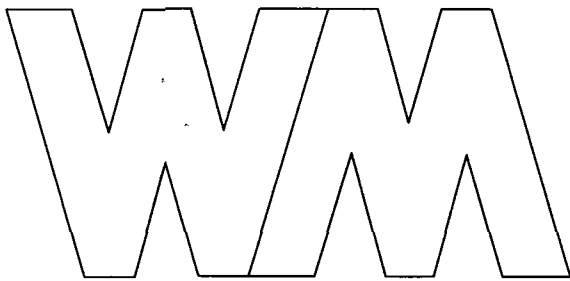


**TRAIL RIDGE LANDFILL
INCREMENTAL CLOSURE
QUALITY ASSURANCE AND
QUALITY CONTROL DOCUMENTATION
FOR
UNITS 1-4 (COMPLETE) AND 21-23**

PREPARED FOR:



**TRAIL RIDGE
LANDFILL, INC.**

AND



**CITY OF
JACKSONVILLE**

PREPARED BY:



England-Thimys & Miller, Inc.

Consulting & Design Engineers
14775 St. Augustine Road
Jacksonville, Florida 32258
Certificate of Authorization Number 2584
Phone Number (904) 642-8990

AND



LAW

ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
3901 CARMICHAEL AVENUE • JACKSONVILLE, FL 32207 • (904) 396-5173
P O BOX 5728 • JACKSONVILLE, FL 32207 • FAX (904) 396-5703

JULY 26, 2002

PROJECT NUMBER: E 00-117-04



England-Thims & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

July 26, 2002

Ms Mary C Nogas, P E
Solid Waste Section
Department of Environmental Protection
7825 Baymeadows Way, Suite B-200
Jacksonville, Florida 32256

JUL 26 2002

Principals

James E. England, P.E. CEO
Douglas C. Miller, P.E. President
N. Hugh Mathews, P.E. Exec. VP
Joseph A. Turner, Exec. VP
Juanitta Bader Clem, P.E. VP
Scott A. Wild, P.E. PSM, VP
Samuel R. Crissinger, CPA, VP
Robert A. Mizell, Jr., P.E. VP
Bryan R. Stewart, VP

Reference Trail Ridge Landfill – Incremental Closure
Side Slope Units 1-4 (Complete) and 21-23
FDEP Permit No 0013493-002-SC
ET&M Project No E00-117-04

Dear Ms Nogas

Please find herewith the Certification of Construction Completion for the Trail Ridge Landfill, Incremental Closure of Side Slope Units 1-4 (Complete) and 21-23. The Construction Quality Assurance/Quality Control documentation and As-Built Drawings are attached.

Subject to your site inspection, Trail Ridge Landfill, Inc. respectfully requests your written verification that the Department accepts this incremental closure.

This is the certification for the Trail Ridge Landfill closure construction of Side Slope Units 1-4 (complete) and 21-23, which commenced on November 12, 2001. Should you have any questions, please feel free to give me a call.

Sincerely,

ENGLAND, THIMS & MILLER, INC.

Juanitta Bader Clem, P E
Vice President

Attachments Certification of Construction Completion of a Solid Waste Management Facility
Quality Assurance and Quality Control Documentation
As-Built Drawings

cc Greg Mathes, with attachments
Chris Pearson, with attachments
Jim Horton, with attachments



Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction Permit No. 0013493-002-SC County Duval
Name of Project: Trail Ridge Landfill - Incremental Closure
Name of Owner: City of Jacksonville
Name of Engineer: England, Thims & Miller, Inc.
Type of Project: Class I Landfill - Incremental Closure
Side Slope Units 1-4 (Complete) and 21-23
Cost. Estimate \$ _____ Actual \$ 1,140,809
Site Design. Quantity 3,500 ton/day Site Acreage 4± Acres
Deviations from Plans and Application Approved by DEP. _____
Deviations are shown on the As-Built Drawing and/or outlined in the attachment.

The As-Built Survey was prepared by Robert M. Angas Associates, Inc. and
reviewed by England, Thims & Miller, Inc.

Address and Telephone No. of Site 5110 U.S. Highway 301, Baldwin, FL 32234
Phone: (904)289-9100

Name(s) of Site Supervisor: Greg Mathes
Date Site inspection is requested As soon as possible

This is to certify that, with the exception of any deviation noted above, the construction of the project has been completed in substantial accordance with the plans authorized by Construction

Permit No. 0013493-002-SC Dated: 11-25-97

England, Thims & Miller, Inc. relied upon the information and certifications provided by Law Engineering and Robert M. Angas Associates, Inc.

Date 7/26/02

[Signature]
Signature of Professional Engineer

Page 1 of 1

**TRAIL RIDGE LANDFILL
INCREMENTAL CLOSURE
UNITS 1-4 (COMPLETE) AND 21