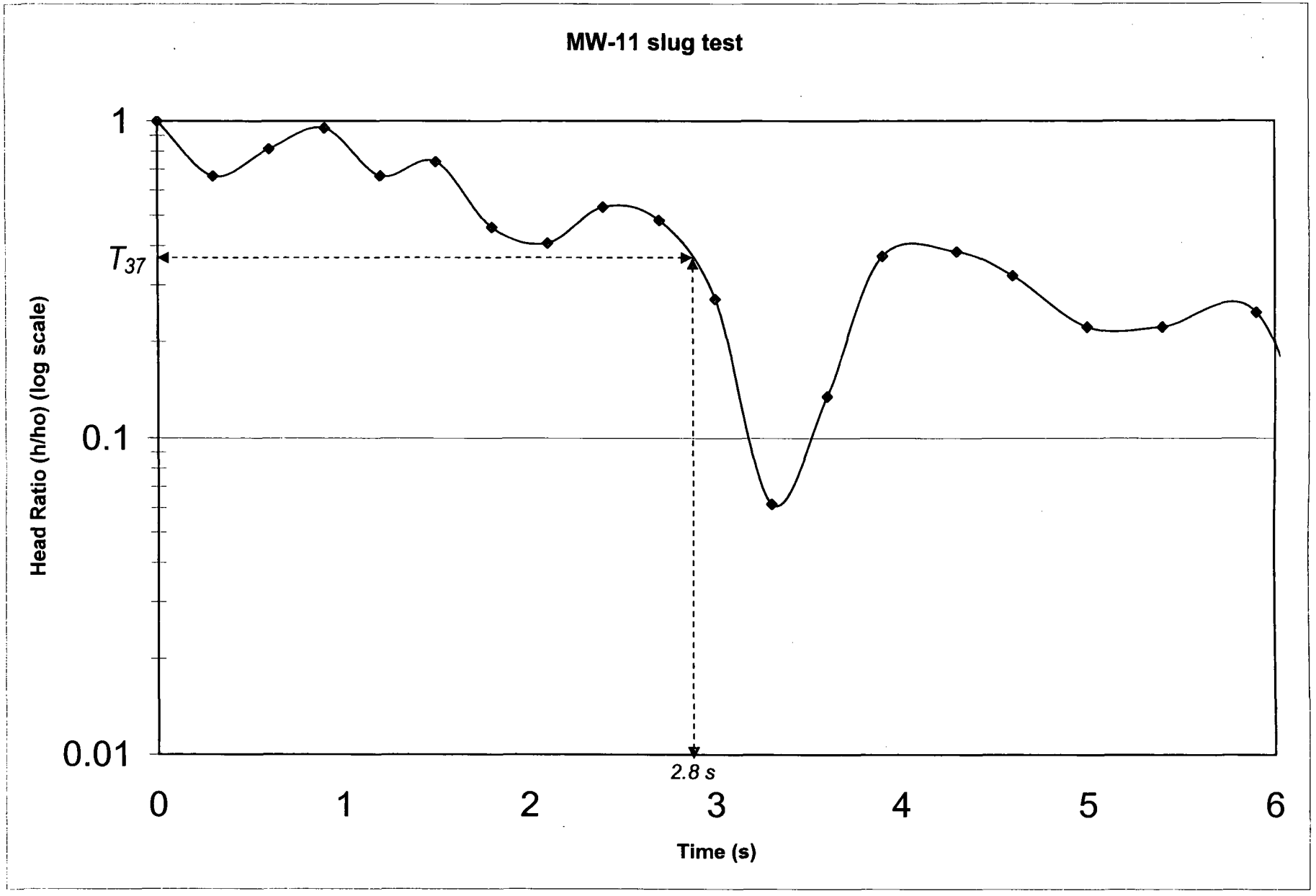
TOTAL DATA SAMPLES 151

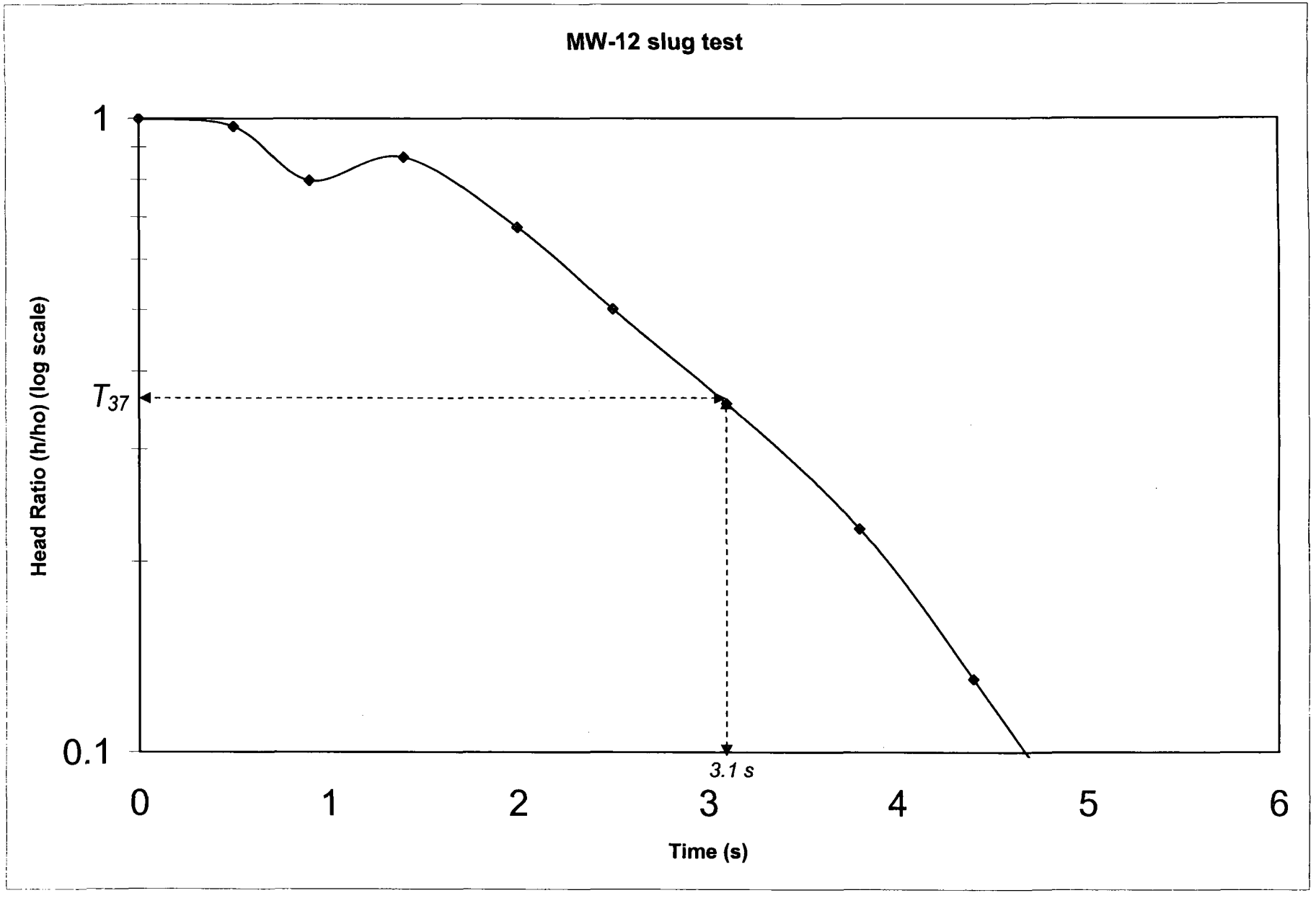
Channel number [2]
Measurement type: Pressure
Channel name: Depth
Sensor Range: 30 PSIG.
Specific gravity: 1

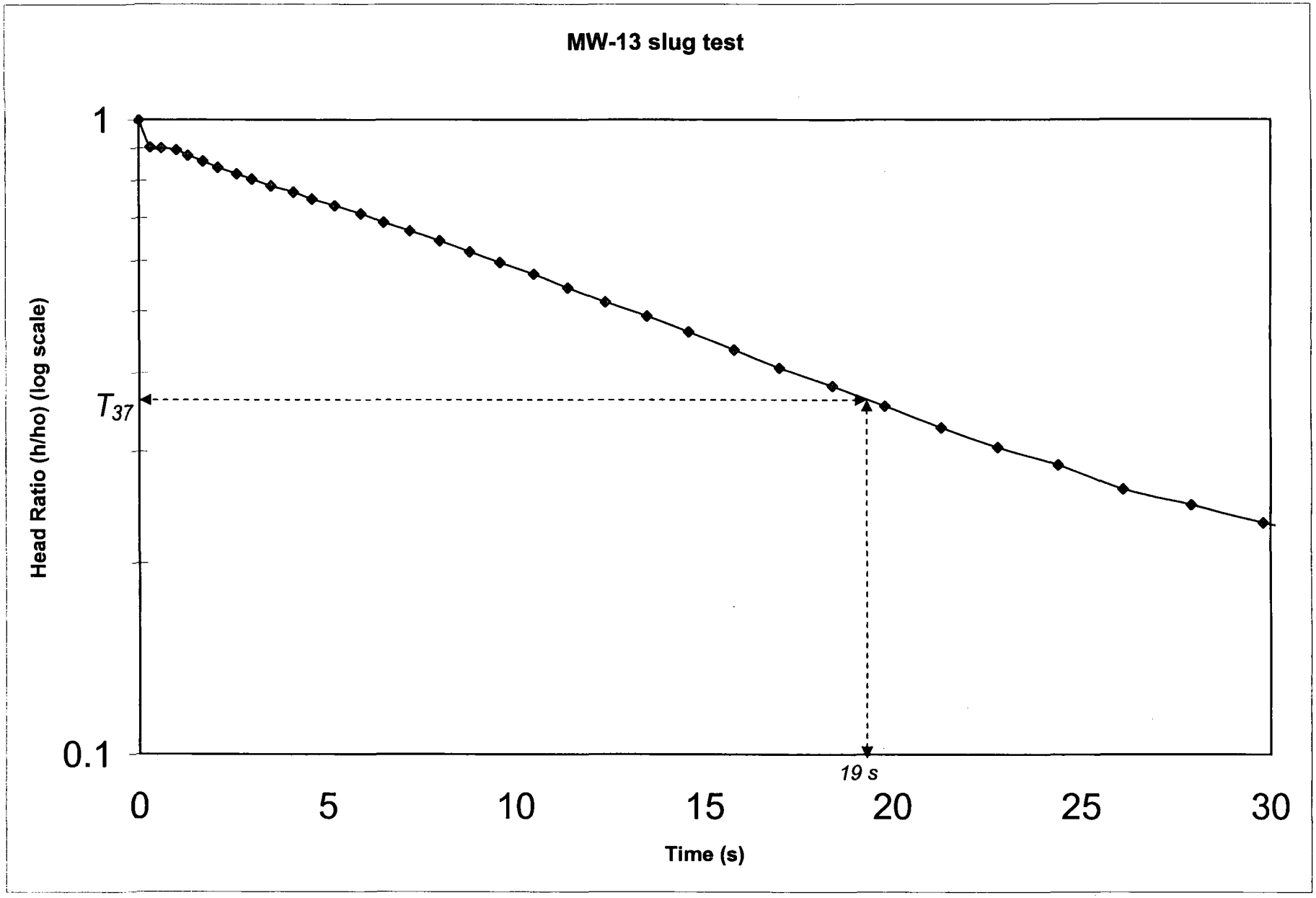
Date	Time	ET (sec)	Pressure Feet H2O	Elapsed Time	Change in Water Level (ft)	h/ho (ft)	T_{37} (sec)	T_{37} (min)
11/22/2005	10:38:06	0	12.798				2.8	0.046667
11/22/2005	10:38:06	0.3	12.819					
11/22/2005	10:38:06	0.6	12.826					
11/22/2005	10:38:07	0.9	12.828					
11/22/2005	10:38:07	1.2	12.832					
11/22/2005	10:38:07	1.5	12.834					
11/22/2005	10:38:08	1.8	12.834					
11/22/2005	10:38:08	2.1	12.834					
11/22/2005	10:38:08	2.4	12.835					
11/22/2005	10:38:08	2.7	12.835					
11/22/2005	10:38:09	3	12.835					
11/22/2005	10:38:09	3.3	12.837					
11/22/2005	10:38:09	3.6	12.837					
11/22/2005	10:38:10	3.9	12.837					
11/22/2005	10:38:10	4.2	12.837					
11/22/2005	10:38:10	4.5	12.837					

11/22/2005	10:38:11	4.8	12.001			
11/22/2005	10:38:11	5.1	12.135			
11/22/2005	10:38:11	5.4	11.649	0	1.149	1
11/22/2005	10:38:11	5.7	12.036	0.3	0.762	0.663185
11/22/2005	10:38:12	6	12.123	0.6	0.675	0.587467
11/22/2005	10:38:12	6.4	12.175	1	0.623	0.542211
11/22/2005	10:38:12	6.7	12.213	1.3	0.585	0.509138
11/22/2005	10:38:13	7.1	12.26	1.7	0.538	0.468233
11/22/2005	10:38:13	7.5	12.314	2.1	0.484	0.421236
11/22/2005	10:38:14	8	12.346	2.6	0.452	0.393386
11/22/2005	10:38:14	8.4	12.386	3	0.412	0.358573
11/22/2005	10:38:15	8.9	12.435	3.5	0.363	0.315927
11/22/2005	10:38:15	9.5	12.47	4.1	0.328	0.285466
11/22/2005	10:38:16	10	12.493	4.6	0.305	0.265448
11/22/2005	10:38:16	10.6	12.529	5.2	0.269	0.234117
11/22/2005	10:38:17	11.3	12.554	5.9	0.244	0.212359
11/22/2005	10:38:18	11.9	12.588	6.5	0.21	0.182768
11/22/2005	10:38:18	12.6	12.625	7.2	0.173	0.150566
11/22/2005	10:38:19	13.4	12.647	8	0.151	0.131419
11/22/2005	10:38:20	14.2	12.676	8.8	0.122	0.106179
11/22/2005	10:38:21	15	12.701	9.6	0.097	0.084421
11/22/2005	10:38:22	15.9	12.72	10.5	0.078	0.067885
11/22/2005	10:38:23	16.8	12.748	11.4	0.05	0.043516
11/22/2005	10:38:24	17.8	12.769	12.4	0.029	0.025239
11/22/2005	10:38:25	18.9	12.786	13.5	0.012	0.010444
11/22/2005	10:38:26	20	12.8	14.6	-0.002	-0.001741
11/22/2005	10:38:27	21.2	12.821	15.8	-0.023	-0.020017
11/22/2005	10:38:28	22.4	12.834			
11/22/2005	10:38:30	23.8	12.849			
11/22/2005	10:38:31	25.2	12.859			
11/22/2005	10:38:32	26.7	12.866			
11/22/2005	10:38:34	28.2	12.881			
11/22/2005	10:38:36	29.8	12.895			
11/22/2005	10:38:37	31.5	12.897			
11/22/2005	10:38:39	33.3	12.908			
11/22/2005	10:38:41	35.2	12.923			
11/22/2005	10:38:43	37.3	12.918			
11/22/2005	10:38:45	39.5	12.929			
11/22/2005	10:38:48	41.8	12.937			
11/22/2005	10:38:50	44.3	12.94			
11/22/2005	10:38:53	46.9	12.946			
11/22/2005	10:38:55	49.7	12.946			
11/22/2005	10:38:58	52.6	12.95			
11/22/2005	10:39:01	55.7	12.956			
11/22/2005	10:39:05	59	12.965			
11/22/2005	10:39:08	62.5	12.96			
11/22/2005	10:39:12	66.2	12.961			
11/22/2005	10:39:16	70.1	12.963			
11/22/2005	10:39:20	74.3	12.965			
11/22/2005	10:39:24	78.7	12.965			
11/22/2005	10:39:29	83.4	12.965			
11/22/2005	10:39:34	88.4	12.967			


MW-10 slug test
1
0.1
Head Ratio (h/ho) (log scale)
T_{37}
15.9 s
0
10
20
30
40
50
Time (s)

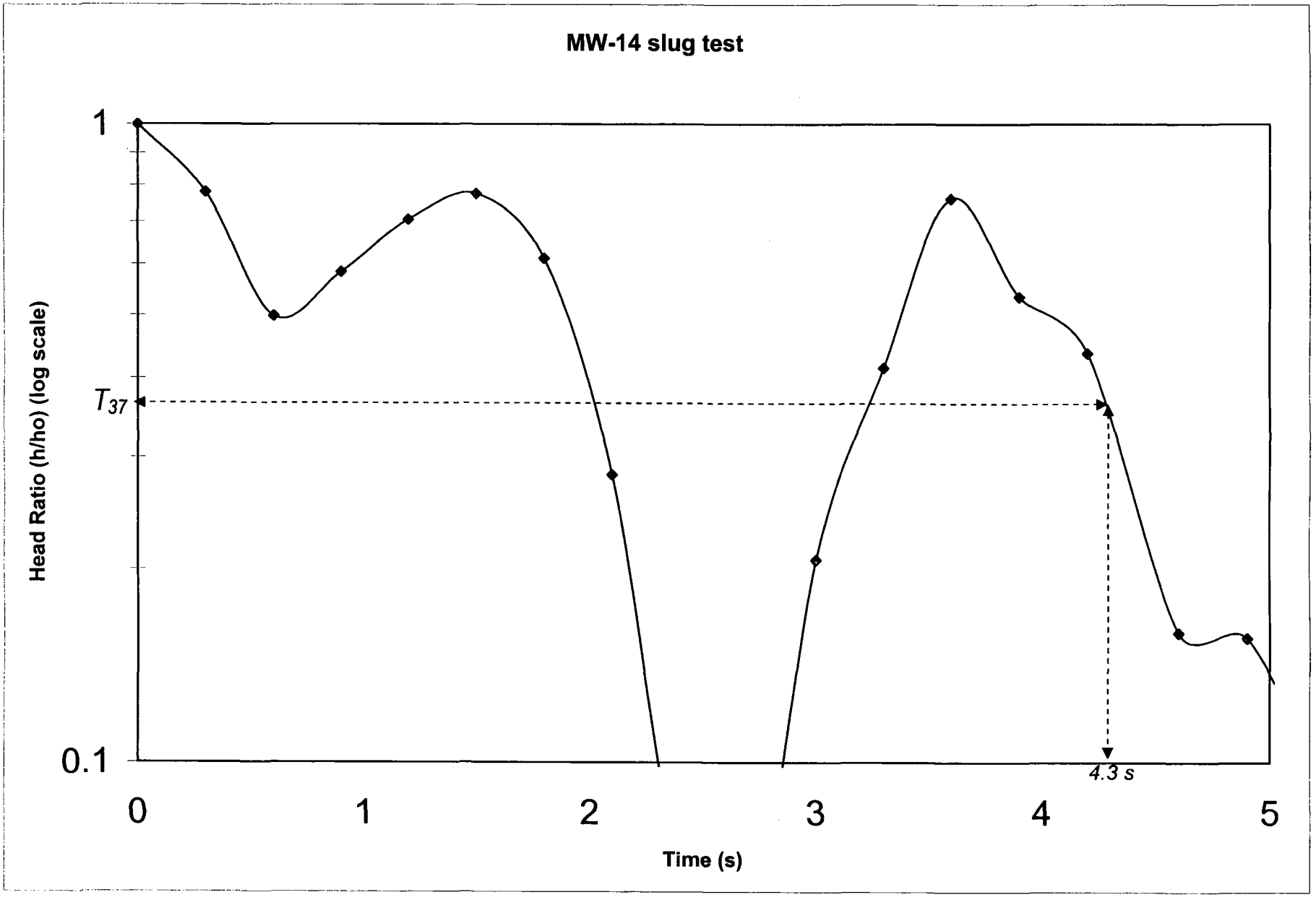

MW-11 slug test
1
T_{37}
0.1
0.01
Head Ratio (h/ho) (log scale)
2.8 s
0
1
2
3
4
5
6
Time (s)

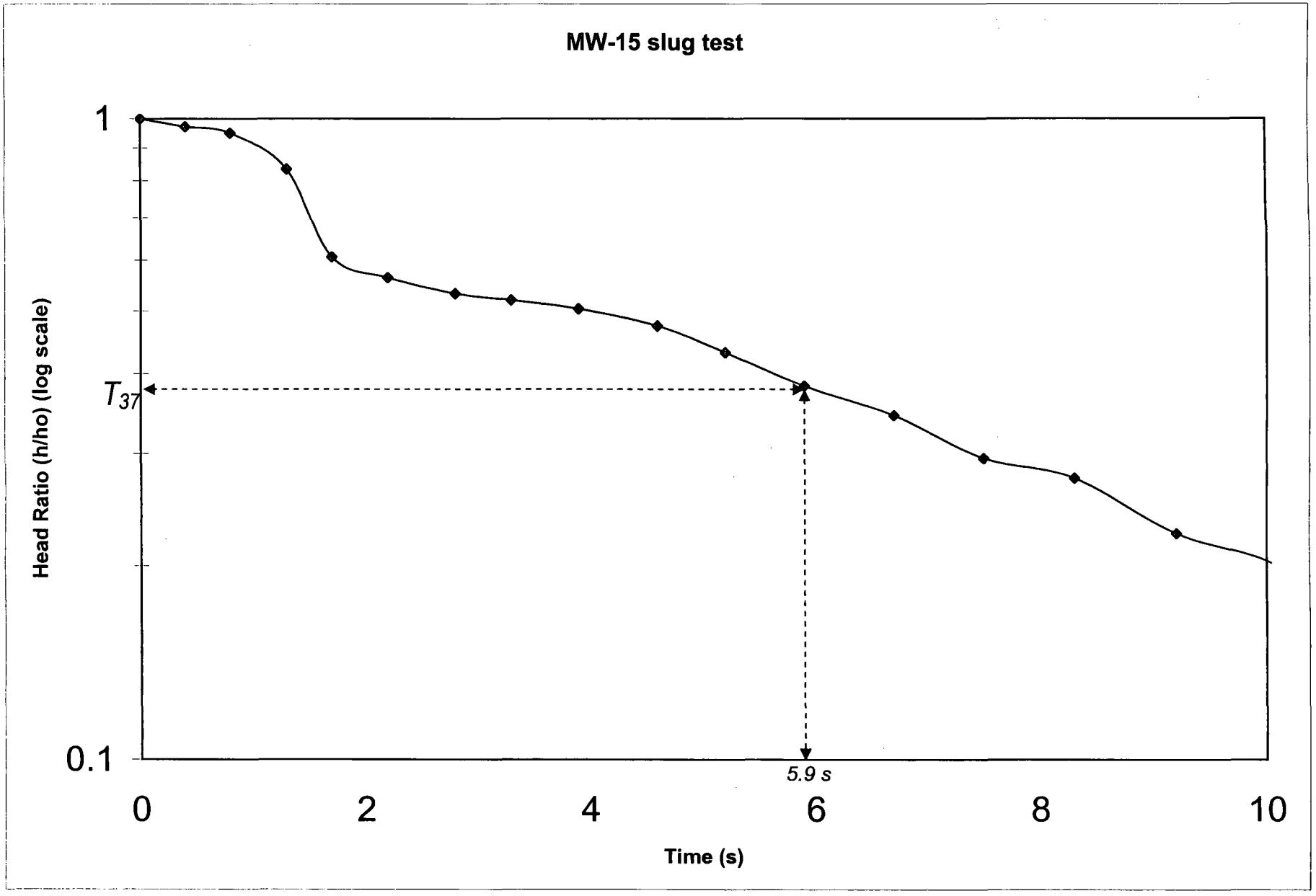

MW-12 slug test
1
0.1
T_{37}
3.1 s
0
1
2
3
4
5
6
Head Ratio (h/ho) (log scale)
Time (s)

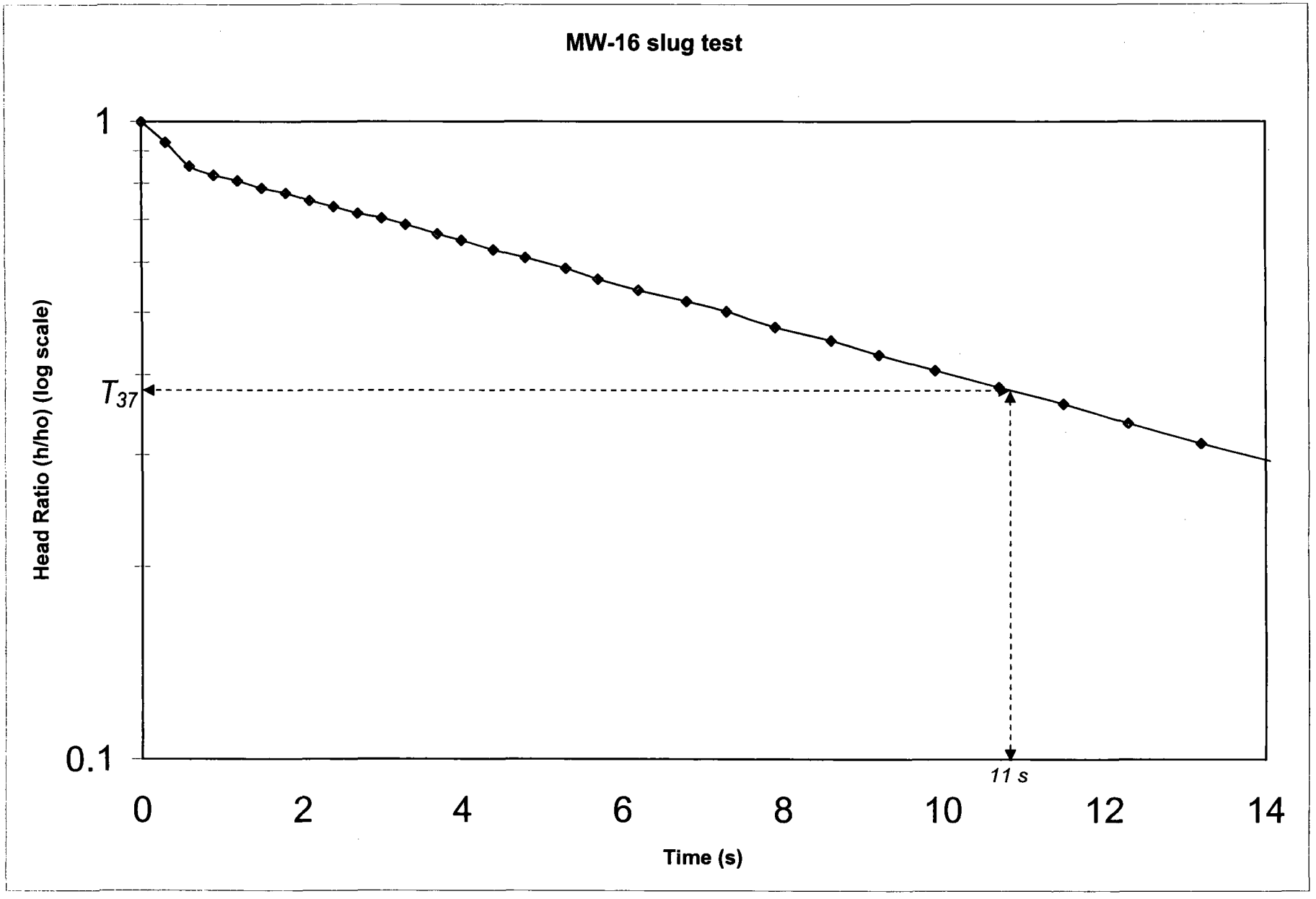


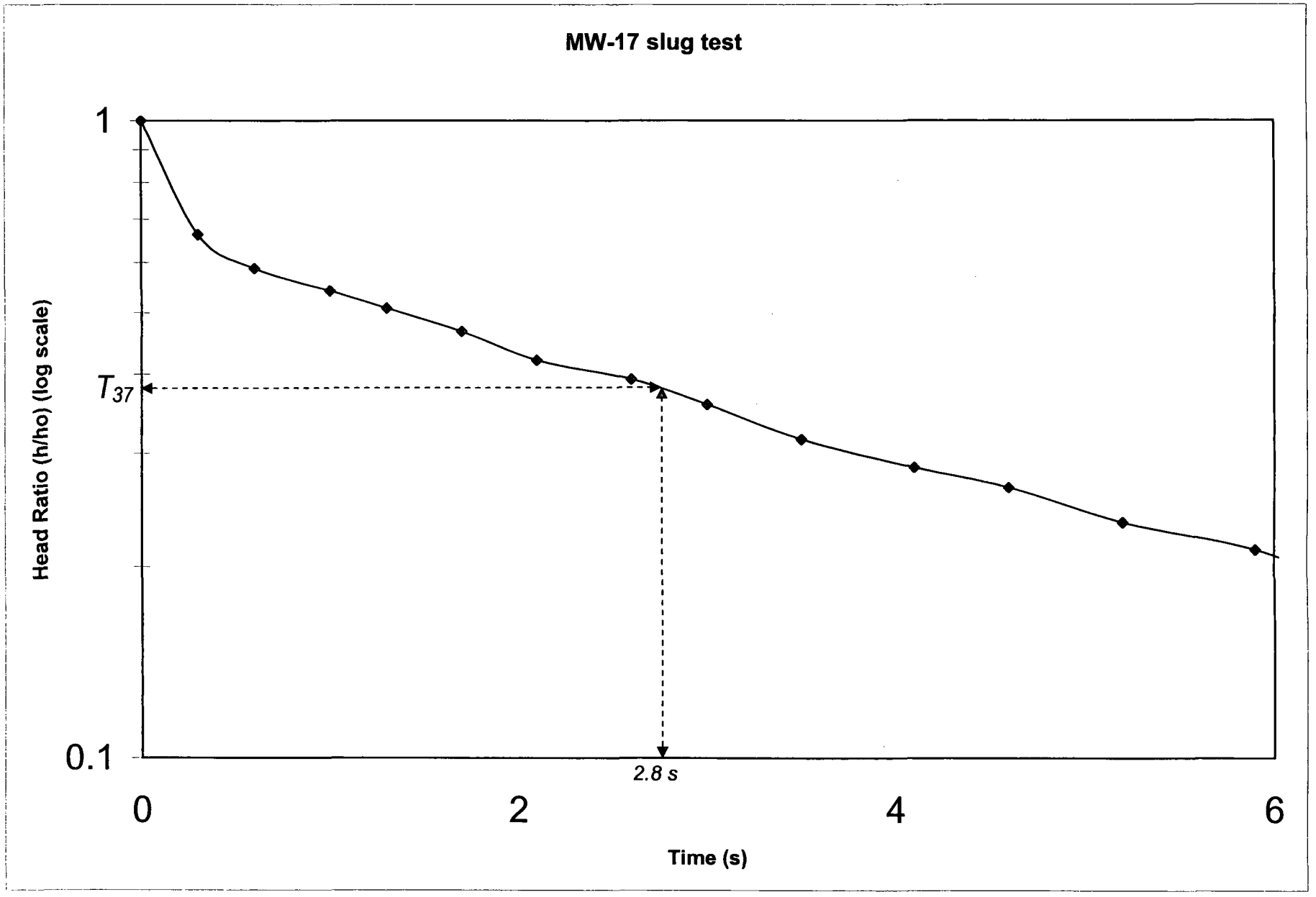
M:\03860-CitrusCounty\021-01 Groundwater Investigation\MW-13out.xls

7/28/2006


MW-14 slug test
1
0.1
T_{37}
4.3 s
Head Ratio (h/ho) (log scale)
0
1
2
3
4
5
Time (s)


MW-15 slug test
1
0.1
T_{37}
5.9 s
0
2
4
6
8
10
Head Ratio (h/ho) (log scale)
Time (s)


MW-16 slug test
1
0.1
T_{37}
11 s
Head Ratio (h/ho) (log scale)
0
2
4
6
8
10
12
14
Time (s)


MW-17 slug test
1
0.1
T_{37}
2.8 s
0
2
4
6
Head Ratio (h/ho) (log scale)
Time (s)

APPENDIX H

GROUNDWATER ANALYTICAL DATA

ANALYSIS RESULTS COMPARED TO PRIMARY AND SECONDARY DRINKING WATER STANDARDS
CITRUS CO LANDFILL GROUNDWATER INVESTIGATION
NOVEMBER 2005

PARAMETER	pH(FIELD)	IRON	VINYL CHLORIDE
STANDARD	6.5-8.5 S.U.**	300 µg/L**	1 µg/L*
Other			
MW-10	5.01	-	-
MW-11	-	-	-
MW-12	-	5600	-
MW-13	5.53	-	-
MW-14	-	-	-
MW-15	4.93	640	2
MW-17	5.22	840	-
QAQC			
EQUBLK	NM	-	-
TRIP1	NM	NM	-
TRIP2	NM	NM	-

* = Primary Drinking Water Standard

** = Secondary Drinking Water Standard

- = Analysis Result is not at or outside Drinking Water Standard

NM = Not Measured

Note

This table displays analysis results which were reported at or outside Primary and Secondary Drinking Water Standards.

Analysis results which were reported above the laboratory detection limit (reporting limit), but not at or above the Primary or Secondary Drinking Water Standard are not displayed in this table. Table does not present results compared to Groundwater Cleanup Target Levels

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
CITRUS CO LANDFILL GROUNDWATER INVESTIGATION
NOVEMBER 2005 THROUGH NOVEMBER 2005

PARAMETER		CONDUC-TIVITY (FIELD)	DISSOLVED OXYGEN (FIELD)	pH (FIELD)	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	CHLORIDE	NITRATE NITROGEN	TOTAL DISSOLVED SOLIDS	ANTIMONY	ARSENIC	BARIUM	COBALT	COPPER
STANDARD UNITS		(1) UMHOS/CM	(1) ppm	6.5-8.5 S.U.** S.U.	(1) deg C	(1) NTU	2.8 mg/L*** mg/L	250 mg/L** mg/L	10 mg/L* mg/L	500 mg/L** mg/L	6 µg/L* µg/L	10 µg/L* µg/L	2000 µg/L* µg/L	140µg/L*** µg/L	1000 µg/L** µg/L
Other															
MW-10	11/16/05	54	1.01	5.01	27.98	4.07	<0.0030	6.8	0.47	96.0	<1.0	5.0 I	18. I	<2.0	0.60 I
MW-11	11/16/05	388	0.4	7.03	25.73	0.54	<0.0030	5.3	0.34	280.	<1.0	4.6 I	22.	<2.0	0.60 I
MW-12	11/17/05	564	0.38	6.80	26.20	2.18	1.2	4.6	<0.0080	318.	1.4 I	2.5 I	24.	<2.0	<0.60
MW-13	11/17/05	137	0.38	5.53	26.74	2.70	<0.0030	6.1	0.28	86.0	<1.0	8.9 I	4.7 I	<2.0	0.60 I
MW-14	11/16/05	499	0.36	6.82	25.35	2.14	<0.0030	4.4	0.19	296.	<1.0	5.0 I	27.	3.5 I	1.4 I
MW-15	11/16/05	64	0.35	4.93	26.52	3.04	<0.0030	3.9	0.22	94.0	<1.0	6.6 I	15. I	<2.0	<0.60
MW-17	11/16/05	106	0.61	5.22	26.55	2.48	<0.0030	4.5	<0.0080	100.	<1.0	4.4 I	12. I	9.9 I	<0.60

LEGEND

*	=Primary Drinking Water Standard	I	= Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	=Secondary Drinking Water Standard	J	= Estimated value
***	=Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)	V	= Analyte found in associated method blank
(1)	=No Standard	Q	= Estimated value; analyte analyzed after acceptable holding time
-	=Not Analyzed		

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
CITRUS CO LANDFILL GROUNDWATER INVESTIGATION
NOVEMBER 2005 THROUGH NOVEMBER 2005

PARAMETER		IRON	LEAD	MERCURY	NICKEL	SELENIUM	SODIUM	TIN	VANADIUM	ZINC	1,1-DICHLORO-ETHANE	1,4-DICHLORO-BENZENE	BENZENE	BROMO-DICHLORO-METHANE	CHLORO-BENZENE
STANDARD UNITS		300 µg/L** µg/L	15 µg/L* µg/L	2 µg/L* µg/L	100 µg/L* µg/L	50 µg/L* µg/L	160 mg/L* mg/L	4200 µg/L*** µg/L	49 µg/L*** µg/L	5000 µg/L** µg/L	70 µg/L*** µg/L	75 µg/L* µg/L	1 µg/L* µg/L	0.6 µg/L*** µg/L	100 µg/L* µg/L
Other															
MW-10	11/16/05	170	<2.0	<0.070	2.7 I	<2.0	3.5	<2.0	<1.0	11.	0.4 I	0.6 I	0.2 I	1.	<0.1
MW-11	11/16/05	54.	<2.0	<0.070	<2.0	<2.0	2.8	<2.0	1.3 I	<1.0	<0.3	<0.2	<0.1	<0.2	<0.1
MW-12	11/17/05	5600	<2.0	<0.070	<2.0	<2.0	2.3	<2.0	<1.0	5.4 I	<0.3	1.	<0.1	<0.2	<0.1
MW-13	11/17/05	140	<2.0	0.32	<2.0	<2.0	2.8	<2.0	<1.0	6.6 I	<0.3	2.	<0.1	<0.2	<0.1
MW-14	11/16/05	190	<2.0	<0.070	3.4 I	<2.0	2.5	<2.0	<1.0	1.0 I	<0.3	<0.2	<0.1	<0.2	<0.1
MW-15	11/16/05	640	<2.0	<0.070	2.8 I	6.5 I	2.2	3.1 I	<1.0	16.	0.4 I	0.3 I	0.5 I	<0.2	<0.1
MW-17	11/16/05	840	2.1 I	<0.070	5.5 I	<2.0	4.2	<2.0	<1.0	32.	<0.3	1.	0.6 I	<0.2	0.6 I

LEGEND

*	=Primary Drinking Water Standard	I	= Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	=Secondary Drinking Water Standard	J	= Estimated value
***	=Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)	V	= Analyte found in associated method blank
(1)	=No Standard	Q	= Estimated value; analyte analyzed after acceptable holding time
-	=Not Analyzed		

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
CITRUS CO LANDFILL GROUNDWATER INVESTIGATION
NOVEMBER 2005 THROUGH NOVEMBER 2005

PARAMETER		CHLORO-FORM	CIS-1,2-DICHLORO-ETHYLENE	DIBROMO-CHLORO-METHANE	ETHYL-BENZENE	M&P-XYLENES	METHYLENE CHLORIDE	TOLUENE	TOTAL THM	TRANS-1,2-DICHLORO-ETHENE	TRICHLORO-ETHENE	VINYL CHLORIDE	TOTAL VOCS	4-NITRO-PHENOL
STANDARD UNITS		70 µg/L*** µg/L	70 µg/L* µg/L	0.4 µg/L*** µg/L	30 µg/L** µg/L	20 µg/L** µg/L	5 µg/L* µg/L	40 µg/L** µg/L	80 µg/L* µg/L	100 µg/L* µg/L	3 µg/L* µg/L	1 µg/L* µg/L	(1) µg/L	56 µg/L*** µg/L
Other														
MW-10	11/16/05	2.	0.9 I	1.	<0.3	1. I	1. I	<0.2	4	<0.8	<0.3	<0.5	12.1	0.04 I
MW-11	11/16/05	<0.2	<0.3	<0.2	<0.3	<0.3	<1.	0.2 I	<0.5	<0.8	<0.3	<0.5	0.2	0.08 I
MW-12	11/17/05	<0.2	<0.3	<0.2	<0.3	<0.3	<1.	<0.2	<0.5	<0.8	<0.3	<0.5	1	<0.04
MW-13	11/17/05	<0.2	2.	<0.2	0.9 I	2. I	<1.	<0.2	<0.5	<0.8	<0.3	0.8 I	7.7	0.4
MW-14	11/16/05	<0.2	<0.3	<0.2	<0.3	<0.3	<1.	0.3 I	<0.5	<0.8	<0.3	<0.5	0.3	0.1
MW-15	11/16/05	0.2 I	4.	<0.2	<0.3	0.7 I	<1.	0.4 I	0.2 I	0.9 I	2.	2.	11.6	<0.04
MW-17	11/16/05	<0.2	0.4 I	<0.2	<0.3	0.6 I	<1.	0.3 I	<0.5	<0.8	<0.3	<0.5	3.5	0.4

LEGEND

* =Primary Drinking Water Standard
** =Secondary Drinking Water Standard
*** =Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
(1) =No Standard
\- =Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

JANUARY 2006 RE-SAMPLE DATA

ANALYSIS RESULTS COMPARED TO GROUNDWATER STANDARDS

CITRUS COUNTY CENTRAL LANDFILL

JANUARY 2006

Note: This report contains additional filters that are detailed on the final page of this report.

PARAMETER		pH (FIELD)	VINYL CHLORIDE
STANDARD		6.5-8.5 S.U.**	1 µg/L*
Other. Assessment			
MW-15	01/05/2006	5.22	-
MW-15 R	01/27/2006	4.93	1 @

LEGEND

*	= Primary Drinking Water Standard
**	= Secondary Drinking Water Standard
***	= Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
@	= Analysis Result is at Groundwater Standard
-	= Analysis Result is not at or outside Groundwater Standard
NS	= Not Sampled
NM	= Not Measured

Note:

This table displays analysis results which were reported at or outside Groundwater Standards.
Analysis results notated with "@" indicate that the analysis result was reported at the Groundwater Standard.
Analysis results which were reported above the laboratory detection limit (reporting limit), but not at or above the Groundwater Standard are not displayed in this table.

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
CITRUS COUNTY CENTRAL LANDFILL
JANUARY 2006

Note: This report contains additional filters that are detailed on the final page of this report.

PARAMETER		CONDUC-TIVITY (FIELD)	DISSOLVED OXYGEN (FIELD)	pH (FIELD)	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	VINYL CHLORIDE	TOTAL VOCS
STANDARD		(1)	(1)	6.5-8.5 S.U.**	(1)	(1)	1 µg/L*	(1)
UNITS		UMHOS/CM	ppm	S.U.	deg C	NTU	µg/L	µg/L
Other, Assessment								
MW-15	01/05/06	81	0.66	5.22	25.1	9.85	<0.5	-
MW-15 R	01/27/06	61	0.29	4.93	25.31	2.38	1	1

LEGEND

*	= Primary Drinking Water Standard	I	= Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	= Secondary Drinking Water Standard	J	= Estimated value; matrix interferences prevent accurate determination
***	= Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)	J3	= The reported value failed to meet the established quality control criteria for either precision and/or accuracy
(1)	= No Standard	Q	= Estimated value; analyte analyzed after acceptable holding time
-	= Not Analyzed		

JULY 2006 LABORATORY REPORT

ANALYSIS RESULTS COMPARED TO GROUNDWATER STANDARDS
CITRUS COUNTY CENTRAL LANDFILL
SECOND SEMIANNUAL 2006

Note: This report contains additional filters that are detailed on the final page of this report.

PARAMETER		pH (FIELD)	ANTIMONY	IRON	IRON, DISSOLVED	BENZENE	METHYLENE CHLORIDE	VINYL CHLORIDE
STANDARD		6.5-8.5 S.U.**	6 µg/L*	300 µg/L**	300 µg/L**	1 µg/L*	5 µg/L*	1 µg/L*
Other. Assessment								
MW-10	07/18/2006	4.65	-	1390	NM	2	6	5
MW-10 R	08/31/2006	4.70	11	1020	1010	1 @	5 @	2
MW-11	07/18/2006	-	-	-	NM	-	-	-
MW-12	07/18/2006	-	-	6710	NM	-	-	-
MW-13	07/18/2006	5.31	-	583	NM	-	-	-
MW-14	07/17/2006	-	-	-	NM	-	-	-
MW-15	07/17/2006	4.78	-	1350	NM	-	-	1 @
MW-17	07/17/2006	4.96	-	6080	NM	-	5 V @	-

LEGEND

*	= Primary Drinking Water Standard
**	= Secondary Drinking Water Standard
***	= Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
@	= Analysis Result is at Groundwater Standard
-	= Analysis Result is not at or outside Groundwater Standard
NS	= Not Sampled
NM	= Not Measured

Note:
This table displays analysis results which were reported at or outside Groundwater Standards.
Analysis results notated with "@" indicate that the analysis result was reported at the Groundwater Standard.
Analysis results which were reported above the laboratory detection limit (reporting limit), but not at or above the Groundwater Standard are not displayed in this table.

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
CITRUS COUNTY CENTRAL LANDFILL
SECOND SEMIANNUAL 2006

Note: This report contains additional filters that are detailed on the final page of this report.

PARAMETER		CONDUC-TIVITY (FIELD)	DISSOLVED OXYGEN (FIELD)	GROUND-WATER ELEVATION	pH (FIELD)	REDOX POTENTIAL	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	CHLORIDE	NITRATE NITROGEN	TOTAL DISSOLVED SOLIDS	ANTIMONY	ARSENIC	BARIUM
STANDARD		(1)	(1)	(1)	6.5-8.5 S.U.**	(1)	(1)	(1)	2.8 mg/L***	250 mg/L**	10 mg/L*	500 mg/L**	6 µg/L*	10 µg/L*	2000 µg/L*
UNITS		umhos/cm	ppm	NGVD FT	S.U.	mV	deg C	NTU	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
Other, Assessment															
MW-10	07/18/06	62	0.81	-	4.65	169.4	29.26	20.7	<0.003	6.64	0.272	114	<2	<2	<12
MW-10 R	08/31/06	60	0.31	107	4.70	176.3	26.78	24.1	<0.003	5.86 V	0.183	30	11	<2	13
MW-11	07/18/06	361	1.34	-	7.10	18.30	26.00	0.56	<0.003	5.10	0.336	246	<2	<2	13
MW-12	07/18/06	600	0.46	-	6.67	-144.6	26.28	4.87	0.3	5.14	0.317	370	<2	3 I	14
MW-13	07/18/06	93	1.21	-	5.31	146.8	26.72	2.80	<0.003	5.72	0.266	118	<2	6 I	<12
MW-14	07/17/06	519	0.78	-	6.79	10.00	25.51	1.69	<0.003	4.59	0.321	336	<2	<2	<12
MW-15	07/17/06	48	1.22	-	4.78	247.9	25.30	4.37	<0.003	4.47	0.232	82	<2	<2	<12
MW-17	07/17/06	68	1.18	-	4.96	164.0	26.04	4.23	<0.003	4.33	0.248	40	<2	<2	<12

[redacted]AMET[redacted]T OR [redacted]E THE[redacted]RATO[redacted]TECT[redacted]MIT [redacted]

CITRUS COUNTY CENTRAL LANDFILL

SECOND SEMIANNUAL 2006

Note: This report contains additional filters that are detailed on the final page of this report.

PARAMETER		COBALT	COBALT, DISSOLVED	IRON	IRON, DISSOLVED	NICKEL	NICKEL, DISSOLVED	SELENIUM	SELENIUM, DISSOLVED	SILVER	SODIUM	SODIUM, DISSOLVED	1,1- DICHLORO- ETHANE	1,4- DICHLORO- BENZENE	BENZENE
STANDARD		140µg/L***	140µg/L***	300 µg/L**	300 µg/L**	100 µg/L*	100 µg/L*	50 µg/L*	50 µg/L*	100 µg/L**	160 mg/L*	160 mg/L*	70 µg/L***	75 µg/L*	1 µg/L*
UNITS		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L
Other, Assessment															
MW-10	07/18/06	<0.4	-	1390	-	<3	-	<2	-	<0.3	6.13	-	1	5	2
MW-10 R	08/31/06	14	17	1020	1010	5 I	7 I	4 I	3 I	<0.3	5	5.56	1	4	1
MW-11	07/18/06	<0.4	-	<54	-	<3	-	<2	-	<0.3	2.74	-	<0.3	<0.2	<0.1
MW-12	07/18/06	<0.4	-	6710	-	<3	-	<2	-	<0.3	2.48	-	<0.3	<0.2	<0.1
MW-13	07/18/06	<0.4	-	583	-	<3	-	<2	-	<0.3	2.95	-	0.7 I	3	<0.1
MW-14	07/17/06	<0.4	-	137	-	<3	-	<2	-	0.4 IV	2.15	-	<0.3	<0.2	<0.1
MW-15	07/17/06	<0.4	-	1350	-	<3	-	8 I	-	0.4 IV	1.46	-	<0.3	<0.2	0.6 I
MW-17	07/17/06	<0.4	-	6080	-	<3	-	<2	-	0.4 IV	3.68	-	<0.3	1	<0.1

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
CITRUS COUNTY CENTRAL LANDFILL
SECOND SEMIANNUAL 2006

Note: This report contains additional filters that are detailed on the final page of this report.

PARAMETER		CHLORO-BENZENE	CIS- 1,2-DICHLORO-ETHYLENE	M&P- XYLENES	METHYLENE CHLORIDE	O- XYLENES	TRICHLORO-ETHENE	VINYL CHLORIDE	TOTAL VOCS	2- METHYL-NAPHTH- ALENE	NAPHTHA- LENE
STANDARD		100 µg/L*	70 µg/L*	20 µg/L**	5 µg/L*	20 µg/L**	3 µg/L*	1 µg/L*	(1)	28 µg/L***	14 µg/L***
UNITS		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Other, Assessment											
MW-10	07/18/06	<0.1	3	6	6	4	<0.3	5	32	0.06 I	0.09 I
MW-10 R	08/31/06	0.5 I	4	5	5	4	0.5 I	2	27	-	-
MW-11	07/18/06	<0.1	<0.3	<0.3	<1	<0.6	<0.3	<0.5	-	<0.05	<0.09
MW-12	07/18/06	<0.1	<0.3	<0.3	<1	<0.6	<0.3	<0.5	-	<0.05	<0.09
MW-13	07/18/06	<0.1	2	1 I	<1	<0.6	<0.3	<0.5	6.7	0.05 I	0.31
MW-14	07/17/06	<0.1	<0.3	<0.3	<1	<0.6	<0.3	<0.5	-	<0.05	<0.09
MW-15	07/17/06	<0.1	5	0.8 I	<1	<0.6	2	1	9.4	<0.05	<0.09
MW-17	07/17/06	<0.1	<0.3	0.7 I	5 V	<0.6	<0.3	<0.5	6.7	<0.05	<0.09

LEGEND

*	= Primary Drinking Water Standard	I	= Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	= Secondary Drinking Water Standard	J	= Estimated value; matrix interferences prevent accurate determination
***	= Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)	J3	= The reported value failed to meet the established quality control criteria for either precision and/or accuracy
(1)	= No Standard	Q	= Estimated value; analyte analyzed after acceptable holding time
-	= Not Analyzed		

AUGUST 2006 RE-SAMPLE DATA

Environmental Conservation Laboratories, Inc.
10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

www.encolabs.com

Tuesday, September 12, 2006

Jones Edmunds & Associates, Inc. (JO006)

Attn: Lynne McDaniel

730 N.E.Waldo Road Bldg.A

Gainesville, FL 32641

RE: Project Number: 03860-022-01, Project Name/Desc: Citrus Co. LF
ENCO Workorder: A604241

Dear Lynne McDaniel,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, September 1, 2006.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

This data has been produced in accordance with NELAC standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

David M. Camacho

Project Manager

Enclosure(s)

LAB #		A604241-01	A604241-02	A604241-03	-	-	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	-	-	-
SAMPLE ID	Reporting Limit	EQB-1::06SSCC-EQB1R	MW-10::06SSCC-10R	TB-1	-	-	-

Volatile Organic Compounds by GCMS (Water)

1,1,1,2-Tetrachloroethane	1 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
1,1,1-Trichloroethane	1 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
1,1,2,2-Tetrachloroethane	0.2 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
1,1,2-Trichloroethane	1 ug/L	<0.4 [6]	<0.4 [6]	<0.4 [6]	-	-	-
1,1-Dichloroethane	1 ug/L	<0.3 [6]	1	<0.3 [6]	-	-	-
1,1-Dichloroethene	1 ug/L	<0.8 [6]	<0.8 [6]	<0.8 [6]	-	-	-
1,2,3-Trichloropropane	1 ug/L	<0.3 [6]	<0.3 [6]	<0.3 [6]	-	-	-
1,2-Dichlorobenzene	1 ug/L	<0.3 [6]	<0.3 [6]	<0.3 [6]	-	-	-
1,2-Dichloroethane	1 ug/L	<0.3 [6]	<0.3 [6]	<0.3 [6]	-	-	-
1,2-Dichloropropane	1 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
1,4-Dichlorobenzene	1 ug/L	<0.2 [6]	4	<0.2 [6]	-	-	-
2-Butanone	5 ug/L	<1 [6]	<1 [6]	<1 [6]	-	-	-
2-Hexanone	5 ug/L	<2 [6]	<2 [6]	<2 [6]	-	-	-
4-Methyl-2-pentanone	5 ug/L	<2 [6]	<2 [6]	<2 [6]	-	-	-
Acetone	5 ug/L	<3 [6]	<3 [6]	<3 [6]	-	-	-
Acrylonitrile	2 ug/L	<2 [6]	<2 [6]	<2 [6]	-	-	-
Benzene	1 ug/L	<0.1 [6]	1	<0.1 [6]	-	-	-
Bromochloromethane	1 ug/L	<0.9 [6]	<0.9 [6]	<0.9 [6]	-	-	-
Bromodichloromethane	0.4 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
Bromoform	1 ug/L	<0.5 [6]	<0.5 [6]	<0.5 [6]	-	-	-
Bromomethane	1 ug/L	<1 [6]	<1 [6]	<1 [6]	-	-	-
Carbon disulfide	5 ug/L	<0.4 [6]	<0.4 [6]	<0.4 [6]	-	-	-
Carbon tetrachloride	1 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
Chlorobenzene	1 ug/L	<0.1 [6]	0.5 [3]	<0.1 [6]	-	-	-
Chloroethane	1 ug/L	<0.5 [6]	<0.5 [6]	<0.5 [6]	-	-	-
Chloroform	1 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
Chloromethane	1 ug/L	<0.6 [6]	<0.6 [6]	<0.6 [6]	-	-	-
cis-1,2-Dichloroethene	1 ug/L	<0.3 [6]	4	<0.3 [6]	-	-	-
cis-1,3-Dichloropropene	0.2 ug/L	<0.1 [6]	<0.1 [6]	<0.1 [6]	-	-	-
Dibromochloromethane	0.2 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
Dibromomethane	1 ug/L	<0.4 [6]	<0.4 [6]	<0.4 [6]	-	-	-
Ethylbenzene	1 ug/L	<0.3 [6]	<0.3 [6]	<0.3 [6]	-	-	-
Iodomethane	3 ug/L	<1 [6]	<1 [6]	<1 [6]	-	-	-
m,p-Xylenes	2 ug/L	<0.3 [6]	5	<0.3 [6]	-	-	-
Methylene chloride	2 ug/L	<1 [6]	5	<1 [6]	-	-	-
o-Xylene	1 ug/L	<0.6 [6]	4	<0.6 [6]	-	-	-
Styrene	1 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
Tetrachloroethene	1 ug/L	<0.6 [6]	<0.6 [6]	<0.6 [6]	-	-	-
Toluene	1 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
trans-1,2-Dichloroethene	1 ug/L	<0.8 [6]	<0.8 [6]	<0.8 [6]	-	-	-
trans-1,3-Dichloropropene	0.2 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-
trans-1,4-Dichloro-2-butene	1 ug/L	<0.5 [6]	<0.5 [6]	<0.5 [6]	-	-	-
Trichloroethene	1 ug/L	<0.3 [6]	0.5 [3]	<0.3 [6]	-	-	-
Trichlorofluoromethane	1 ug/L	<0.7 [6]	<0.7 [6]	<0.7 [6]	-	-	-
Vinyl acetate	1 ug/L	<0.2 [6]	<0.2 [6]	<0.2 [6]	-	-	-

LAB #		A604241-01	A604241-02	A604241-03	-	-	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	-	-	-
SAMPLE ID	Reporting Limit	EQB-1::06SSCC-EQB1R	MW-10::06SSCC-10R	TB-1	-	-	-
Volatile Organic Compounds by GCMS (continued)							
Vinyl chloride	1 ug/L	<0.5 [6]	2	<0.5 [6]	-	-	-
Toluene-d8	132 [surr]	102%	105%	102%	-	-	-
4-Bromofluorobenzene	135 [surr]	86%	93%	88%	-	-	-
Dibromofluoromethane	149 [surr]	107%	107%	109%	-	-	-
Semivolatile Organic Compounds by GC (Water)							
1,2-Dibromoethane	0.0200 ug/L	<0.0040 [6]	<0.0040 [6]	-	-	-	-
1,2-Dibromo-3-chloropropane	0.0200 ug/L	<0.0040 [6]	<0.0040 [6]	-	-	-	-
1,3-Dichlorobenzene	140 [surr]	60.8%	75.9%	-	-	-	-
Metals by EPA 6000/7000 Series Methods (Water)							
Antimony	0.2 ug/L	<2 [2] [6]	11 [2]	-	-	-	-
Arsenic	1 ug/L	<2 [2] [6]	<2 [2] [6]	-	-	-	-
Barium	1 ug/L	<12 [2] [6]	13 [2]	-	-	-	-
Beryllium	0.2 ug/L	<2 [2] [6]	<2 [2] [6]	-	-	-	-
Cadmium	0.2 ug/L	<2 [2] [6]	<2 [2] [6]	-	-	-	-
Chromium	1 ug/L	<6 [2] [6]	<6 [2] [6]	-	-	-	-
Cobalt	1 ug/L	<0.4 [2] [6]	14 [2]	-	-	-	-
Copper	0.3 ug/L	<3 [2] [6]	<3 [2] [6]	-	-	-	-
Iron	10 ug/L	<36 [2] [6]	1020 [2]	-	-	-	-
Lead	1 ug/L	<3 [2] [6]	<3 [2] [6]	-	-	-	-
Mercury	0.200 ug/L	<0.110 [6]	<0.110 [6]	-	-	-	-
Nickel	1 ug/L	<3 [2] [6]	5 [2]	-	-	-	-
Selenium	1 ug/L	2 [2] [3]	4 [2] [3]	-	-	-	-
Silver	0.05 ug/L	<0.3 [2] [6]	<0.3 [2] [6]	-	-	-	-
Sodium	0.1 mg/L	<0.2 [2] [6]	5 [2]	-	-	-	-
Thallium	0.1 ug/L	<0.2 [2] [6]	<0.2 [2] [6]	-	-	-	-
Vanadium	1 ug/L	<3 [2] [6]	<3 [2] [6]	-	-	-	-
Zinc	10 ug/L	<100 [2] [6]	<100 [2] [6]	-	-	-	-
Metals (Dissolved) by EPA 6000/7000 Series Methods (Water)							
Antimony	0.2 ug/L	-	<2 [2] [6]	-	-	-	-
Arsenic	1 ug/L	-	<2 [2] [6]	-	-	-	-
Barium	1 ug/L	-	<12 [2] [6]	-	-	-	-
Beryllium	0.2 ug/L	-	<2 [2] [6]	-	-	-	-
Cadmium	0.2 ug/L	-	<2 [2] [6]	-	-	-	-
Chromium	1 ug/L	-	<6 [2] [6]	-	-	-	-
Cobalt	1 ug/L	-	17 [2]	-	-	-	-
Copper	0.3 ug/L	-	<3 [2] [6]	-	-	-	-
Iron	10 ug/L	-	1010 [2]	-	-	-	-
Lead	1 ug/L	-	<3 [2] [6]	-	-	-	-
Mercury	0.20 ug/L	-	<0.11 [6]	-	-	-	-
Nickel	1 ug/L	-	7 [2] [3]	-	-	-	-
Selenium	1 ug/L	-	3 [2] [3]	-	-	-	-
Silver	0.05 ug/L	-	<0.3 [2] [6]	-	-	-	-
Sodium	100 ug/L	-	5560 [2]	-	-	-	-

LAB #		A604241-01	A604241-02	A604241-03	-	-	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	-	-	-
SAMPLE ID	Reporting Limit	EQB-1::06SSCC-EQB1R	MW-10::06SSCC-10R	TB-1	-	-	-

Metals (Dissolved) by EPA 6000/7000 Series Methods (continued)

Thallium	0.1	ug/L	-	<0.2 [2] [6]	-	-	-	-
Vanadium	1	ug/L	-	<3 [2] [6]	-	-	-	-
Zinc	10	ug/L	-	<100 [2] [6]	-	-	-	-

Classical Chemistry Parameters (Water)

Ammonia as N	0.02	mg/L	<0.003 [6]	<0.003 [6]	-	-	-	-
Chloride	1.00	mg/L	1.14 [1]	5.86 [1]	-	-	-	-
Nitrate as N	0.050	mg/L	<0.008 [6]	0.183	-	-	-	-
Total Dissolved Solids	10	mg/L	<10 [6]	30	-	-	-	-

Field Parameters (Water)

Specific Conductance (EC)	0	umhos/cm	-	60	-	-	-	-
Dissolved Oxygen	0.00	mg/L	-	0.31	-	-	-	-
pH	0.00	pH Units	-	4.70	-	-	-	-
Oxidation/Reduction Potential		mV	-	176.3	-	-	-	-
Temperature	0.00	°C	-	26.78	-	-	-	-
Turbidity	0.00	NTU	-	24.1	-	-	-	-
Depth to Water		Ft	-	107	-	-	-	-

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I01009 - EPA 5030B_MS

Blank (6I01009-BLK1) Prepared: 09/01/2006 11:27 Analyzed: 09/01/2006 13:09

1,1,1,2-Tetrachloroethane	0.2 U	1	ug/L
1,1,1-Trichloroethane	0.2 U	1	ug/L
1,1,2,2-Tetrachloroethane	0.2 U	0.2	ug/L
1,1,2-Trichloroethane	0.4 U	1	ug/L
1,1-Dichloroethane	0.3 U	1	ug/L
1,1-Dichloroethene	0.8 U	1	ug/L
1,2,3-Trichloropropane	0.3 U	1	ug/L
1,2-Dichlorobenzene	0.3 U	1	ug/L
1,2-Dichloroethane	0.3 U	1	ug/L
1,2-Dichloropropane	0.2 U	1	ug/L
1,4-Dichlorobenzene	0.2 U	1	ug/L
2-Butanone	1 U	5	ug/L
2-Hexanone	2 U	5	ug/L
4-Methyl-2-pentanone	2 U	5	ug/L
Acetone	3 U	5	ug/L
Acrylonitrile	2 U	2	ug/L
Benzene	0.1 U	1	ug/L
Bromochloromethane	0.9 U	1	ug/L
Bromodichloromethane	0.2 U	0.4	ug/L
Bromoform	0.5 U	1	ug/L
Bromomethane	1 U	1	ug/L
Carbon disulfide	0.4 U	5	ug/L
Carbon tetrachloride	0.2 U	1	ug/L
Chlorobenzene	0.1 U	1	ug/L
Chloroethane	0.5 U	1	ug/L
Chloroform	0.2 U	1	ug/L
Chloromethane	0.6 U	1	ug/L
cis-1,2-Dichloroethene	0.3 U	1	ug/L
cis-1,3-Dichloropropene	0.1 U	0.2	ug/L
Dibromochloromethane	0.2 U	0.2	ug/L
Dibromomethane	0.4 U	1	ug/L
Ethylbenzene	0.3 U	1	ug/L
Iodomethane	1 U	3	ug/L
m,p-Xylenes	0.3 U	2	ug/L
Methylene chloride	1 U	2	ug/L
o-Xylene	0.6 U	1	ug/L
Styrene	0.2 U	1	ug/L
Tetrachloroethene	0.6 U	1	ug/L
Toluene	0.2 U	1	ug/L
trans-1,2-Dichloroethene	0.8 U	1	ug/L
trans-1,3-Dichloropropene	0.2 U	0.2	ug/L
trans-1,4-Dichloro-2-butene	0.5 U	1	ug/L
Trichloroethene	0.3 U	1	ug/L
Trichlorofluoromethane	0.7 U	1	ug/L
Vinyl acetate	0.2 U	1	ug/L
Vinyl chloride	0.5 U	1	ug/L

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Volatile Organic Compounds by GCMS - Quality Control										
Batch 6I01009 - EPA 5030B_MS										
Blank (6I01009-BLK1) Continued				Prepared: 09/01/2006 11:27 Analyzed: 09/01/2006 13:09						
Surrogate: Toluene-d8	*51.9*		*ug/L*	*50.0*		*104*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*45.1*		*ug/L*	*50.0*		*90*	*60-135*			
Surrogate: Dibromofluoromethane	*50.6*		*ug/L*	*50.0*		*101*	*52-149*			
LCS (6I01009-BS1)				Prepared: 09/01/2006 11:27 Analyzed: 09/01/2006 21:26						
1,1-Dichloroethene	25.3	1	ug/L	20.0		126	49-156			
Benzene	21.6	1	ug/L	20.0		108	64-132			
Chlorobenzene	19.4	1	ug/L	20.0		97	68-135			
Toluene	19.4	1	ug/L	20.0		97	58-132			
Trichloroethene	21.9	1	ug/L	20.0		110	66-130			
Surrogate: Toluene-d8	*52.6*		*ug/L*	*50.0*		*105*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*39.5*		*ug/L*	*50.0*		*79*	*60-135*			
Surrogate: Dibromofluoromethane	*51.0*		*ug/L*	*50.0*		*102*	*52-149*			
Matrix Spike (6I01009-MS1)		**Source: A604039-19**		Prepared: 09/01/2006 11:27 Analyzed: 09/01/2006 13:39						
1,1-Dichloroethene	25.6	1	ug/L	20.0	0.8 U	128	36-185			
Benzene	21.3	1	ug/L	20.0	0.1 U	106	65-143			
Chlorobenzene	21.7	1	ug/L	20.0	0.1 U	108	64-140			
Toluene	20.2	1	ug/L	20.0	0.2 U	101	62-144			
Trichloroethene	21.8	1	ug/L	20.0	0.3 U	109	51-152			
Surrogate: Toluene-d8	*52.6*		*ug/L*	*50.0*		*105*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*42.6*		*ug/L*	*50.0*		*85*	*60-135*			
Surrogate: Dibromofluoromethane	*52.2*		*ug/L*	*50.0*		*104*	*52-149*			
Matrix Spike Dup (6I01009-MSD1)		**Source: A604039-19**		Prepared: 09/01/2006 11:27 Analyzed: 09/01/2006 14:08						
1,1-Dichloroethene	25.7	1	ug/L	20.0	0.8 U	128	36-185	0.3	34	
Benzene	21.2	1	ug/L	20.0	0.1 U	106	65-143	0.4	25	
Chlorobenzene	21.6	1	ug/L	20.0	0.1 U	108	64-140	0.3	23	
Toluene	21.0	1	ug/L	20.0	0.2 U	105	62-144	4	24	
Trichloroethene	21.9	1	ug/L	20.0	0.3 U	110	51-152	0.6	28	
Surrogate: Toluene-d8	*52.7*		*ug/L*	*50.0*		*105*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*43.1*		*ug/L*	*50.0*		*86*	*60-135*			
Surrogate: Dibromofluoromethane	*53.6*		*ug/L*	*50.0*		*107*	*52-149*			
Semivolatile Organic Compounds by GC - Quality Control										
Batch 6I07012 - EPA 504/8011										
Blank (6I07012-BLK1)				Prepared: 09/07/2006 14:42 Analyzed: 09/07/2006 17:59						
1,2-Dibromoethane	0.0040 U	0.0200	ug/L							
1,2-Dibromo-3-chloropropane	0.0040 U	0.0200	ug/L							
LCS (6I07012-BS1)				Prepared: 09/07/2006 14:42 Analyzed: 09/07/2006 18:10						
1,2-Dibromoethane	0.204	0.0200	ug/L	0.250		81	60-140			
1,2-Dibromo-3-chloropropane	0.152	0.0200	ug/L	0.250		61	60-140			
Matrix Spike (6I07012-MS1)		**Source: A604252-04**		Prepared: 09/07/2006 14:42 Analyzed: 09/07/2006 18:20						
1,2-Dibromoethane	0.248	0.0200	ug/L	0.250	0.0040 U	99	65-135			
1,2-Dibromo-3-chloropropane	0.203	0.0200	ug/L	0.250	0.0040 U	81	65-135			
Matrix Spike Dup (6I07012-MSD1)		**Source: A604252-04**		Prepared: 09/07/2006 14:42 Analyzed: 09/07/2006 18:31						
1,2-Dibromoethane	0.209	0.0200	ug/L	0.250	0.0040 U	84	65-135	17	18	
1,2-Dibromo-3-chloropropane	0.256 QR-02	0.0200	ug/L	0.250	0.0040 U	102	65-135	23	20	QR-02
Metals by EPA 6000/7000 Series Methods - Quality Control										

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6I07003 - EPA 3005A										
Blank (6I07003-BLK1)				Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 18:40						
Antimony	0.2 U	0.2	ug/L							
Arsenic	0.2 U	1	ug/L							
Barium	1 U	1	ug/L							
Beryllium	0.2 U	0.2	ug/L							
Cadmium	0.2 U	0.2	ug/L							
Chromium	0.6 U	1	ug/L							
Cobalt	0.04 U	1	ug/L							
Copper	0.3 U	0.3	ug/L							
Iron	4 U	10	ug/L							
Lead	0.3 U	1	ug/L							
Nickel	0.3 U	1	ug/L							
Selenium	0.2 U	1	ug/L							
Silver	0.03 U	0.05	ug/L							
Sodium	0.02 U	0.1	mg/L							
Thallium	0.02 U	0.1	ug/L							
Vanadium	0.3 U	1	ug/L							
Zinc	10 U	10	ug/L							
LCS (6I07003-BS1)				Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 18:45						
Antimony	50.8	0.2	ug/L	50.0		102	85-115			
Arsenic	46.1	1	ug/L	50.0		92	85-115			
Barium	51.5	1	ug/L	50.0		103	85-115			
Beryllium	50.4	0.2	ug/L	50.0		101	85-115			
Cadmium	48.2	0.2	ug/L	50.0		96	85-115			
Chromium	54.6	1	ug/L	50.0		109	85-115			
Cobalt	50.7	1	ug/L	50.0		101	85-115			
Copper	49.2	0.3	ug/L	50.0		98	85-115			
Iron	51.5	10	ug/L	50.0		103	85-115			
Lead	51.6	1	ug/L	50.0		103	85-115			
Nickel	51.5	1	ug/L	50.0		103	85-115			
Selenium	44.3	1	ug/L	50.0		89	85-115			
Silver	4.81	0.05	ug/L	5.00		96	85-115			
Sodium	0.492	0.1	mg/L	0.500		98	85-115			
Thallium	50.3	0.1	ug/L	50.0		101	85-115			
Vanadium	52.5	1	ug/L	50.0		105	85-115			
Zinc	47.5	10	ug/L	50.0		95	85-115			
Matrix Spike (6I07003-MS1)		**Source: A604241-02**		Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 18:58						
Antimony	515 D	2	ug/L	500	10.6	101	70-130			D
Arsenic	471 D	10	ug/L	500	2 U	94	70-130			D
Barium	523 D	12	ug/L	500	13.0	102	70-130			D
Beryllium	500 D	2	ug/L	500	2 U	100	70-130			D
Cadmium	485 D	2	ug/L	500	2 U	97	70-130			D
Chromium	497 D	10	ug/L	500	6 U	99	70-130			D
Cobalt	524 D	10	ug/L	500	13.6	102	70-130			D
Copper	502 D	3	ug/L	500	3 U	100	70-130			D
Iron	1500 D	100	ug/L	500	1020	96	70-130			D
Lead	524 D	10	ug/L	500	3 U	105	70-130			D
Nickel	521 D	10	ug/L	500	5.49	103	70-130			D
Selenium	463 D	10	ug/L	500	4.37	92	70-130			D
Silver	51.2 D	0.5	ug/L	50.0	0.3 U	102	70-130			D

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6I07003 - EPA 3005A										
Matrix Spike (6I07003-MS1) Continued		**Source: A604241-02**		Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 18:58						
Sodium	10.4 D	1	mg/L	5.00	5.49	99	70-130			D
Thallium	518 D	1	ug/L	500	0.2 U	104	70-130			D
Vanadium	529 D	10	ug/L	500	3 U	106	70-130			D
Zinc	512 D	100	ug/L	500	100 U	102	70-130			D
Matrix Spike Dup (6I07003-MSD1)		**Source: A604241-02**		Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 19:05						
Antimony	526 D	2	ug/L	500	10.6	103	70-130	2	20	D
Arsenic	468 D	10	ug/L	500	2 U	94	70-130	0.6	20	D
Barium	530 D	12	ug/L	500	13.0	103	70-130	1	20	D
Beryllium	518 D	2	ug/L	500	2 U	104	70-130	4	20	D
Cadmium	492 D	2	ug/L	500	2 U	98	70-130	1	20	D
Chromium	499 D	10	ug/L	500	6 U	100	70-130	0.4	20	D
Cobalt	528 D	10	ug/L	500	13.6	103	70-130	0.9	20	D
Copper	501 D	3	ug/L	500	3 U	100	70-130	0.2	20	D
Iron	1480 D	100	ug/L	500	1020	92	70-130	1	20	D
Lead	526 D	10	ug/L	500	3 U	105	70-130	0.4	20	D
Nickel	528 D	10	ug/L	500	5.49	104	70-130	1	20	D
Selenium	451 D	10	ug/L	500	4.37	89	70-130	3	20	D
Silver	51.0 D	0.5	ug/L	50.0	0.3 U	102	70-130	0.5	20	D
Sodium	10.7 D	1	mg/L	5.00	5.49	105	70-130	3	20	D
Thallium	517 D	1	ug/L	500	0.2 U	103	70-130	0.2	20	D
Vanadium	526 D	10	ug/L	500	3 U	105	70-130	0.6	20	D
Zinc	507 D	100	ug/L	500	100 U	101	70-130	0.8	20	D
Post Spike (6I07003-PS1)		**Source: A604241-02**		Prepared: 09/08/2006 14:00 Analyzed: 09/08/2006 19:12						
Antimony	0.0498 D	0.0002	mg/L	0.0495	0.00105	98	75-125			D
Arsenic	0.0462 D	0.001	mg/L	0.0495	-3.66E-5	93	75-125			D
Barium	0.0508 D	0.001	mg/L	0.0495	0.00129	100	75-125			D
Beryllium	0.0479 D	0.0002	mg/L	0.0495	8.68E-5	97	75-125			D
Cadmium	0.0461 D	0.0002	mg/L	0.0495	1.45E-5	93	75-125			D
Chromium	0.0489 D	0.001	mg/L	0.0495	6.71E-5	99	75-125			D
Cobalt	0.0502 D	0.001	mg/L	0.0495	0.00135	99	75-125			D
Copper	0.0480 D	0.0003	mg/L	0.0495	-0.00112	99	75-125			D
Iron	0.149 D	0.01	mg/L	0.0495	0.101	98	75-125			D
Lead	0.0491 D	0.001	mg/L	0.0495	-0.000104	99	75-125			D
Nickel	0.0500 D	0.001	mg/L	0.0495	0.000544	100	75-125			D
Selenium	0.0439 D	0.001	mg/L	0.0495	0.000432	88	75-125			D
Silver	0.00483 D	0.00005	mg/L	0.00495	1.57E-5	97	75-125			D
Sodium	0.959 D	0.1	mg/L	0.495	0.544	84	75-125			D
Thallium	0.0483 D	0.0001	mg/L	0.0495	3.02E-6	98	75-125			D
Vanadium	0.0498 D	0.001	mg/L	0.0495	6.73E-6	101	75-125			D
Zinc	0.0491 D	0.0100	mg/L	0.0495	0.00214	95	75-125			D
Batch 6I08007 - EPA 7470A										
Blank (6I08007-BLK1)				Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 07:16						
Mercury	0.11 U	0.20	ug/L							
LCS (6I08007-BS1)				Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 08:25						
Mercury	8.30 D	0.40	ug/L	8.00		104	93-111			D
Matrix Spike (6I08007-MS1)		**Source: A604241-01**		Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 08:41						
Mercury	8.54 D	0.40	ug/L	8.00	0.22 U	107	85-115			D
Matrix Spike Dup (6I08007-MSD1)		**Source: A604241-01**		Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 08:45						

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6I08007 - EPA 7470A										
Matrix Spike Dup (6I08007-MSD1) Continued		**Source: A604241-01**		Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 08:45						
Mercury	8.50 D	0.40	ug/L	8.00	0.22 U	106	85-115	0.5	12	D
Metals (Dissolved) by EPA 6000/7000 Series Methods - Quality Control										
Batch 6I07003 - EPA 3005A										
Blank (6I07003-BLK1)				Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 18:40						
Antimony	0.2 U	0.2	ug/L							
Arsenic	0.2 U	1	ug/L							
Barium	1 U	1	ug/L							
Beryllium	0.2 U	0.2	ug/L							
Cadmium	0.2 U	0.2	ug/L							
Chromium	0.6 U	1	ug/L							
Cobalt	0.04 U	1	ug/L							
Copper	0.3 U	0.3	ug/L							
Iron	4 U	10	ug/L							
Lead	0.3 U	1	ug/L							
Nickel	0.3 U	1	ug/L							
Selenium	0.2 U	1	ug/L							
Silver	0.03 U	0.05	ug/L							
Sodium	19 U	100	ug/L							
Thallium	0.02 U	0.1	ug/L							
Vanadium	0.3 U	1	ug/L							
Zinc	10 U	10	ug/L							
LCS (6I07003-BS1)				Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 18:45						
Antimony	50.8	0.2	ug/L	50.0		102	85-115			
Arsenic	46.1	1	ug/L	50.0		92	85-115			
Barium	51.5	1	ug/L	50.0		103	85-115			
Beryllium	50.4	0.2	ug/L	50.0		101	85-115			
Cadmium	48.2	0.2	ug/L	50.0		96	85-115			
Chromium	54.6	1	ug/L	50.0		109	85-115			
Cobalt	50.7	1	ug/L	50.0		101	85-115			
Copper	49.2	0.3	ug/L	50.0		98	85-115			
Iron	51.5	10	ug/L	50.0		103	85-115			
Lead	51.6	1	ug/L	50.0		103	85-115			
Nickel	51.5	1	ug/L	50.0		103	85-115			
Selenium	44.3	1	ug/L	50.0		89	85-115			
Silver	4.81	0.05	ug/L	5.00		96	85-115			
Sodium	492	100	ug/L	500		98	85-115			
Thallium	50.3	0.1	ug/L	50.0		101	85-115			
Vanadium	52.5	1	ug/L	50.0		105	85-115			
Zinc	47.5	10	ug/L	50.0		95	85-115			
Matrix Spike (6I07003-MS1)		**Source: A604241-02**		Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 18:58						
Antimony	515 D	2	ug/L	500	2 U	103	70-130			D
Arsenic	471 D	10	ug/L	500	2 U	94	70-130			D
Barium	523 D	12	ug/L	500	12 U	105	70-130			D
Beryllium	500 D	2	ug/L	500	2 U	100	70-130			D
Cadmium	485 D	2	ug/L	500	2 U	97	70-130			D
Chromium	497 D	10	ug/L	500	6 U	99	70-130			D
Cobalt	524 D	10	ug/L	500	17.3	101	70-130			D
Copper	502 D	3	ug/L	500	3 U	100	70-130			D

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals (Dissolved) by EPA 6000/7000 Series Methods - Quality Control										
Batch 6I07003 - EPA 3005A										
Matrix Spike (6I07003-MS1) Continued		**Source: A604241-02**		Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 18:58						
Iron	1500 D	100	ug/L	500	1010	98	70-130			D
Lead	524 D	10	ug/L	500	3 U	105	70-130			D
Nickel	521 D	10	ug/L	500	6.81	103	70-130			D
Selenium	463 D	10	ug/L	500	3.16	92	70-130			D
Silver	51.2 D	0.5	ug/L	50.0	0.3 U	102	70-130			D
Sodium	10400 D	1000	ug/L	5000	5560	97	70-130			D
Thallium	518 D	1	ug/L	500	0.2 U	104	70-130			D
Vanadium	529 D	10	ug/L	500	3 U	106	70-130			D
Zinc	512 D	100	ug/L	500	100 U	102	70-130			D
Matrix Spike Dup (6I07003-MSD1)		**Source: A604241-02**		Prepared: 09/07/2006 15:05 Analyzed: 09/08/2006 19:05						
Antimony	526 D	2	ug/L	500	2 U	105	70-130	2	20	D
Arsenic	468 D	10	ug/L	500	2 U	94	70-130	0.6	20	D
Barium	530 D	12	ug/L	500	12 U	106	70-130	1	20	D
Beryllium	518 D	2	ug/L	500	2 U	104	70-130	4	20	D
Cadmium	492 D	2	ug/L	500	2 U	98	70-130	1	20	D
Chromium	499 D	10	ug/L	500	6 U	100	70-130	0.4	20	D
Cobalt	528 D	10	ug/L	500	17.3	102	70-130	0.9	20	D
Copper	501 D	3	ug/L	500	3 U	100	70-130	0.2	20	D
Iron	1480 D	100	ug/L	500	1010	94	70-130	1	20	D
Lead	526 D	10	ug/L	500	3 U	105	70-130	0.4	20	D
Nickel	528 D	10	ug/L	500	6.81	104	70-130	1	20	D
Selenium	451 D	10	ug/L	500	3.16	89	70-130	3	20	D
Silver	51.0 D	0.5	ug/L	50.0	0.3 U	102	70-130	0.5	20	D
Sodium	10700 D	1000	ug/L	5000	5560	104	70-130	3	20	D
Thallium	517 D	1	ug/L	500	0.2 U	103	70-130	0.2	20	D
Vanadium	526 D	10	ug/L	500	3 U	105	70-130	0.6	20	D
Zinc	507 D	100	ug/L	500	100 U	101	70-130	0.8	20	D
Post Spike (6I07003-PS1)		**Source: A604241-02**		Prepared: 09/08/2006 14:00 Analyzed: 09/08/2006 19:12						
Antimony	0.0498 D	0.0002	mg/L	0.0495	-5.94E-8	101	75-125			D
Arsenic	0.0462 D	0.001	mg/L	0.0495	-2.33E-6	93	75-125			D
Barium	0.0508 D	0.001	mg/L	0.0495	0.00110	100	75-125			D
Beryllium	0.0479 D	0.0002	mg/L	0.0495	1.95E-5	97	75-125			D
Cadmium	0.0461 D	0.0002	mg/L	0.0495	1.64E-5	93	75-125			D
Chromium	0.0489 D	0.001	mg/L	0.0495	5.41E-5	99	75-125			D
Cobalt	0.0502 D	0.001	mg/L	0.0495	0.00171	98	75-125			D
Copper	0.0480 D	0.0003	mg/L	0.0495	-0.000808	99	75-125			D
Iron	0.149 D	0.01	mg/L	0.0495	0.100	99	75-125			D
Lead	0.0491 D	0.001	mg/L	0.0495	-9.99E-5	99	75-125			D
Nickel	0.0500 D	0.001	mg/L	0.0495	0.000674	100	75-125			D
Selenium	0.0439 D	0.001	mg/L	0.0495	0.000312	88	75-125			D
Silver	0.00483 D	0.00005	mg/L	0.00495	9.27E-6	97	75-125			D
Sodium	0.959 D	0.1	mg/L	0.495	0.550	82	75-125			D
Thallium	0.0483 D	0.0001	mg/L	0.0495	-2.28E-7	98	75-125			D
Vanadium	0.0498 D	0.001	mg/L	0.0495	-8.82E-6	101	75-125			D
Zinc	0.0491 D	0.0100	mg/L	0.0495	0.00271	94	75-125			D
Batch 6I08007 - EPA 7470A										
Blank (6I08007-BLK1)				Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 07:16						
Mercury	0.11 U	0.20	ug/L							

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals (Dissolved) by EPA 6000/7000 Series Methods - Quality Control										
Batch 6I08007 - EPA 7470A										
LCS (6I08007-BS1)				Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 08:25						
Mercury	8.30 D	0.40	ug/L	8.00		104	93-111			D
Matrix Spike (6I08007-MS1)		Source: A604241-01		Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 08:41						
Mercury	8.54 D	0.40	ug/L	8.00	0.22 U	107	85-115			D
Matrix Spike Dup (6I08007-MSD1)		Source: A604241-01		Prepared: 09/08/2006 12:20 Analyzed: 09/11/2006 08:45						
Mercury	8.50 D	0.40	ug/L	8.00	0.22 U	106	85-115	0.5	12	D
Classical Chemistry Parameters - Quality Control										
Batch 6I01015 - Default Prep GenChem										
Blank (6I01015-BLK1)				Prepared: 09/01/2006 11:42 Analyzed: 09/02/2006 03:19						
Nitrate as N	0.008 U	0.050	mg/L							
Chloride	1.12 B	1.00	mg/L							B
LCS (6I01015-BS1)				Prepared: 09/01/2006 11:42 Analyzed: 09/02/2006 03:34						
Nitrate as N	5.12	0.050	mg/L	5.00		102	90-110			
Chloride	275 B	1.00	mg/L	250		110	90-110			B
Matrix Spike (6I01015-MS1)		Source: A603675-01		Prepared: 09/01/2006 11:42 Analyzed: 09/02/2006 03:49						
Nitrate as N	10.2	0.050	mg/L	5.10	0.260	195	40-152			
Chloride	238 B	1.00	mg/L	255	60.0	70	51-149			B
Matrix Spike Dup (6I01015-MSD1)		Source: A603675-01		Prepared: 09/01/2006 11:42 Analyzed: 09/02/2006 04:03						
Nitrate as N	10.3	0.050	mg/L	5.10	0.260	196	40-152	0.6	23	
Chloride	241 B	1.00	mg/L	255	60.0	71	51-149	1	26	B
Batch 6I05003 - Default Prep GenChem										
Blank (6I05003-BLK1)				Prepared: 09/05/2006 08:31 Analyzed: 09/06/2006 17:05						
Total Dissolved Solids	10 U	10	mg/L							
LCS (6I05003-BS1)				Prepared: 09/05/2006 08:31 Analyzed: 09/06/2006 17:05						
Total Dissolved Solids	300	10	mg/L	300		100	86-118			
Duplicate (6I05003-DUP1)		Source: A603682-01		Prepared: 09/05/2006 08:31 Analyzed: 09/06/2006 17:05						
Total Dissolved Solids	436	10	mg/L		440			0.9	25	
Batch 6I11007 - NO PREP										
Blank (6I11007-BLK1)				Prepared: 09/11/2006 09:55 Analyzed: 09/11/2006 15:20						
Ammonia as N	0.003 U	0.02	mg/L							
LCS (6I11007-BS1)				Prepared: 09/11/2006 09:55 Analyzed: 09/11/2006 15:21						
Ammonia as N	1.04	0.02	mg/L	1.00		104	90-110			
Matrix Spike (6I11007-MS1)		Source: A604241-02		Prepared: 09/11/2006 09:55 Analyzed: 09/11/2006 15:24						
Ammonia as N	0.901 QL-01	0.02	mg/L	1.00	0.003 U	90	90-110			QL-01
Matrix Spike Dup (6I11007-MSD1)		Source: A604241-02		Prepared: 09/11/2006 09:55 Analyzed: 09/11/2006 15:25						
Ammonia as N	0.885 QL-01	0.02	mg/L	1.00	0.003 U	88	90-110	2	10	QL-01

Special Notes

[1] B = Analyte is found in the associated blank as well as in the sample (CLP B-flag).

[2] D = Data reported from a dilution

[3] I = Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

[4] QL-01 = Sample results for the QC batch were accepted based on LCS/LCSD percent recoveries and RPD values.

[5] QR-02 = The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

[6] U = Analyte included in the analysis, but not detected

Laboratory Certification Summary

Analysis	Matrix	Cert ID	Cert Number
8011	Water	NELAC	E83182
8260B Appendix 1	Water	NELAC	E83182
Ammonia 350.1	Water	NELAC	E83182
Antimony Dissolved EPA 6020	Water	NELAC	E83182
Antimony Total EPA 6020	Water	NELAC	E83182
Arsenic Dissolved EPA 6020	Water	NELAC	E83182
Arsenic Total EPA 6020	Water	NELAC	E83182
Barium Dissolved EPA 6020	Water	NELAC	E83182
Barium Total EPA 6020	Water	NELAC	E83182
Beryllium Dissolved EPA 6020	Water	NELAC	E83182
Beryllium Total EPA 6020	Water	NELAC	E83182
Cadmium Dissolved EPA 6020	Water	NELAC	E83182
Cadmium Total EPA 6020	Water	NELAC	E83182
Chloride 300	Water	NELAC	E83182
Chromium Dissolved EPA 6020	Water	NELAC	E83182
Chromium Total EPA 6020	Water	NELAC	E83182
Cobalt Dissolved EPA 6020	Water	NELAC	E83182
Cobalt Total EPA 6020	Water	NELAC	E83182
Copper Dissolved EPA 6020	Water	NELAC	E83182
Copper Total EPA 6020	Water	NELAC	E83182
Iron Dissolved EPA 6020	Water	NELAC	E83182
Iron Total EPA 6020	Water	NELAC	E83182
Lead Dissolved EPA 6020	Water	NELAC	E83182
Lead Total EPA 6020	Water	NELAC	E83182
Mercury Dissolved EPA 7470A	Water	NELAC	E83182
Mercury Total EPA 7470A	Water	NELAC	E83182
Nickel Dissolved EPA 6020	Water	NELAC	E83182
Nickel Total EPA 6020	Water	NELAC	E83182
Nitrate as N 300	Water	NELAC	E83182
Selenium Dissolved EPA 6020	Water	NELAC	E83182
Selenium Total EPA 6020	Water	NELAC	E83182
Silver Dissolved EPA 6020	Water	NELAC	E83182
Silver Total EPA 6020	Water	NELAC	E83182
Sodium Dissolved EPA 6020	Water	NELAC	E83182
Sodium Total EPA 6020	Water	NELAC	E83182
TDS 160.1	Water	NELAC	E83182
Thallium Dissolved EPA 6020	Water	NELAC	E83182
Thallium Total EPA 6020	Water	NELAC	E83182
Vanadium Dissolved EPA 6020	Water	NELAC	E83182
Vanadium Total EPA 6020	Water	NELAC	E83182
Zinc Dissolved EPA 6020	Water	NELAC	E83182
Zinc Total EPA 6020	Water	NELAC	E83182

JULY 2006 ANALYTICAL DATA

Environmental Conservation Laboratories, Inc.
10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

www.encolabs.com

Monday, July 31, 2006

Jones Edmunds & Associates, Inc. (JO006)

Attn: Lynne McDaniel

730 N.E.Waldo Road Bldg.A

Gainesville, FL 32641

RE: Project Number: 03860-022-01, Project Name/Desc: Citrus Co. LF
ENCO Workorder: A603504

Dear Lynne McDaniel,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, July 19, 2006.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

This data has been produced in accordance with NELAC standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

David M. Camacho

Project Manager

Enclosure(s)

LAB #		A603504-01	A603504-02	A603504-03	A603504-04	A603504-05	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	Ground Water	Water	-
SAMPLE ID	Reporting Limit	06S2CC::13	06S2CC::11	06S2CC::10	06S2CC::12	TB#2	-
Volatile Organic Compounds by GCMS (Water)							
1,1,1,2-Tetrachloroethane	1 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
1,1,1-Trichloroethane	1 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
1,1,2,2-Tetrachloroethane	0.2 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
1,1,2-Trichloroethane	1 ug/L	<0.4 [3]	<0.4 [3]	<0.4 [3]	<0.4 [3]	<0.4 [3]	-
1,1-Dichloroethane	1 ug/L	0.7 [2]	<0.3 [3]	1	<0.3 [3]	<0.3 [3]	-
1,1-Dichloroethene	1 ug/L	<0.8 [3]	<0.8 [3]	<0.8 [3]	<0.8 [3]	<0.8 [3]	-
1,2,3-Trichloropropane	1 ug/L	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	-
1,2-Dichlorobenzene	1 ug/L	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	-
1,2-Dichloroethane	1 ug/L	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	-
1,2-Dichloropropane	1 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
1,4-Dichlorobenzene	1 ug/L	3	<0.2 [3]	5	<0.2 [3]	<0.2 [3]	-
2-Butanone	5 ug/L	<1 [3]	<1 [3]	<1 [3]	<1 [3]	<1 [3]	-
2-Hexanone	5 ug/L	<2 [3]	<2 [3]	<2 [3]	<2 [3]	<2 [3]	-
4-Methyl-2-pentanone	5 ug/L	<2 [3]	<2 [3]	<2 [3]	<2 [3]	<2 [3]	-
Acetone	5 ug/L	<3 [3]	<3 [3]	<3 [3]	<3 [3]	<3 [3]	-
Acrylonitrile	2 ug/L	<2 [3]	<2 [3]	<2 [3]	<2 [3]	<2 [3]	-
Benzene	1 ug/L	<0.1 [3]	<0.1 [3]	2	<0.1 [3]	<0.1 [3]	-
Bromochloromethane	1 ug/L	<0.9 [3]	<0.9 [3]	<0.9 [3]	<0.9 [3]	<0.9 [3]	-
Bromodichloromethane	0.4 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
Bromoform	1 ug/L	<0.5 [3]	<0.5 [3]	<0.5 [3]	<0.5 [3]	<0.5 [3]	-
Bromomethane	1 ug/L	<1 [3]	<1 [3]	<1 [3]	<1 [3]	<1 [3]	-
Carbon disulfide	5 ug/L	<0.4 [3]	<0.4 [3]	<0.4 [3]	<0.4 [3]	<0.4 [3]	-
Carbon tetrachloride	1 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
Chlorobenzene	1 ug/L	<0.1 [3]	<0.1 [3]	<0.1 [3]	<0.1 [3]	<0.1 [3]	-
Chloroethane	1 ug/L	<0.5 [3]	<0.5 [3]	<0.5 [3]	<0.5 [3]	<0.5 [3]	-
Chloroform	1 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
Chloromethane	1 ug/L	<0.6 [3]	<0.6 [3]	<0.6 [3]	<0.6 [3]	<0.6 [3]	-
cis-1,2-Dichloroethene	1 ug/L	2	<0.3 [3]	3	<0.3 [3]	<0.3 [3]	-
cis-1,3-Dichloropropene	0.2 ug/L	<0.1 [3]	<0.1 [3]	<0.1 [3]	<0.1 [3]	<0.1 [3]	-
Dibromochloromethane	0.2 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
Dibromomethane	1 ug/L	<0.4 [3]	<0.4 [3]	<0.4 [3]	<0.4 [3]	<0.4 [3]	-
Ethylbenzene	1 ug/L	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	-
Iodomethane	3 ug/L	<1 [3]	<1 [3]	<1 [3]	<1 [3]	<1 [3]	-
m,p-Xylenes	2 ug/L	1 [2]	<0.3 [3]	6	<0.3 [3]	<0.3 [3]	-
Methylene chloride	2 ug/L	<1 [3]	<1 [3]	6	<1 [3]	<1 [3]	-
o-Xylene	1 ug/L	<0.6 [3]	<0.6 [3]	4	<0.6 [3]	<0.6 [3]	-
Styrene	1 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
Tetrachloroethene	1 ug/L	<0.6 [3]	<0.6 [3]	<0.6 [3]	<0.6 [3]	<0.6 [3]	-
Toluene	1 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
trans-1,2-Dichloroethene	1 ug/L	<0.8 [3]	<0.8 [3]	<0.8 [3]	<0.8 [3]	<0.8 [3]	-
trans-1,3-Dichloropropene	0.2 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
trans-1,4-Dichloro-2-butene	1 ug/L	<0.5 [3]	<0.5 [3]	<0.5 [3]	<0.5 [3]	<0.5 [3]	-
Trichloroethene	1 ug/L	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	<0.3 [3]	-
Trichlorofluoromethane	1 ug/L	<0.7 [3]	<0.7 [3]	<0.7 [3]	<0.7 [3]	<0.7 [3]	-
Vinyl acetate	1 ug/L	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	<0.2 [3]	-
Vinyl chloride	1 ug/L	<0.5 [3]	<0.5 [3]	5	<0.5 [3]	<0.5 [3]	-

LAB #		A603504-01	A603504-02	A603504-03	A603504-04	A603504-05	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	Ground Water	Water	-
SAMPLE ID	Reporting Limit	06S2CC::13	06S2CC::11	06S2CC::10	06S2CC::12	TB#2	-
Volatile Organic Compounds by GCMS (continued)							
Toluene-d8	132 [surr]	104%	107%	105%	107%	109%	-
4-Bromofluorobenzene	135 [surr]	85%	84%	92%	83%	95%	-
Dibromofluoromethane	149 [surr]	111%	109%	111%	111%	105%	-
Semivolatile Organic Compounds by GCMS SIM (Water)							
Benzo(a)anthracene	0.10 ug/L	<0.04 [3]	<0.04 [3]	<0.04 [3]	<0.04 [3]	-	-
Benzo(b)fluoranthene	0.10 ug/L	<0.05 [3]	<0.05 [3]	<0.05 [3]	<0.05 [3]	-	-
Benzo(k)fluoranthene	0.10 ug/L	<0.06 [3]	<0.06 [3]	<0.06 [3]	<0.06 [3]	-	-
Benzo(g,h,i)perylene	0.10 ug/L	<0.07 [3]	<0.07 [3]	<0.07 [3]	<0.07 [3]	-	-
1-Methylnaphthalene	0.10 ug/L	<0.04 [3]	<0.04 [3]	<0.04 [3]	<0.04 [3]	-	-
Benzo(a)pyrene	0.10 ug/L	<0.03 [3]	<0.03 [3]	<0.03 [3]	<0.03 [3]	-	-
Dibenzo(a,h)anthracene	0.10 ug/L	<0.05 [3]	<0.05 [3]	<0.05 [3]	<0.05 [3]	-	-
Indeno(1,2,3-cd)pyrene	0.10 ug/L	<0.03 [3]	<0.03 [3]	<0.03 [3]	<0.03 [3]	-	-
2-Methylnaphthalene	0.10 ug/L	0.05 [2]	<0.05 [3]	0.06 [2]	<0.05 [3]	-	-
p-Terphenyl	148 [surr]	77%	86%	72%	77%	-	-
Acenaphthene	0.10 ug/L	<0.04 [3]	<0.04 [3]	<0.04 [3]	<0.04 [3]	-	-
Acenaphthylene	0.10 ug/L	<0.04 [3]	<0.04 [3]	<0.04 [3]	<0.04 [3]	-	-
Anthracene	0.10 ug/L	<0.04 [3]	<0.04 [3]	<0.04 [3]	<0.04 [3]	-	-
Chrysene	0.10 ug/L	<0.04 [3]	<0.04 [3]	<0.04 [3]	<0.04 [3]	-	-
Fluoranthene	0.10 ug/L	<0.03 [3]	<0.03 [3]	<0.03 [3]	<0.03 [3]	-	-
Fluorene	0.10 ug/L	<0.03 [3]	<0.03 [3]	<0.03 [3]	<0.03 [3]	-	-
Naphthalene	0.10 ug/L	0.31	<0.09 [3]	0.09 [2]	<0.09 [3]	-	-
Phenanthrene	0.10 ug/L	<0.03 [3]	<0.03 [3]	<0.03 [3]	<0.03 [3]	-	-
Pyrene	0.10 ug/L	<0.03 [3]	<0.03 [3]	<0.03 [3]	<0.03 [3]	-	-
Semivolatile Organic Compounds by GC (Water)							
1,2-Dibromoethane	0.02 ug/L	<0.01 [3]	<0.01 [3]	<0.01 [3]	<0.01 [3]	-	-
1,2-Dibromo-3-chloropropane	0.02 ug/L	<0.009 [3]	<0.009 [3]	<0.009 [3]	<0.009 [3]	-	-
1,3-Dichlorobenzene	140 [surr]	137%	114%	140%	122%	-	-
Metals by EPA 6000/7000 Series Methods (Water)							
Antimony	0.2 ug/L	<2 [1] [3]	<2 [1] [3]	<2 [1] [3]	<2 [1] [3]	-	-
Arsenic	1 ug/L	6 [1] [2]	<2 [1] [3]	<2 [1] [3]	3 [1] [2]	-	-
Barium	1 ug/L	<12 [1] [3]	13 [1]	<12 [1] [3]	14 [1]	-	-
Beryllium	0.2 ug/L	<2 [1] [3]	<2 [1] [3]	<2 [1] [3]	<2 [1] [3]	-	-
Cadmium	0.2 ug/L	<2 [1] [3]	<2 [1] [3]	<2 [1] [3]	<2 [1] [3]	-	-
Chromium	1 ug/L	<6 [1] [3]	<6 [1] [3]	<6 [1] [3]	<6 [1] [3]	-	-
Cobalt	1 ug/L	<0.4 [1] [3]	<0.4 [1] [3]	<0.4 [1] [3]	<0.4 [1] [3]	-	-
Copper	0.3 ug/L	<3 [1] [3]	<3 [1] [3]	<3 [1] [3]	<3 [1] [3]	-	-
Iron	10 ug/L	583 [1]	<54 [1] [3]	1390 [1]	6710 [1]	-	-
Lead	1 ug/L	<3 [1] [3]	<3 [1] [3]	<3 [1] [3]	<3 [1] [3]	-	-
Mercury	0.20 ug/L	<0.11 [3]	<0.11 [3]	<0.11 [3]	<0.11 [3]	-	-
Nickel	1 ug/L	<3 [1] [3]	<3 [1] [3]	<3 [1] [3]	<3 [1] [3]	-	-
Selenium	1 ug/L	<2 [1] [3]	<2 [1] [3]	<2 [1] [3]	<2 [1] [3]	-	-
Silver	0.05 ug/L	<0.3 [1] [3]	<0.3 [1] [3]	<0.3 [1] [3]	<0.3 [1] [3]	-	-
Sodium	0.100 mg/L	2.95 [1]	2.74 [1]	5.95 [1]	2.48 [1]	-	-
Thallium	0.1 ug/L	<0.2 [1] [3]	<0.2 [1] [3]	<0.2 [1] [3]	<0.2 [1] [3]	-	-

LAB #		A603504-01	A603504-02	A603504-03	A603504-04	A603504-05	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	Ground Water	Water	-
SAMPLE ID	Reporting Limit	06S2CC::13	06S2CC::11	06S2CC::10	06S2CC::12	TB#2	-
Metals by EPA 6000/7000 Series Methods (continued)							
Vanadium	1 ug/L	<3 [1] [3]	<3 [1] [3]	<3 [1] [3]	<3 [1] [3]	-	-
Zinc	10 ug/L	<100 [1] [3]	<100 [1] [3]	<100 [1] [3]	<100 [1] [3]	-	-
Metals (Dissolved) by EPA 6000/7000 Series Methods (Water)							
Antimony	0.2 ug/L	-	-	<2 [1] [3]	-	-	-
Arsenic	1 ug/L	-	-	<2 [1] [3]	-	-	-
Barium	1 ug/L	-	-	32 [1]	-	-	-
Cadmium	0.2 ug/L	-	-	<2 [1] [3]	-	-	-
Chromium	1 ug/L	-	-	<6 [1] [3]	-	-	-
Cobalt	1 ug/L	-	-	<0.4 [1] [3]	-	-	-
Copper	0.3 ug/L	-	-	<3 [1] [3]	-	-	-
Iron	10 ug/L	-	-	1060 [1]	-	-	-
Lead	1 ug/L	-	-	<3 [1] [3]	-	-	-
Mercury	0.20 ug/L	-	-	<0.11 [3]	-	-	-
Nickel	1 ug/L	-	-	<3 [1] [3]	-	-	-
Selenium	1 ug/L	-	-	<2 [1] [3]	-	-	-
Silver	0.05 ug/L	-	-	<0.3 [1] [3]	-	-	-
Sodium	100 ug/L	-	-	6130 [1]	-	-	-
Thallium	0.1 ug/L	-	-	<0.2 [1] [3]	-	-	-
Vanadium	1 ug/L	-	-	<3 [1] [3]	-	-	-
Zinc	10 ug/L	-	-	<100 [1] [3]	-	-	-
Classical Chemistry Parameters (Water)							
Ammonia as N	0.02 mg/L	<0.003 [3]	<0.003 [3]	<0.003 [3]	0.3	-	-
Chloride	1.00 mg/L	5.72	5.10	6.64	5.14	-	-
Nitrate as N	0.050 mg/L	0.266	0.336	0.272	0.317	-	-
Total Dissolved Solids	10 mg/L	118	246	114	370	-	-
Field Parameters (Water)							
Specific Conductance (EC)	0 umhos/cm	93	361	62	600	-	-
Dissolved Oxygen	0.00 mg/L	1.21	1.34	0.81	0.46	-	-
pH	0.00 pH Units	5.31	7.10	4.65	6.67	-	-
Oxidation/Reduction Potential	mV	146.8	18.30	169.4	-144.6	-	-
Temperature	0.00 °C	26.72	26.00	29.26	26.28	-	-
Turbidity	0.00 NTU	2.80	0.56	20.7	4.87	-	-

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes

Volatile Organic Compounds by GCMS - Quality Control

Batch 6G27004 - EPA 5030B_MS

Blank (6G27004-BLK1) Prepared: 07/27/2006 11:57 Analyzed: 07/27/2006 12:40

1,1,1,2-Tetrachloroethane	0.2 U	1	ug/L
1,1,1-Trichloroethane	0.2 U	1	ug/L
1,1,2,2-Tetrachloroethane	0.2 U	0.2	ug/L
1,1,2-Trichloroethane	0.4 U	1	ug/L
1,1-Dichloroethane	0.3 U	1	ug/L
1,1-Dichloroethene	0.8 U	1	ug/L
1,2,3-Trichloropropane	0.3 U	1	ug/L
1,2-Dichlorobenzene	0.3 U	1	ug/L
1,2-Dichloroethane	0.3 U	1	ug/L
1,2-Dichloropropane	0.2 U	1	ug/L
1,4-Dichlorobenzene	0.2 U	1	ug/L
2-Butanone	1 U	5	ug/L
2-Hexanone	2 U	5	ug/L
4-Methyl-2-pentanone	2 U	5	ug/L
Acetone	3 U	5	ug/L
Acrylonitrile	2 U	2	ug/L
Benzene	0.1 U	1	ug/L
Bromochloromethane	0.9 U	1	ug/L
Bromodichloromethane	0.2 U	0.4	ug/L
Bromoform	0.5 U	1	ug/L
Bromomethane	1 U	1	ug/L
Carbon disulfide	0.4 U	5	ug/L
Carbon tetrachloride	0.2 U	1	ug/L
Chlorobenzene	0.1 U	1	ug/L
Chloroethane	0.5 U	1	ug/L
Chloroform	0.2 U	1	ug/L
Chloromethane	0.6 U	1	ug/L
cis-1,2-Dichloroethene	0.3 U	1	ug/L
cis-1,3-Dichloropropene	0.1 U	0.2	ug/L
Dibromochloromethane	0.2 U	0.2	ug/L
Dibromomethane	0.4 U	1	ug/L
Ethylbenzene	0.3 U	1	ug/L
Iodomethane	1 U	3	ug/L
m,p-Xylenes	0.3 U	2	ug/L
Methylene chloride	1 U	2	ug/L
o-Xylene	0.6 U	1	ug/L
Styrene	0.2 U	1	ug/L
Tetrachloroethene	0.6 U	1	ug/L
Toluene	0.2 U	1	ug/L
trans-1,2-Dichloroethene	0.8 U	1	ug/L
trans-1,3-Dichloropropene	0.2 U	0.2	ug/L
trans-1,4-Dichloro-2-butene	0.5 U	1	ug/L
Trichloroethene	0.3 U	1	ug/L
Trichlorofluoromethane	0.7 U	1	ug/L
Vinyl acetate	0.2 U	1	ug/L
Vinyl chloride	0.5 U	1	ug/L

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Volatile Organic Compounds by GCMS - Quality Control										
Batch 6G27004 - EPA 5030B_MS										
Blank (6G27004-BLK1) Continued				Prepared: 07/27/2006 11:57 Analyzed: 07/27/2006 12:40						
Surrogate: Toluene-d8	*52.6*		*ug/L*	*50.0*		*105*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*42.4*		*ug/L*	*50.0*		*85*	*60-135*			
Surrogate: Dibromofluoromethane	*52.3*		*ug/L*	*50.0*		*105*	*52-149*			
LCS (6G27004-BS1)				Prepared: 07/27/2006 11:57 Analyzed: 07/27/2006 12:11						
1,1-Dichloroethene	24.6	1	ug/L	20.0		123	49-156		200	
Benzene	18.6	1	ug/L	20.0		93	64-132		200	
Chlorobenzene	22.2	1	ug/L	20.0		111	68-135		200	
Toluene	18.5	1	ug/L	20.0		92	58-132		200	
Trichloroethene	21.1	1	ug/L	20.0		106	66-130		200	
Surrogate: Toluene-d8	*51.1*		*ug/L*	*50.0*		*102*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*39.9*		*ug/L*	*50.0*		*80*	*60-135*			
Surrogate: Dibromofluoromethane	*38.3*		*ug/L*	*50.0*		*77*	*52-149*			
Matrix Spike (6G27004-MS1)		**Source: A603504-01**		Prepared: 07/27/2006 11:57 Analyzed: 07/27/2006 13:09						
1,1-Dichloroethene	24.7	1	ug/L	20.0	0.8 U	124	36-185		34	
Benzene	18.8	1	ug/L	20.0	0.1 U	94	65-143		25	
Chlorobenzene	23.1	1	ug/L	20.0	0.1 U	116	64-140		23	
Toluene	17.0	1	ug/L	20.0	0.2 U	85	62-144		24	
Trichloroethene	21.2	1	ug/L	20.0	0.3 U	106	51-152		28	
Surrogate: Toluene-d8	*53.7*		*ug/L*	*50.0*		*107*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*38.2*		*ug/L*	*50.0*		*76*	*60-135*			
Surrogate: Dibromofluoromethane	*38.6*		*ug/L*	*50.0*		*77*	*52-149*			
Matrix Spike Dup (6G27004-MSD1)		**Source: A603504-01**		Prepared: 07/27/2006 11:57 Analyzed: 07/27/2006 13:38						
1,1-Dichloroethene	23.8	1	ug/L	20.0	0.8 U	119	36-185	4	34	
Benzene	18.1	1	ug/L	20.0	0.1 U	90	65-143	4	25	
Chlorobenzene	23.0	1	ug/L	20.0	0.1 U	115	64-140	0.4	23	
Toluene	16.4	1	ug/L	20.0	0.2 U	82	62-144	4	24	
Trichloroethene	21.2	1	ug/L	20.0	0.3 U	106	51-152	0	28	
Surrogate: Toluene-d8	*53.7*		*ug/L*	*50.0*		*107*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*39.8*		*ug/L*	*50.0*		*80*	*60-135*			
Surrogate: Dibromofluoromethane	*39.1*		*ug/L*	*50.0*		*78*	*52-149*			
Semivolatile Organic Compounds by GCMS SIM - Quality Control										
Batch 6G25005 - EPA 3510C_MS										
Blank (6G25005-BLK1)				Prepared: 07/25/2006 08:40 Analyzed: 07/26/2006 14:02						
Benzo(a)anthracene	0.04 U	0.10	ug/L							
Benzo(b)fluoranthene	0.05 U	0.10	ug/L							
Benzo(k)fluoranthene	0.06 U	0.10	ug/L							
Benzo(g,h,i)perylene	0.07 U	0.10	ug/L							
1-Methylnaphthalene	0.04 U	0.10	ug/L							
Benzo(a)pyrene	0.03 U	0.10	ug/L							
Dibenzo(a,h)anthracene	0.05 U	0.10	ug/L							
Indeno(1,2,3-cd)pyrene	0.03 U	0.10	ug/L							
2-Methylnaphthalene	0.05 U	0.10	ug/L							
Acenaphthene	0.04 U	0.10	ug/L							
Acenaphthylene	0.04 U	0.10	ug/L							
Anthracene	0.04 U	0.10	ug/L							
Chrysene	0.04 U	0.10	ug/L							

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Semivolatile Organic Compounds by GCMS SIM - Quality Control										
Batch 6G25005 - EPA 3510C_MS										
Blank (6G25005-BLK1) Continued				Prepared: 07/25/2006 08:40 Analyzed: 07/26/2006 14:02						
Fluoranthene	0.03 U	0.10	ug/L							
Fluorene	0.03 U	0.10	ug/L							
Naphthalene	0.09 U	0.10	ug/L							
Phenanthrene	0.03 U	0.10	ug/L							
Pyrene	0.03 U	0.10	ug/L							
Surrogate: p-Terphenyl	*4.42*		*ug/L*	*5.00*		*88*	*39-148*			
LCS (6G25005-BS1)				Prepared: 07/25/2006 08:40 Analyzed: 07/26/2006 14:18						
Benzo(g,h,i)perylene	1.23	0.10	ug/L	2.00		62	23-146		200	
Benzo(a)pyrene	1.77	0.10	ug/L	2.00		88	57-126		200	
Acenaphthene	1.98	0.10	ug/L	2.00		99	48-119		200	
Naphthalene	2.03	0.10	ug/L	2.00		102	38-138		200	
Surrogate: p-Terphenyl	*4.38*		*ug/L*	*5.00*		*88*	*39-148*			
Matrix Spike (6G25005-MS1)		**Source: A603576-01**		Prepared: 07/25/2006 08:40 Analyzed: 07/26/2006 14:35						
Benzo(g,h,i)perylene	1.18	0.10	ug/L	2.00	0.07 U	59	52-155		32	
Benzo(a)pyrene	1.66	0.10	ug/L	2.00	0.03 U	83	41-157		30	
Acenaphthene	1.91	0.10	ug/L	2.00	0.04 U	96	20-150		27	
Naphthalene	1.96	0.10	ug/L	2.00	0.09 U	98	30-112		33	
Surrogate: p-Terphenyl	*4.25*		*ug/L*	*5.00*		*85*	*39-148*			
Matrix Spike Dup (6G25005-MSD1)		**Source: A603576-01**		Prepared: 07/25/2006 08:40 Analyzed: 07/26/2006 14:52						
Benzo(g,h,i)perylene	1.14	0.10	ug/L	2.00	0.07 U	57	52-155	3	32	
Benzo(a)pyrene	1.47	0.10	ug/L	2.00	0.03 U	74	41-157	12	30	
Acenaphthene	1.83	0.10	ug/L	2.00	0.04 U	92	20-150	4	27	
Naphthalene	1.84	0.10	ug/L	2.00	0.09 U	92	30-112	6	33	
Surrogate: p-Terphenyl	*3.99*		*ug/L*	*5.00*		*80*	*39-148*			
Semivolatile Organic Compounds by GC - Quality Control										
Batch 6G30004 - EPA 504/8011										
Blank (6G30004-BLK1)				Prepared: 07/30/2006 00:00 Analyzed: 07/31/2006 09:26						
1,2-Dibromoethane	0.01 U	0.02	ug/L							
1,2-Dibromo-3-chloropropane	0.009 U	0.02	ug/L							
LCS (6G30004-BS1)				Prepared: 07/30/2006 00:00 Analyzed: 07/31/2006 09:37						
1,2-Dibromoethane	0.239	0.02	ug/L	0.250		96	60-140		200	
1,2-Dibromo-3-chloropropane	0.291	0.02	ug/L	0.250		116	60-140		200	
Matrix Spike (6G30004-MS1)		**Source: A603004-01**		Prepared: 07/30/2006 00:00 Analyzed: 07/31/2006 09:48						
1,2-Dibromoethane	0.223	0.02	ug/L	0.250	0.01 U	89	65-135		18	
1,2-Dibromo-3-chloropropane	0.317	0.02	ug/L	0.250	0.009 U	127	65-135		20	
Matrix Spike Dup (6G30004-MSD1)		**Source: A603004-01**		Prepared: 07/30/2006 00:00 Analyzed: 07/31/2006 09:59						
1,2-Dibromoethane	0.209	0.02	ug/L	0.250	0.01 U	84	65-135	6	18	
1,2-Dibromo-3-chloropropane	0.312	0.02	ug/L	0.250	0.009 U	125	65-135	2	20	
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G19013 - EPA 3005A										
Blank (6G19013-BLK1)				Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:34						
Antimony	0.2 U	0.2	ug/L							
Arsenic	0.2 U	1	ug/L							
Barium	1 U	1	ug/L							

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G19013 - EPA 3005A										
Blank (6G19013-BLK1) Continued				Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:34						
Beryllium	0.2 U	0.2	ug/L							
Cadmium	0.2 U	0.2	ug/L							
Chromium	0.6 U	1	ug/L							
Cobalt	0.04 U	1	ug/L							
Copper	0.3 U	0.3	ug/L							
Iron	5 U	10	ug/L							
Lead	0.3 U	1	ug/L							
Nickel	0.3 U	1	ug/L							
Selenium	0.2 U	1	ug/L							
Silver	0.03 U	0.05	ug/L							
Sodium	0.019 U	0.100	mg/L							
Thallium	0.02 U	0.1	ug/L							
Vanadium	0.3 U	1	ug/L							
Zinc	10 U	10	ug/L							
LCS (6G19013-BS1)				Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:40						
Antimony	49.5	0.2	ug/L	50.0		99	85-115		200	
Arsenic	48.1	1	ug/L	50.0		96	85-115		200	
Barium	50.7	1	ug/L	50.0		101	85-115		200	
Beryllium	48.5	0.2	ug/L	50.0		97	85-115		200	
Cadmium	48.4	0.2	ug/L	50.0		97	85-115		200	
Chromium	47.8	1	ug/L	50.0		96	85-115		200	
Cobalt	47.0	1	ug/L	50.0		94	85-115		200	
Copper	48.9	0.3	ug/L	50.0		98	85-115		200	
Iron	112	10	ug/L	50.0		224	85-115		200	
Lead	49.3	1	ug/L	50.0		99	85-115		200	
Nickel	48.8	1	ug/L	50.0		98	85-115		200	
Selenium	47.8	1	ug/L	50.0		96	85-115		200	
Silver	4.88	0.05	ug/L	5.00		98	85-115		200	
Sodium	0.505	0.100	mg/L	0.500		101	85-115		200	
Thallium	48.9	0.1	ug/L	50.0		98	85-115		200	
Vanadium	50.0	1	ug/L	50.0		100	85-115		200	
Zinc	45.6	10	ug/L	50.0		91	85-115		200	
Matrix Spike (6G19013-MS1)		**Source: A603088-03**		Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:55						
Antimony	500 D	2	ug/L	500	2 U	100	70-130		20	D
Arsenic	476 D	10	ug/L	500	2 U	95	70-130		20	D
Barium	510 D	12	ug/L	500	12 U	102	70-130		20	D
Beryllium	503 D	2	ug/L	500	2 U	101	70-130		20	D
Cadmium	488 D	2	ug/L	500	2 U	98	70-130		20	D
Chromium	486 D	10	ug/L	500	6 U	97	70-130		20	D
Cobalt	491 D	10	ug/L	500	0.4 U	98	70-130		20	D
Copper	503 D	3	ug/L	500	3 U	101	70-130		20	D
Iron	537 D	100	ug/L	500	54 U	107	70-130		20	D
Lead	491 D	10	ug/L	500	3 U	98	70-130		20	D
Nickel	496 D	10	ug/L	500	3 U	99	70-130		20	D
Selenium	446 D	10	ug/L	500	2 U	89	70-130		20	D
Silver	50.0 D	0.5	ug/L	50.0	0.3 U	100	70-130		20	D
Sodium	4.83 D	1.00	mg/L	5.00	0.190 U	97	70-130		20	D
Thallium	494 D	1	ug/L	500	0.2 U	99	70-130		20	D
Vanadium	504 D	10	ug/L	500	3 U	101	70-130		20	D

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G19013 - EPA 3005A										
Matrix Spike (6G19013-MS1) Continued		**Source: A603088-03**		Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:55						
Zinc	475 D	100	ug/L	500	100 U	95	70-130		20	D
Matrix Spike Dup (6G19013-MSD1)		**Source: A603088-03**		Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 22:05						
Antimony	505 D	2	ug/L	500	2 U	101	70-130	1	20	D
Arsenic	485 D	10	ug/L	500	2 U	97	70-130	2	20	D
Barium	515 D	12	ug/L	500	12 U	103	70-130	1	20	D
Beryllium	483 D	2	ug/L	500	2 U	97	70-130	4	20	D
Cadmium	488 D	2	ug/L	500	2 U	98	70-130	0	20	D
Chromium	482 D	10	ug/L	500	6 U	96	70-130	0.8	20	D
Cobalt	491 D	10	ug/L	500	0.4 U	98	70-130	0	20	D
Copper	504 D	3	ug/L	500	3 U	101	70-130	0.2	20	D
Iron	586 D	100	ug/L	500	54 U	117	70-130	9	20	D
Lead	487 D	10	ug/L	500	3 U	97	70-130	0.8	20	D
Nickel	493 D	10	ug/L	500	3 U	99	70-130	0.6	20	D
Selenium	451 D	10	ug/L	500	2 U	90	70-130	1	20	D
Silver	48.5 D	0.5	ug/L	50.0	0.3 U	97	70-130	3	20	D
Sodium	5.07 D	1.00	mg/L	5.00	0.190 U	101	70-130	5	20	D
Thallium	492 D	1	ug/L	500	0.2 U	98	70-130	0.4	20	D
Vanadium	507 D	10	ug/L	500	3 U	101	70-130	0.6	20	D
Zinc	474 D	100	ug/L	500	100 U	95	70-130	0.2	20	D
Post Spike (6G19013-PS1)		**Source: A603088-01**		Prepared: 07/20/2006 14:09 Analyzed: 07/21/2006 01:16						
Antimony	0.0491 D	0.0002	mg/L	0.0500	-0.0399	178	75-125		200	D
Arsenic	0.0467 D	0.001	mg/L	0.0500	-0.00223	98	75-125		200	D
Barium	0.0503 D	0.001	mg/L	0.0500	-0.0122	125	75-125		200	D
Beryllium	0.0482 D	0.0002	mg/L	0.0500	-0.00263	102	75-125		200	D
Cadmium	0.0474 D	0.0002	mg/L	0.0500	-0.0342	163	75-125		200	D
Chromium	0.0464 D	0.001	mg/L	0.0500	-0.122	337	75-125		200	D
Cobalt	0.0465 D	0.001	mg/L	0.0500	-0.0854	264	75-125		200	D
Copper	0.0485 D	0.0003	mg/L	0.0500	-0.0486	194	75-125		200	D
Iron	0.0433 D	0.01	mg/L	0.0500	-0.00506	97	75-125		200	D
Lead	0.0481 D	0.001	mg/L	0.0500	-0.0745	245	75-125		200	D
Nickel	0.0479 D	0.001	mg/L	0.0500	-0.0343	164	75-125		200	D
Selenium	0.0448 D	0.001	mg/L	0.0500	0.00124	87	75-125		200	D
Silver	0.00468 D	0.00005	mg/L	0.00500	-0.00291	152	75-125		200	D
Sodium	0.791 D	0.1	mg/L	0.500	1.26	NR	75-125		200	D
Thallium	0.0478 D	0.0001	mg/L	0.0500	-0.127	350	75-125		200	D
Vanadium	0.0488 D	0.001	mg/L	0.0500	-0.0781	254	75-125		200	D
Zinc	0.0467 D	0.0100	mg/L	0.0500	-0.0668	227	75-125		200	D
Post Spike (6G19013-PS2)		**Source: A603504-04**		Prepared: 07/21/2006 14:52 Analyzed: 07/21/2006 19:39						
Sodium	0.791 D	0.1	mg/L	0.500	0.248	109	75-125		200	D
Post Spike (6G19013-PS3)		**Source: A603500-01**		Prepared: 07/25/2006 13:39 Analyzed: 07/25/2006 16:33						
Iron	0.0473 D	0.01	mg/L	0.0500	0.00368	87	75-125		200	D
Batch 6G21020 - EPA 7470A										
Blank (6G21020-BLK1)				Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:01						
Mercury	0.11 U	0.20	ug/L							
LCS (6G21020-BS1)				Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:04						
Mercury	5.17	0.20	ug/L	5.00		103	93-111		200	
Matrix Spike (6G21020-MS1)		**Source: A603566-07**		Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:11						

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G21020 - EPA 7470A										
Matrix Spike (6G21020-MS1) Continued		**Source: A603566-07**		Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:11						
Mercury	5.57	0.20	ug/L	5.00	0.11 U	111	85-115		12	
Matrix Spike Dup (6G21020-MSD1)		**Source: A603566-07**		Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:24						
Mercury	5.64	0.20	ug/L	5.00	0.11 U	113	85-115	1	12	
Metals (Dissolved) by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G19013 - EPA 3005A										
Blank (6G19013-BLK1)				Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:34						
Antimony	0.2 U	0.2	ug/L							
Arsenic	0.2 U	1	ug/L							
Barium	1 U	1	ug/L							
Cadmium	0.2 U	0.2	ug/L							
Chromium	0.6 U	1	ug/L							
Cobalt	0.04 U	1	ug/L							
Copper	0.3 U	0.3	ug/L							
Iron	5 U	10	ug/L							
Lead	0.3 U	1	ug/L							
Nickel	0.3 U	1	ug/L							
Selenium	0.2 U	1	ug/L							
Silver	0.03 U	0.05	ug/L							
Sodium	19 U	100	ug/L							
Thallium	0.02 U	0.1	ug/L							
Vanadium	0.3 U	1	ug/L							
Zinc	10 U	10	ug/L							
LCS (6G19013-BS1)				Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:40						
Antimony	49.5	0.2	ug/L	50.0		99	85-115		200	
Arsenic	48.1	1	ug/L	50.0		96	85-115		200	
Barium	50.7	1	ug/L	50.0		101	85-115		200	
Cadmium	48.4	0.2	ug/L	50.0		97	85-115		200	
Chromium	47.8	1	ug/L	50.0		96	85-115		200	
Cobalt	47.0	1	ug/L	50.0		94	85-115		200	
Copper	48.9	0.3	ug/L	50.0		98	85-115		200	
Iron	112	10	ug/L	50.0		224	85-115		200	
Lead	49.3	1	ug/L	50.0		99	85-115		200	
Nickel	48.8	1	ug/L	50.0		98	85-115		200	
Selenium	47.8	1	ug/L	50.0		96	85-115		200	
Silver	4.88	0.05	ug/L	5.00		98	85-115		200	
Sodium	505	100	ug/L	500		101	85-115		200	
Thallium	48.9	0.1	ug/L	50.0		98	85-115		200	
Vanadium	50.0	1	ug/L	50.0		100	85-115		200	
Zinc	45.6	10	ug/L	50.0		91	85-115		200	
Matrix Spike (6G19013-MS1)		**Source: A603088-03**		Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:55						
Antimony	500 D	2	ug/L	500	2 U	100	70-130		20	D
Arsenic	476 D	10	ug/L	500	2 U	95	70-130		20	D
Barium	510 D	12	ug/L	500	12 U	102	70-130		20	D
Cadmium	488 D	2	ug/L	500	2 U	98	70-130		20	D
Chromium	486 D	10	ug/L	500	6 U	97	70-130		20	D
Cobalt	491 D	10	ug/L	500	0.4 U	98	70-130		20	D
Copper	503 D	3	ug/L	500	3 U	101	70-130		20	D
Iron	537 D	100	ug/L	500	54 U	107	70-130		20	D

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals (Dissolved) by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G19013 - EPA 3005A										
Matrix Spike (6G19013-MS1) Continued		**Source: A603088-03**		Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 21:55						
Lead	491 D	10	ug/L	500	3 U	98	70-130		20	D
Nickel	496 D	10	ug/L	500	3 U	99	70-130		20	D
Selenium	446 D	10	ug/L	500	2 U	89	70-130		20	D
Silver	50.0 D	0.5	ug/L	50.0	0.3 U	100	70-130		20	D
Sodium	4830 D	1000	ug/L	5000	190 U	97	70-130		20	D
Thallium	494 D	1	ug/L	500	0.2 U	99	70-130		20	D
Vanadium	504 D	10	ug/L	500	3 U	101	70-130		20	D
Zinc	475 D	100	ug/L	500	100 U	95	70-130		20	D
Matrix Spike Dup (6G19013-MSD1)		**Source: A603088-03**		Prepared: 07/19/2006 14:53 Analyzed: 07/20/2006 22:05						
Antimony	505 D	2	ug/L	500	2 U	101	70-130	1	20	D
Arsenic	485 D	10	ug/L	500	2 U	97	70-130	2	20	D
Barium	515 D	12	ug/L	500	12 U	103	70-130	1	20	D
Cadmium	488 D	2	ug/L	500	2 U	98	70-130	0	20	D
Chromium	482 D	10	ug/L	500	6 U	96	70-130	0.8	20	D
Cobalt	491 D	10	ug/L	500	0.4 U	98	70-130	0	20	D
Copper	504 D	3	ug/L	500	3 U	101	70-130	0.2	20	D
Iron	586 D	100	ug/L	500	54 U	117	70-130	9	20	D
Lead	487 D	10	ug/L	500	3 U	97	70-130	0.8	20	D
Nickel	493 D	10	ug/L	500	3 U	99	70-130	0.6	20	D
Selenium	451 D	10	ug/L	500	2 U	90	70-130	1	20	D
Silver	48.5 D	0.5	ug/L	50.0	0.3 U	97	70-130	3	20	D
Sodium	5070 D	1000	ug/L	5000	190 U	101	70-130	5	20	D
Thallium	492 D	1	ug/L	500	0.2 U	98	70-130	0.4	20	D
Vanadium	507 D	10	ug/L	500	3 U	101	70-130	0.6	20	D
Zinc	474 D	100	ug/L	500	100 U	95	70-130	0.2	20	D
Post Spike (6G19013-PS1)		**Source: A603088-01**		Prepared: 07/20/2006 14:09 Analyzed: 07/21/2006 01:16						
Antimony	0.0491 D	0.0002	mg/L	0.0500	-0.0399	178	75-125		200	D
Arsenic	0.0467 D	0.001	mg/L	0.0500	-0.00223	98	75-125		200	D
Barium	0.0503 D	0.001	mg/L	0.0500	-0.0122	125	75-125		200	D
Cadmium	0.0474 D	0.0002	mg/L	0.0500	-0.0342	163	75-125		200	D
Chromium	0.0464 D	0.001	mg/L	0.0500	-0.122	337	75-125		200	D
Cobalt	0.0465 D	0.001	mg/L	0.0500	-0.0854	264	75-125		200	D
Copper	0.0485 D	0.0003	mg/L	0.0500	-0.0486	194	75-125		200	D
Iron	0.0433 D	0.01	mg/L	0.0500	-0.00253	92	75-125		200	D
Lead	0.0481 D	0.001	mg/L	0.0500	-0.0745	245	75-125		200	D
Nickel	0.0479 D	0.001	mg/L	0.0500	-0.0343	164	75-125		200	D
Selenium	0.0448 D	0.001	mg/L	0.0500	0.00124	87	75-125		200	D
Silver	0.00468 D	0.00005	mg/L	0.00500	-0.00291	152	75-125		200	D
Sodium	0.791 D	0.1	mg/L	0.500	1.26	NR	75-125		200	D
Thallium	0.0478 D	0.0001	mg/L	0.0500	-0.127	350	75-125		200	D
Vanadium	0.0488 D	0.001	mg/L	0.0500	-0.0781	254	75-125		200	D
Zinc	0.0467 D	0.0100	mg/L	0.0500	-0.0668	227	75-125		200	D
Post Spike (6G19013-PS3)		**Source: A603500-01**		Prepared: 07/25/2006 13:39 Analyzed: 07/25/2006 16:33						
Iron	0.0473 D	0.01	mg/L	0.0500	0.00368	87	75-125		200	D
Batch 6G21020 - EPA 7470A										
Blank (6G21020-BLK1)				Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:01						
Mercury	0.11 U	0.20	ug/L							
LCS (6G21020-BS1)				Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:04						

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals (Dissolved) by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G21020 - EPA 7470A										
LCS (6G21020-BS1) Continued				Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:04						
Mercury	5.17	0.20	ug/L	5.00		103	93-111		200	
Matrix Spike (6G21020-MS1)		Source: A603566-07		Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:11						
Mercury	5.57	0.20	ug/L	5.00	0.11 U	111	85-115		12	
Matrix Spike Dup (6G21020-MSD1)		Source: A603566-07		Prepared: 07/22/2006 12:35 Analyzed: 07/24/2006 09:24						
Mercury	5.64	0.20	ug/L	5.00	0.11 U	113	85-115	1	12	
Classical Chemistry Parameters - Quality Control										
Batch 6G19003 - Default Prep GenChem										
Blank (6G19003-BLK1)				Prepared: 07/19/2006 18:40 Analyzed: 07/20/2006 17:20						
Total Dissolved Solids	10 U	10	mg/L							
LCS (6G19003-BS1)				Prepared: 07/19/2006 18:40 Analyzed: 07/20/2006 17:20						
Total Dissolved Solids	292	10	mg/L	300		97	86-118		200	
Duplicate (6G19003-DUP1)		Source: A603504-04		Prepared: 07/19/2006 18:40 Analyzed: 07/20/2006 17:20						
Total Dissolved Solids	344	10	mg/L		370			7	25	
Batch 6G19021 - Default Prep GenChem										
Blank (6G19021-BLK1)				Prepared: 07/19/2006 15:25 Analyzed: 07/20/2006 04:49						
Nitrate as N	0.008 U	0.050	mg/L							
Chloride	0.91 I	1.00	mg/L							
LCS (6G19021-BS1)				Prepared: 07/19/2006 15:25 Analyzed: 07/20/2006 05:08						
Nitrate as N	4.85	0.050	mg/L	5.00		97	90-110		200	
Chloride	265	1.00	mg/L	250		106	90-110		200	
Matrix Spike (6G19021-MS1)		Source: A603103-01		Prepared: 07/19/2006 15:25 Analyzed: 07/20/2006 05:28						
Nitrate as N	5.82	0.050	mg/L	5.10	0.479	105	40-152		23	
Chloride	304	1.00	mg/L	255	45.6	101	51-149		26	
Matrix Spike Dup (6G19021-MSD1)		Source: A603103-01		Prepared: 07/19/2006 15:25 Analyzed: 07/20/2006 05:48						
Nitrate as N	5.01	0.050	mg/L	5.10	0.479	89	40-152	15	23	
Chloride	287	1.00	mg/L	255	45.6	95	51-149	6	26	
Batch 6G28010 - NO PREP										
Blank (6G28010-BLK1)				Prepared: 07/28/2006 10:17 Analyzed: 07/28/2006 12:55						
Ammonia as N	0.003 U	0.02	mg/L							
LCS (6G28010-BS1)				Prepared: 07/28/2006 10:17 Analyzed: 07/28/2006 12:42						
Ammonia as N	0.939	0.02	mg/L	1.00		94	90-110		200	
Matrix Spike (6G28010-MS1)		Source: A603087-01		Prepared: 07/28/2006 10:17 Analyzed: 07/28/2006 12:44						
Ammonia as N	0.935	0.02	mg/L	1.00	0.003 U	94	90-110		10	
Matrix Spike Dup (6G28010-MSD1)		Source: A603087-01		Prepared: 07/28/2006 10:17 Analyzed: 07/28/2006 12:46						
Ammonia as N	0.922	0.02	mg/L	1.00	0.003 U	92	90-110	1	10	

Special Notes

[1] D = Data reported from a dilution

[2] I = Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

[3] U = Analyte included in the analysis, but not detected

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

1015 Passport Way
Cary, NC 27513
(919) 677-1669 Fax (919) 677-9846

Client Name: Jones, Edmunds & Assoc.	Project Number: 03860-022-01
Address: 730 NE Waldo Rd	Project Name/Desc: Citrus Co. LF
City/ST/Zip: Gainesville, FL 32641	PO # / Billing Info:
Tel: (352)377-5821 Fax:	Reporting Contact: K. Weitz
Sampler(s) Name, Affiliation (Print): DAN Lichtenwalter / JEA	Billing Contact:
Sampler(s) Signature: Dan Lichtwalt	Facility # (if required): Assessment

Requested Analyses

See Attached!

Field Filtered 1.0 um

Preservation (See Codes) (Combine as necessary)

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

___ Standard

___ Expedited

Due __/__/__

Lab Workorder: A603504

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	Preservation	Sample Comments
	06S2CC-13	7/18/06	0840	G	GW	8	✓	
	-11		1008			8		
	-10		1416			9	✓ ✓	
	-12		1540			8		
	TB#2			—	—	2	✓	Trip Blank 2

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time	Received By: Dan Lichtwalt	Date/Time: 7/14/06 1330
Comments: Shipped Greyhound from Gainesville to Orlando		Relinquished By: Dan Lichtwalt	Date/Time: 7/18/06 1810	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time: 1035
		Cooler #'s & Temps on Receipt: STM-10, 2°		Condition Upon Receipt: ___ Acceptable ___ Unacceptable	

Matrix : **GW**-Groundwater **SO**-Soil **SE**-Sediment **SW**-Surface Water **WW**-Wastewater **A**-Air **O**-Other (detail in comments)

Preservation: **I**-Ice **H**-HCl **N**-HNO3 **S**-H2SO4 **NO**-NaOH **O**-Other (detail in comments)

Environmental Conservation Laboratories, Inc.
10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

www.encolabs.com

Monday, July 31, 2006

Jones Edmunds & Associates, Inc. (JO006)

Attn: Lynne McDaniel

730 N.E.Waldo Road Bldg.A

Gainesville, FL 32641

RE: Project Number: 03860-022-01, Project Name/Desc: Citrus Co. LF
ENCO Workorder: A603300

Dear Lynne McDaniel,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, July 18, 2006.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

This data has been produced in accordance with NELAC standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

David M. Camacho

David Camacho
Project Manager

Enclosure(s)

LAB #		A603300-01	A603300-02	A603300-03	A603300-04	A603300-05	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	-
SAMPLE ID	Reporting Limit	06S2CC::17	06S2CC::EQ1	06S2CC::15	06S2CC::14	TB#1	-

Volatile Organic Compounds by GCMS (Water)

1,1,1,2-Tetrachloroethane	1 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
1,1,1-Trichloroethane	1 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
1,1,2,2-Tetrachloroethane	0.2 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
1,1,2-Trichloroethane	1 ug/L	<0.4 [7]	<0.4 [7]	<0.4 [7]	<0.4 [7]	<0.4 [7]	-
1,1-Dichloroethane	1 ug/L	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	-
1,1-Dichloroethene	1 ug/L	<0.8 [7]	<0.8 [7]	<0.8 [7]	<0.8 [7]	<0.8 [7]	-
1,2,3-Trichloropropane	1 ug/L	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	-
1,2-Dichlorobenzene	1 ug/L	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	-
1,2-Dichloroethane	1 ug/L	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	-
1,2-Dichloropropane	1 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
1,4-Dichlorobenzene	1 ug/L	1	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
2-Butanone	5 ug/L	<1 [7]	<1 [7]	<1 [7]	<1 [7]	<1 [7]	-
2-Hexanone	5 ug/L	<2 [7]	<2 [7]	<2 [7]	<2 [7]	<2 [7]	-
4-Methyl-2-pentanone	5 ug/L	<2 [7]	<2 [7]	<2 [7]	<2 [7]	<2 [7]	-
Acetone	5 ug/L	<3 [7]	<3 [7]	<3 [7]	<3 [7]	<3 [7]	-
Acrylonitrile	2 ug/L	<2 [7]	<2 [7]	<2 [7]	<2 [7]	<2 [7]	-
Benzene	1 ug/L	<0.1 [7]	<0.1 [7]	0.6 [3]	<0.1 [7]	<0.1 [7]	-
Bromochloromethane	1 ug/L	<0.9 [7]	<0.9 [7]	<0.9 [7]	<0.9 [7]	<0.9 [7]	-
Bromodichloromethane	0.4 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
Bromoform	1 ug/L	<0.5 [7]	<0.5 [7]	<0.5 [7]	<0.5 [7]	<0.5 [7]	-
Bromomethane	1 ug/L	<1 [7]	<1 [7]	<1 [7]	<1 [7]	<1 [7]	-
Carbon disulfide	5 ug/L	<0.4 [7]	<0.4 [7]	<0.4 [7]	<0.4 [7]	<0.4 [7]	-
Carbon tetrachloride	1 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
Chlorobenzene	1 ug/L	<0.1 [7]	<0.1 [7]	<0.1 [7]	<0.1 [7]	<0.1 [7]	-
Chloroethane	1 ug/L	<0.5 [7]	<0.5 [7]	<0.5 [7]	<0.5 [7]	<0.5 [7]	-
Chloroform	1 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
Chloromethane	1 ug/L	<0.6 [7]	<0.6 [7]	<0.6 [7]	<0.6 [7]	<0.6 [7]	-
cis-1,2-Dichloroethene	1 ug/L	<0.3 [7]	<0.3 [7]	5	<0.3 [7]	<0.3 [7]	-
cis-1,3-Dichloropropene	0.2 ug/L	<0.1 [7]	<0.1 [7]	<0.1 [7]	<0.1 [7]	<0.1 [7]	-
Dibromochloromethane	0.2 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
Dibromomethane	1 ug/L	<0.4 [7]	<0.4 [7]	<0.4 [7]	<0.4 [7]	<0.4 [7]	-
Ethylbenzene	1 ug/L	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	<0.3 [7]	-
Iodomethane	3 ug/L	<1 [7]	<1 [7]	<1 [7]	<1 [7]	<1 [7]	-
m,p-Xylenes	2 ug/L	0.7 [3]	<0.3 [7]	0.8 [3]	<0.3 [7]	<0.3 [7]	-
Methylene chloride	2 ug/L	5 [1] [4]	<1 [7]	<1 [7]	<1 [7]	<1 [7]	-
o-Xylene	1 ug/L	<0.6 [7]	<0.6 [7]	<0.6 [7]	<0.6 [7]	<0.6 [7]	-
Styrene	1 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
Tetrachloroethene	1 ug/L	<0.6 [7]	<0.6 [7]	<0.6 [7]	<0.6 [7]	<0.6 [7]	-
Toluene	1 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
trans-1,2-Dichloroethene	1 ug/L	<0.8 [7]	<0.8 [7]	<0.8 [7]	<0.8 [7]	<0.8 [7]	-
trans-1,3-Dichloropropene	0.2 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
trans-1,4-Dichloro-2-butene	1 ug/L	<0.5 [7]	<0.5 [7]	<0.5 [7]	<0.5 [7]	<0.5 [7]	-
Trichloroethene	1 ug/L	<0.3 [7]	<0.3 [7]	2	<0.3 [7]	<0.3 [7]	-
Trichlorofluoromethane	1 ug/L	<0.7 [7]	<0.7 [7]	<0.7 [7]	<0.7 [7]	<0.7 [7]	-
Vinyl acetate	1 ug/L	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	<0.2 [7]	-
Vinyl chloride	1 ug/L	<0.5 [7]	<0.5 [7]	1	<0.5 [7]	<0.5 [7]	-

LAB #		A603300-01	A603300-02	A603300-03	A603300-04	A603300-05	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	-
SAMPLE ID	Reporting Limit	06S2CC::17	06S2CC::EQ1	06S2CC::15	06S2CC::14	TB#1	-
Volatile Organic Compounds by GCMS (continued)							
Toluene-d8	132 [surr]	101%	107%	107%	109%	107%	-
4-Bromofluorobenzene	135 [surr]	87%	94%	94%	96%	90%	-
Dibromofluoromethane	149 [surr]	88%	94%	98%	97%	93%	-
Semivolatile Organic Compounds by GCMS SIM (Water)							
Benzo(a)anthracene	0.10 ug/L	<0.04 [7]	<0.04 [7]	<0.04 [7]	<0.04 [7]	-	-
Benzo(b)fluoranthene	0.10 ug/L	<0.05 [7]	<0.05 [7]	<0.05 [7]	<0.05 [7]	-	-
Benzo(k)fluoranthene	0.10 ug/L	<0.06 [7]	<0.06 [7]	<0.06 [7]	<0.06 [7]	-	-
Benzo(g,h,i)perylene	0.10 ug/L	<0.07 [7]	<0.07 [7]	<0.07 [7]	<0.07 [7]	-	-
1-Methylnaphthalene	0.10 ug/L	<0.04 [7]	<0.04 [7]	<0.04 [7]	<0.04 [7]	-	-
Benzo(a)pyrene	0.10 ug/L	<0.03 [7]	<0.03 [7]	<0.03 [7]	<0.03 [7]	-	-
Dibenzo(a,h)anthracene	0.10 ug/L	<0.05 [7]	<0.05 [7]	<0.05 [7]	<0.05 [7]	-	-
Indeno(1,2,3-cd)pyrene	0.10 ug/L	<0.03 [7]	<0.03 [7]	<0.03 [7]	<0.03 [7]	-	-
2-Methylnaphthalene	0.10 ug/L	<0.05 [7]	<0.05 [7]	<0.05 [7]	<0.05 [7]	-	-
p-Terphenyl	148 [surr]	86%	71%	98%	111%	-	-
Acenaphthene	0.10 ug/L	<0.04 [7]	<0.04 [7]	<0.04 [7]	<0.04 [7]	-	-
Acenaphthylene	0.10 ug/L	<0.04 [7]	<0.04 [7]	<0.04 [7]	<0.04 [7]	-	-
Anthracene	0.10 ug/L	<0.04 [7]	<0.04 [7]	<0.04 [7]	<0.04 [7]	-	-
Chrysene	0.10 ug/L	<0.04 [7]	<0.04 [7]	<0.04 [7]	<0.04 [7]	-	-
Fluoranthene	0.10 ug/L	<0.03 [7]	<0.03 [7]	<0.03 [7]	<0.03 [7]	-	-
Fluorene	0.10 ug/L	<0.03 [7]	<0.03 [7]	<0.03 [7]	<0.03 [7]	-	-
Naphthalene	0.10 ug/L	<0.09 [7]	<0.09 [7]	<0.09 [7]	<0.09 [7]	-	-
Phenanthrene	0.10 ug/L	<0.03 [7]	<0.03 [7]	<0.03 [7]	<0.03 [7]	-	-
Pyrene	0.10 ug/L	<0.03 [7]	<0.03 [7]	<0.03 [7]	<0.03 [7]	-	-
Semivolatile Organic Compounds by GC (Water)							
1,2-Dibromoethane	0.02 ug/L	<0.01 [7]	<0.01 [7]	<0.01 [7]	<0.01 [7]	-	-
1,2-Dibromo-3-chloropropane	0.02 ug/L	<0.009 [7]	<0.009 [7]	<0.009 [7]	<0.009 [7]	-	-
1,3-Dichlorobenzene	140 [surr]	108%	4160% [6]	472% [6]	228% [6]	-	-
Metals by EPA 6000/7000 Series Methods (Water)							
Antimony	0.2 ug/L	<2 [2] [7]	<2 [2] [7]	<2 [2] [7]	<2 [2] [7]	-	-
Arsenic	1 ug/L	<2 [2] [7]	<2 [2] [7]	<2 [2] [7]	<2 [2] [7]	-	-
Barium	1 ug/L	<12 [2] [7]	<12 [2] [7]	<12 [2] [7]	<12 [2] [7]	-	-
Beryllium	0.2 ug/L	<2 [2] [7]	<2 [2] [7]	<2 [2] [7]	<2 [2] [7]	-	-
Cadmium	0.2 ug/L	<2 [2] [7]	<2 [2] [7]	<2 [2] [7]	<2 [2] [7]	-	-
Chromium	1 ug/L	<6 [2] [7]	<6 [2] [7]	<6 [2] [7]	<6 [2] [7]	-	-
Cobalt	1 ug/L	<0.4 [2] [7]	<0.4 [2] [7]	<0.4 [2] [7]	<0.4 [2] [7]	-	-
Copper	0.3 ug/L	<3 [2] [7]	<3 [2] [7]	<3 [2] [7]	<3 [2] [7]	-	-
Iron	10 ug/L	6080 [2]	<54 [2] [7]	1350 [2]	137 [2]	-	-
Lead	1 ug/L	<3 [2] [7]	<3 [2] [7]	<3 [2] [7]	<3 [2] [7]	-	-
Mercury	0.20 ug/L	<0.11 [7]	<0.11 [7]	<0.11 [7]	<0.11 [7]	-	-
Nickel	1 ug/L	<3 [2] [7]	<3 [2] [7]	<3 [2] [7]	<3 [2] [7]	-	-
Selenium	1 ug/L	<2 [2] [7]	<2 [2] [7]	8 [2] [3]	<2 [2] [7]	-	-
Silver	0.05 ug/L	0.4 [1] [2] [3]	0.4 [1] [2] [3]	0.4 [1] [2] [3]	0.4 [1] [2] [3]	-	-
Sodium	0.100 mg/L	3.68 [2]	<0.190 [2] [7]	1.46 [2]	2.15 [2]	-	-
Thallium	0.1 ug/L	<0.2 [2] [7]	<0.2 [2] [7]	<0.2 [2] [7]	<0.2 [2] [7]	-	-

LAB #		A603300-01	A603300-02	A603300-03	A603300-04	A603300-05	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	-
SAMPLE ID	Reporting Limit	06S2CC::17	06S2CC::EQ1	06S2CC::15	06S2CC::14	TB#1	-
Metals by EPA 6000/7000 Series Methods (continued)							
Vanadium	1 ug/L	<3 [2] [7]	<3 [2] [7]	<3 [2] [7]	<3 [2] [7]	-	-
Zinc	10 ug/L	<100 [2] [7]	<100 [2] [7]	<100 [2] [7]	<100 [2] [7]	-	-
Classical Chemistry Parameters (Water)							
Ammonia as N	0.02 mg/L	<0.003 [7]	<0.003 [7]	<0.003 [7]	<0.003 [7]	-	-
Chloride	1.00 mg/L	4.33	0.95 [3]	4.47	4.59	-	-
Nitrate as N	0.050 mg/L	0.248	<0.008 [7]	0.232	0.321	-	-
Total Dissolved Solids	10 mg/L	40	<10 [7]	82	336	-	-
Field Parameters (Water)							
Specific Conductance (EC)	0 umhos/cm	68	-	48	519	-	-
Dissolved Oxygen	0.00 mg/L	1.18	-	1.22	0.78	-	-
pH	0.00 pH Units	4.96	-	4.78	6.79	-	-
Oxidation/Reduction Potential	mV	164.0	-	247.9	10.00	-	-
Temperature	0.00 °C	26.04	-	25.30	25.51	-	-
Turbidity	0.00 NTU	4.23	-	4.37	1.69	-	-

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Volatile Organic Compounds by GCMS - Quality Control										
Batch 6G25013 - EPA 5030B_MS										
Blank (6G25013-BLK1)				Prepared: 07/25/2006 13:03 Analyzed: 07/25/2006 15:04						
1,1,1,2-Tetrachloroethane	0.2 U	1	ug/L							
1,1,1-Trichloroethane	0.2 U	1	ug/L							
1,1,2,2-Tetrachloroethane	0.2 U	0.2	ug/L							
1,1,2-Trichloroethane	0.4 U	1	ug/L							
1,1-Dichloroethane	0.3 U	1	ug/L							
1,1-Dichloroethene	0.8 U	1	ug/L							
1,2,3-Trichloropropane	0.3 U	1	ug/L							
1,2-Dichlorobenzene	0.3 U	1	ug/L							
1,2-Dichloroethane	0.3 U	1	ug/L							
1,2-Dichloropropane	0.2 U	1	ug/L							
1,4-Dichlorobenzene	0.2 U	1	ug/L							
2-Butanone	1 U	5	ug/L							
2-Hexanone	2 U	5	ug/L							
4-Methyl-2-pentanone	2 U	5	ug/L							
Acetone	3 U	5	ug/L							
Acrylonitrile	2 U	2	ug/L							
Benzene	0.1 U	1	ug/L							
Bromochloromethane	0.9 U	1	ug/L							
Bromodichloromethane	0.2 U	0.4	ug/L							
Bromoform	0.5 U	1	ug/L							
Bromomethane	1 U	1	ug/L							
Carbon disulfide	0.4 U	5	ug/L							
Carbon tetrachloride	0.2 U	1	ug/L							
Chlorobenzene	0.1 U	1	ug/L							
Chloroethane	0.5 U	1	ug/L							
Chloroform	0.2 U	1	ug/L							
Chloromethane	0.6 U	1	ug/L							
cis-1,2-Dichloroethene	0.3 U	1	ug/L							
cis-1,3-Dichloropropene	0.1 U	0.2	ug/L							
Dibromochloromethane	0.2 U	0.2	ug/L							
Dibromomethane	0.4 U	1	ug/L							
Ethylbenzene	0.3 U	1	ug/L							
Iodomethane	1 U	3	ug/L							
m,p-Xylenes	0.6 I	2	ug/L							
Methylene chloride	5 O-01	2	ug/L							O-01
o-Xylene	0.6 U	1	ug/L							
Styrene	0.2 U	1	ug/L							
Tetrachloroethene	0.6 U	1	ug/L							
Toluene	0.2 U	1	ug/L							
trans-1,2-Dichloroethene	0.8 U	1	ug/L							
trans-1,3-Dichloropropene	0.2 U	0.2	ug/L							
trans-1,4-Dichloro-2-butene	0.5 U	1	ug/L							
Trichloroethene	0.3 U	1	ug/L							
Trichlorofluoromethane	0.7 U	1	ug/L							
Vinyl acetate	0.2 U	1	ug/L							
Vinyl chloride	0.5 U	1	ug/L							

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Volatile Organic Compounds by GCMS - Quality Control										
Batch 6G25013 - EPA 5030B_MS										
Blank (6G25013-BLK1) Continued				Prepared: 07/25/2006 13:03 Analyzed: 07/25/2006 15:04						
Surrogate: Toluene-d8	*54.1*		*ug/L*	*50.0*		*108*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*48.3*		*ug/L*	*50.0*		*97*	*60-135*			
Surrogate: Dibromofluoromethane	*47.0*		*ug/L*	*50.0*		*94*	*52-149*			
LCS (6G25013-BS1)				Prepared: 07/25/2006 13:03 Analyzed: 07/25/2006 14:35						
1,1-Dichloroethene	22.6	1	ug/L	20.0		113	49-156		200	
Benzene	22.8	1	ug/L	20.0		114	64-132		200	
Chlorobenzene	20.7	1	ug/L	20.0		104	68-135		200	
Toluene	21.7	1	ug/L	20.0		108	58-132		200	
Trichloroethene	21.5	1	ug/L	20.0		108	66-130		200	
Surrogate: Toluene-d8	*53.6*		*ug/L*	*50.0*		*107*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*47.6*		*ug/L*	*50.0*		*95*	*60-135*			
Surrogate: Dibromofluoromethane	*44.6*		*ug/L*	*50.0*		*89*	*52-149*			
Matrix Spike (6G25013-MS1)		**Source: A603300-01**		Prepared: 07/25/2006 13:03 Analyzed: 07/25/2006 15:33						
1,1-Dichloroethene	20.3	1	ug/L	20.0	0.8 U	102	36-185		34	
Benzene	21.4	1	ug/L	20.0	0.1 U	107	65-143		25	
Chlorobenzene	18.9	1	ug/L	20.0	0.1 U	94	64-140		23	
Toluene	19.8	1	ug/L	20.0	0.2 U	99	62-144		24	
Trichloroethene	19.1	1	ug/L	20.0	0.3 U	96	51-152		28	
Surrogate: Toluene-d8	*51.2*		*ug/L*	*50.0*		*102*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*45.3*		*ug/L*	*50.0*		*91*	*60-135*			
Surrogate: Dibromofluoromethane	*44.7*		*ug/L*	*50.0*		*89*	*52-149*			
Matrix Spike Dup (6G25013-MSD1)		**Source: A603300-01**		Prepared: 07/25/2006 13:03 Analyzed: 07/25/2006 16:02						
1,1-Dichloroethene	21.8	1	ug/L	20.0	0.8 U	109	36-185	7	34	
Benzene	21.6	1	ug/L	20.0	0.1 U	108	65-143	0.9	25	
Chlorobenzene	19.8	1	ug/L	20.0	0.1 U	99	64-140	5	23	
Toluene	20.6	1	ug/L	20.0	0.2 U	103	62-144	4	24	
Trichloroethene	19.2	1	ug/L	20.0	0.3 U	96	51-152	0.5	28	
Surrogate: Toluene-d8	*50.3*		*ug/L*	*50.0*		*101*	*70-132*			
Surrogate: 4-Bromofluorobenzene	*45.6*		*ug/L*	*50.0*		*91*	*60-135*			
Surrogate: Dibromofluoromethane	*44.2*		*ug/L*	*50.0*		*88*	*52-149*			
Semivolatile Organic Compounds by GCMS SIM - Quality Control										
Batch 6G23001 - EPA 3510C_MS										
Blank (6G23001-BLK1)				Prepared: 07/23/2006 09:16 Analyzed: 07/25/2006 10:25						
Benzo(a)anthracene	0.04 U	0.10	ug/L							
Benzo(b)fluoranthene	0.05 U	0.10	ug/L							
Benzo(k)fluoranthene	0.06 U	0.10	ug/L							
Benzo(g,h,i)perylene	0.07 U	0.10	ug/L							
1-Methylnaphthalene	0.04 U	0.10	ug/L							
Benzo(a)pyrene	0.03 U	0.10	ug/L							
Dibenzo(a,h)anthracene	0.05 U	0.10	ug/L							
Indeno(1,2,3-cd)pyrene	0.03 U	0.10	ug/L							
2-Methylnaphthalene	0.05 U	0.10	ug/L							
Acenaphthene	0.04 U	0.10	ug/L							
Acenaphthylene	0.04 U	0.10	ug/L							
Anthracene	0.04 U	0.10	ug/L							
Chrysene	0.04 U	0.10	ug/L							

QUALITY CONTROL

Analyte	Result		MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Semivolatile Organic Compounds by GCMS SIM - Quality Control											
Batch 6G23001 - EPA 3510C_MS											
Blank (6G23001-BLK1) Continued					Prepared: 07/23/2006 09:16 Analyzed: 07/25/2006 10:25						
Fluoranthene	0.03	U	0.10	ug/L							
Fluorene	0.03	U	0.10	ug/L							
Naphthalene	0.09	U	0.10	ug/L							
Phenanthrene	0.03	U	0.10	ug/L							
Pyrene	0.03	U	0.10	ug/L							
Surrogate: p-Terphenyl	*4.51*			*ug/L*	*5.00*		*90*	*39-148*			
LCS (6G23001-BS1)					Prepared: 07/23/2006 09:16 Analyzed: 07/25/2006 10:42						
Benzo(g,h,i)perylene	1.13		0.10	ug/L	2.00		56	23-146		200	
Benzo(a)pyrene	1.91		0.10	ug/L	2.00		96	57-126		200	
Acenaphthene	1.94		0.10	ug/L	2.00		97	48-119		200	
Naphthalene	2.02		0.10	ug/L	2.00		101	38-138		200	
Surrogate: p-Terphenyl	*4.48*			*ug/L*	*5.00*		*90*	*39-148*			
Matrix Spike (6G23001-MS1)	**Source: A603576-01**				Prepared: 07/23/2006 09:16 Analyzed: 07/25/2006 10:58						
Benzo(g,h,i)perylene	1.19		0.10	ug/L	2.00	0.07 U	60	52-155		32	
Benzo(a)pyrene	1.53		0.10	ug/L	2.00	0.03 U	76	41-157		30	
Acenaphthene	1.69		0.10	ug/L	2.00	0.04 U	84	20-150		27	
Naphthalene	1.78		0.10	ug/L	2.00	0.09 U	89	30-112		33	
Surrogate: p-Terphenyl	*3.72*			*ug/L*	*5.00*		*74*	*39-148*			
Matrix Spike Dup (6G23001-MSD1)	**Source: A603576-01**				Prepared: 07/23/2006 09:16 Analyzed: 07/25/2006 11:15						
Benzo(g,h,i)perylene	1.27		0.10	ug/L	2.00	0.07 U	64	52-155	7	32	
Benzo(a)pyrene	1.63		0.10	ug/L	2.00	0.03 U	82	41-157	6	30	
Acenaphthene	1.81		0.10	ug/L	2.00	0.04 U	90	20-150	7	27	
Naphthalene	1.89		0.10	ug/L	2.00	0.09 U	94	30-112	6	33	
Surrogate: p-Terphenyl	*3.98*			*ug/L*	*5.00*		*80*	*39-148*			
Semivolatile Organic Compounds by GC - Quality Control											
Batch 6G27019 - EPA 504/8011											
Blank (6G27019-BLK1)					Prepared: 07/27/2006 00:00 Analyzed: 07/28/2006 15:36						
1,2-Dibromoethane	0.01	U	0.02	ug/L							
1,2-Dibromo-3-chloropropane	0.009	U	0.02	ug/L							
LCS (6G27019-BS1)					Prepared: 07/27/2006 00:00 Analyzed: 07/28/2006 15:47						
1,2-Dibromoethane	0.284		0.02	ug/L	0.250		114	60-140		200	
1,2-Dibromo-3-chloropropane	0.318		0.02	ug/L	0.250		127	60-140		200	
Matrix Spike (6G27019-MS1)	**Source: A603225-02**				Prepared: 07/27/2006 00:00 Analyzed: 07/28/2006 15:57						
1,2-Dibromoethane	0.315	QM-07	0.02	ug/L	0.250	0.01 U	126	65-135		18	QM-07
1,2-Dibromo-3-chloropropane	0.409	QM-07	0.02	ug/L	0.250	0.009 U	164	65-135		20	QM-07
Matrix Spike Dup (6G27019-MSD1)	**Source: A603225-02**				Prepared: 07/27/2006 00:00 Analyzed: 07/28/2006 16:08						
1,2-Dibromoethane	0.264	QM-07	0.02	ug/L	0.250	0.01 U	106	65-135	18	18	QM-07
1,2-Dibromo-3-chloropropane	0.329	QM-07	0.02	ug/L	0.250	0.009 U	132	65-135	22	20	QM-07
Metals by EPA 6000/7000 Series Methods - Quality Control											
Batch 6G18006 - EPA 3005A											
Blank (6G18006-BLK1)					Prepared: 07/18/2006 11:26 Analyzed: 07/19/2006 22:33						
Antimony	0.2	U	0.2	ug/L							
Arsenic	0.2	U	1	ug/L							
Barium	1	U	1	ug/L							

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G18006 - EPA 3005A										
Blank (6G18006-BLK1) Continued				Prepared: 07/18/2006 11:26 Analyzed: 07/19/2006 22:33						
Beryllium	0.2 U	0.2	ug/L							
Cadmium	0.2 U	0.2	ug/L							
Chromium	0.6 U	1	ug/L							
Cobalt	0.04 U	1	ug/L							
Copper	0.3 U	0.3	ug/L							
Iron	5 U	10	ug/L							
Lead	0.3 U	1	ug/L							
Nickel	0.3 U	1	ug/L							
Selenium	0.2 U	1	ug/L							
Silver	0.05	0.05	ug/L							
Sodium	0.019 U	0.100	mg/L							
Thallium	0.02 U	0.1	ug/L							
Vanadium	0.3 U	1	ug/L							
Zinc	10 U	10	ug/L							
Blank (6G18006-BLK2)				Prepared: 07/19/2006 10:24 Analyzed: 07/20/2006 02:53						
Antimony	0.2 U	0.2	ug/L							
Arsenic	0.2 U	1	ug/L							
Barium	1 U	1	ug/L							
Beryllium	0.2 U	0.2	ug/L							
Cadmium	0.2 U	0.2	ug/L							
Chromium	0.6 U	1	ug/L							
Cobalt	0.04 U	1	ug/L							
Copper	0.3 U	0.3	ug/L							
Iron	5 U	10	ug/L							
Lead	0.3 U	1	ug/L							
Nickel	0.3 U	1	ug/L							
Selenium	0.2 U	1	ug/L							
Silver	0.04 I	0.05	ug/L							
Sodium	0.019 U	0.100	mg/L							
Thallium	0.02 U	0.1	ug/L							
Vanadium	0.3 U	1	ug/L							
Zinc	10 U	10	ug/L							
LCS (6G18006-BS1)				Prepared: 07/18/2006 11:26 Analyzed: 07/19/2006 22:39						
Antimony	49.7	0.2	ug/L	50.0		99	85-115		200	
Arsenic	48.6	1	ug/L	50.0		97	85-115		200	
Barium	49.5	1	ug/L	50.0		99	85-115		200	
Beryllium	49.0	0.2	ug/L	50.0		98	85-115		200	
Cadmium	49.2	0.2	ug/L	50.0		98	85-115		200	
Chromium	48.1	1	ug/L	50.0		96	85-115		200	
Cobalt	52.4	1	ug/L	50.0		105	85-115		200	
Copper	52.4	0.3	ug/L	50.0		105	85-115		200	
Iron	45.9	10	ug/L	50.0		92	85-115		200	
Lead	48.3	1	ug/L	50.0		97	85-115		200	
Nickel	51.6	1	ug/L	50.0		103	85-115		200	
Selenium	47.7	1	ug/L	50.0		95	85-115		200	
Silver	5.15 B	0.05	ug/L	5.00		103	85-115		200	B
Sodium	0.466	0.100	mg/L	0.500		93	85-115		200	
Thallium	50.3	0.1	ug/L	50.0		101	85-115		200	
Vanadium	52.0	1	ug/L	50.0		104	85-115		200	

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G18006 - EPA 3005A										
LCS (6G18006-BS1) Continued				Prepared: 07/18/2006 11:26 Analyzed: 07/19/2006 22:39						
Zinc	49.2	10	ug/L	50.0		98	85-115		200	
LCS (6G18006-BS2)				Prepared: 07/19/2006 10:24 Analyzed: 07/20/2006 02:58						
Antimony	49.9	0.2	ug/L	50.0		100	85-115		200	
Arsenic	47.9	1	ug/L	50.0		96	85-115		200	
Barium	49.5	1	ug/L	50.0		99	85-115		200	
Beryllium	51.4	0.2	ug/L	50.0		103	85-115		200	
Cadmium	49.3	0.2	ug/L	50.0		99	85-115		200	
Chromium	48.3	1	ug/L	50.0		97	85-115		200	
Cobalt	50.8	1	ug/L	50.0		102	85-115		200	
Copper	50.7	0.3	ug/L	50.0		101	85-115		200	
Iron	47.1	10	ug/L	50.0		94	85-115		200	
Lead	49.6	1	ug/L	50.0		99	85-115		200	
Nickel	50.3	1	ug/L	50.0		101	85-115		200	
Selenium	47.5	1	ug/L	50.0		95	85-115		200	
Silver	5.15 B	0.05	ug/L	5.00		103	85-115		200	B
Sodium	0.490	0.100	mg/L	0.500		98	85-115		200	
Thallium	51.5	0.1	ug/L	50.0		103	85-115		200	
Vanadium	51.1	1	ug/L	50.0		102	85-115		200	
Zinc	48.6	10	ug/L	50.0		97	85-115		200	
Matrix Spike (6G18006-MS1)		**Source: A603089-07**		Prepared: 07/18/2006 11:26 Analyzed: 07/19/2006 23:16						
Antimony	501 D	2	ug/L	500	2 U	100	70-130		20	D
Arsenic	502 D	10	ug/L	500	2 U	100	70-130		20	D
Barium	495 D	12	ug/L	500	12 U	99	70-130		20	D
Beryllium	497 D	2	ug/L	500	2 U	99	70-130		20	D
Cadmium	491 D	2	ug/L	500	2 U	98	70-130		20	D
Chromium	489 D	10	ug/L	500	6 U	98	70-130		20	D
Cobalt	519 D	10	ug/L	500	0.4 U	104	70-130		20	D
Copper	532 D	3	ug/L	500	3 U	106	70-130		20	D
Iron	475 D	100	ug/L	500	54 U	95	70-130		20	D
Lead	493 D	10	ug/L	500	3 U	99	70-130		20	D
Nickel	515 D	10	ug/L	500	3 U	103	70-130		20	D
Selenium	476 D	10	ug/L	500	2 U	95	70-130		20	D
Silver	51.1 D, B	0.5	ug/L	50.0	0.499	101	70-130		20	D B
Sodium	4.93 D	1.00	mg/L	5.00	0.190 U	99	70-130		20	D
Thallium	510 D	1	ug/L	500	0.2 U	102	70-130		20	D
Vanadium	517 D	10	ug/L	500	3 U	103	70-130		20	D
Zinc	498 D	100	ug/L	500	100 U	100	70-130		20	D
Matrix Spike Dup (6G18006-MSD1)		**Source: A603089-07**		Prepared: 07/18/2006 11:26 Analyzed: 07/19/2006 23:26						
Antimony	513 D	2	ug/L	500	2 U	103	70-130	2	20	D
Arsenic	500 D	10	ug/L	500	2 U	100	70-130	0.4	20	D
Barium	507 D	12	ug/L	500	12 U	101	70-130	2	20	D
Beryllium	512 D	2	ug/L	500	2 U	102	70-130	3	20	D
Cadmium	497 D	2	ug/L	500	2 U	99	70-130	1	20	D
Chromium	489 D	10	ug/L	500	6 U	98	70-130	0	20	D
Cobalt	521 D	10	ug/L	500	0.4 U	104	70-130	0.4	20	D
Copper	531 D	3	ug/L	500	3 U	106	70-130	0.2	20	D
Iron	474 D	100	ug/L	500	54 U	95	70-130	0.2	20	D
Lead	497 D	10	ug/L	500	3 U	99	70-130	0.8	20	D
Nickel	522 D	10	ug/L	500	3 U	104	70-130	1	20	D

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G18006 - EPA 3005A										
Matrix Spike Dup (6G18006-MSD1) Continued		**Source: A603089-07**		Prepared: 07/18/2006 11:26 Analyzed: 07/20/2006 19:21						
Selenium	495 D	10	ug/L	500	2 U	99	70-130	4	20	D
Silver	51.2 D, B	0.5	ug/L	50.0	0.499	101	70-130	0.2	20	D B
Sodium	4.76 D	1.00	mg/L	5.00	0.190 U	95	70-130	4	20	D
Thallium	513 D	1	ug/L	500	0.2 U	103	70-130	0.6	20	D
Vanadium	524 D	10	ug/L	500	3 U	105	70-130	1	20	D
Zinc	486 D	100	ug/L	500	100 U	97	70-130	2	20	D
Post Spike (6G18006-PS1)		**Source: A603089-07**		Prepared: 07/19/2006 13:38 Analyzed: 07/20/2006 02:29						
Antimony	0.0483 D	0.0002	mg/L	0.0500	-0.00424	105	75-125		200	D
Arsenic	0.0471 D	0.001	mg/L	0.0500	-0.000116	94	75-125		200	D
Barium	0.0492 D	0.001	mg/L	0.0500	-0.00239	103	75-125		200	D
Beryllium	0.0504 D	0.0002	mg/L	0.0500	-0.000239	101	75-125		200	D
Cadmium	0.0479 D	0.0002	mg/L	0.0500	-0.00325	102	75-125		200	D
Chromium	0.0484 D	0.001	mg/L	0.0500	-0.00786	113	75-125		200	D
Cobalt	0.0508 D	0.001	mg/L	0.0500	-0.00439	110	75-125		200	D
Copper	0.0513 D	0.0003	mg/L	0.0500	-0.00408	111	75-125		200	D
Iron	0.0465 D	0.01	mg/L	0.0500	-0.00367	100	75-125		200	D
Lead	0.0480 D	0.001	mg/L	0.0500	-0.00588	108	75-125		200	D
Nickel	0.0501 D	0.001	mg/L	0.0500	-0.00423	109	75-125		200	D
Selenium	0.0455 D	0.001	mg/L	0.0500	-4.71E-5	91	75-125		200	D
Silver	0.00500 D, B	0.00005	mg/L	0.00500	4.99E-5	99	75-125		200	D B
Sodium	0.461 D	0.1	mg/L	0.500	-0.0372	100	75-125		200	D
Thallium	0.0496 D	0.0001	mg/L	0.0500	-0.00527	110	75-125		200	D
Vanadium	0.0514 D	0.001	mg/L	0.0500	-0.00487	113	75-125		200	D
Zinc	0.0495 D	0.0100	mg/L	0.0500	-0.00397	107	75-125		200	D
Post Spike (6G18006-PS2)		**Source: A603486-01**		Prepared: 07/20/2006 14:09 Analyzed: 07/20/2006 20:52						
Antimony	0.0477 D	0.0002	mg/L	0.0500	-0.00230	100	75-125		200	D
Arsenic	0.0482 D	0.001	mg/L	0.0500	-1.02E-5	96	75-125		200	D
Barium	0.0515 D	0.001	mg/L	0.0500	0.000738	102	75-125		200	D
Beryllium	0.0497 D	0.0002	mg/L	0.0500	-0.000197	100	75-125		200	D
Cadmium	0.0489 D	0.0002	mg/L	0.0500	-0.00169	101	75-125		200	D
Chromium	0.0474 D	0.001	mg/L	0.0500	-0.00598	107	75-125		200	D
Cobalt	0.0472 D	0.001	mg/L	0.0500	-0.00426	103	75-125		200	D
Copper	0.0485 D	0.0003	mg/L	0.0500	-0.00230	102	75-125		200	D
Iron	0.0593 D	0.01	mg/L	0.0500	0.000144	118	75-125		200	D
Lead	0.0477 D	0.001	mg/L	0.0500	-0.00368	103	75-125		200	D
Nickel	0.0480 D	0.001	mg/L	0.0500	-0.00160	99	75-125		200	D
Selenium	0.0491 D	0.001	mg/L	0.0500	5.70E-5	98	75-125		200	D
Silver	0.00462 D, B	0.00005	mg/L	0.00500	-0.000148	95	75-125		200	D B
Sodium	6.66 D	0.1	mg/L	0.500	6.00	132	75-125		200	D
Thallium	0.0480 D	0.0001	mg/L	0.0500	-0.00635	109	75-125		200	D
Vanadium	0.0498 D	0.001	mg/L	0.0500	-0.00372	107	75-125		200	D
Zinc	0.0482 D	0.0100	mg/L	0.0500	-0.00260	102	75-125		200	D
Batch 6G21021 - EPA 7470A										
Blank (6G21021-BLK1)				Prepared: 07/22/2006 12:38 Analyzed: 07/24/2006 10:51						
Mercury	0.11 U	0.20	ug/L							
LCS (6G21021-BS1)				Prepared: 07/22/2006 12:38 Analyzed: 07/24/2006 10:54						
Mercury	5.31	0.20	ug/L	5.00		106	93-111		200	
Matrix Spike (6G21021-MS1)		**Source: A603300-02**		Prepared: 07/22/2006 12:38 Analyzed: 07/24/2006 11:00						

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6G21021 - EPA 7470A										
Matrix Spike (6G21021-MS1) Continued		**Source: A603300-02**		Prepared: 07/22/2006 12:38 Analyzed: 07/24/2006 11:00						
Mercury	5.58	0.20	ug/L	5.00	0.11 U	112	85-115		12	
Matrix Spike Dup (6G21021-MSD1)		**Source: A603300-02**		Prepared: 07/22/2006 12:38 Analyzed: 07/24/2006 11:03						
Mercury	5.63	0.20	ug/L	5.00	0.11 U	113	85-115	0.9	12	
Classical Chemistry Parameters - Quality Control										
Batch 6G18013 - Default Prep GenChem										
Blank (6G18013-BLK1)				Prepared: 07/18/2006 18:55 Analyzed: 07/19/2006 17:45						
Total Dissolved Solids	10 U	10	mg/L							
LCS (6G18013-BS1)				Prepared: 07/18/2006 18:55 Analyzed: 07/19/2006 17:45						
Total Dissolved Solids	302	10	mg/L	300		101	86-118		200	
Duplicate (6G18013-DUP1)		**Source: A603300-04**		Prepared: 07/18/2006 18:55 Analyzed: 07/19/2006 17:45						
Total Dissolved Solids	330	10	mg/L		336			2	25	
Batch 6G18016 - Default Prep GenChem										
Blank (6G18016-BLK1)				Prepared: 07/18/2006 12:23 Analyzed: 07/18/2006 14:56						
Nitrate as N	0.008 U	0.050	mg/L							
Chloride	0.76 I	1.00	mg/L							
LCS (6G18016-BS1)				Prepared: 07/18/2006 12:23 Analyzed: 07/18/2006 15:16						
Nitrate as N	4.96	0.050	mg/L	5.00		99	90-110		200	
Chloride	270	1.00	mg/L	250		108	90-110		200	
Matrix Spike (6G18016-MS1)		**Source: A603103-01**		Prepared: 07/18/2006 12:23 Analyzed: 07/18/2006 15:36						
Nitrate as N	5.84	0.050	mg/L	5.10	0.479	105	40-152		23	
Chloride	301	1.00	mg/L	255	45.6	100	51-149		26	
Matrix Spike Dup (6G18016-MSD1)		**Source: A603103-01**		Prepared: 07/18/2006 12:23 Analyzed: 07/18/2006 15:55						
Nitrate as N	4.97	0.050	mg/L	5.10	0.479	88	40-152	16	23	
Chloride	283	1.00	mg/L	255	45.6	93	51-149	6	26	
Batch 6G27009 - NO PREP										
Blank (6G27009-BLK1)				Prepared: 07/27/2006 11:51 Analyzed: 07/27/2006 20:45						
Ammonia as N	0.003 U	0.02	mg/L							
LCS (6G27009-BS1)				Prepared: 07/27/2006 11:51 Analyzed: 07/27/2006 21:25						
Ammonia as N	0.968	0.02	mg/L	1.00		97	90-110		200	
Matrix Spike (6G27009-MS1)		**Source: A603088-01**		Prepared: 07/27/2006 11:51 Analyzed: 07/27/2006 20:49						
Ammonia as N	0.904	0.02	mg/L	1.00	0.003 U	90	90-110		10	
Matrix Spike Dup (6G27009-MSD1)		**Source: A603088-01**		Prepared: 07/27/2006 11:51 Analyzed: 07/27/2006 20:50						
Ammonia as N	0.948	0.02	mg/L	1.00	0.003 U	95	90-110	5	10	

Special Notes

[1] B = Analyte is found in the associated blank as well as in the sample (CLP B-flag).
[2] D = Data reported from a dilution
[3] I = Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
[4] O-01 = This compound is a common laboratory contaminant.
[5] QM-0 = The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
[6] S-04 = The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
[7] U = Analyte included in the analysis, but not detected

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

1015 Passport Way
Cary, NC 27513
(919) 677-1669 Fax (919) 677-9846

Client Name: Jones, Edwards + Assoc.	Project Number: 03860 - 022 - 01
Address: 730 NE Waldo Rd	Project Name/Desc: Citrus Co. LF - Assessment
City/ST/Zip: Gainesville, FL 32641	PO # / Billing Info:
Tel: (352) 377-5821 / Fax:	Reporting Contact: K. Weitz
Sampler(s) Name, Affiliation (Print): Dan Lichtenwalter / JEA	Billing Contact:
Sampler(s) Signature: Dan Lichtwalt	Facility # (if required): Assessment

Requested Analyses: See Attached!

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

___ Standard

___ Expedited

Due ___/___/___

Lab Workorder: A603300

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	Preservation (See Codes) (Combine as necessary)	Sample Comments
1	06S2CC-17	7/17/06	1313	G	GW	8	✓	
2	-EQ1		1354				✓	EQ Blank 1
3	-15		1521				✓	
4	-14		1645				✓	
5	TB #1					2	✓	Trip Blank 1

<-- Total # of Containers

Sample Kit Prepared By: LW	Date/Time: 7/11/06 1155	Relinquished By: L. Wooten	Date/Time: 7/11/06 1155	Received By: Dan Lichtwalt	Date/Time: 7/14/06 1330
Comments: Shipped Greyhound from Gainesville to Orlando.		Relinquished By: Dan Lichtwalt	Date/Time: 7/17/06 1930	Received By:	Date/Time:
		Relinquished By:	Date/Time:	Received By:	Date/Time: 7/18/06 10:12
		Cooler #'s & Temps on Receipt: JR-11 2°C		Condition Upon Receipt: ✓ Acceptable ___ Unacceptable	

Matrix : **GW**-Groundwater **SO**-Soil **SE**-Sediment **SW**-Surface Water **WW**-Wastewater **A**-Air **O**-Other (detail in comments)

Preservation: **I**-Ice **H**-HCl **N**-HNO3 **S**-H2SO4 **NO**-NaOH **O**-Other (detail in comments)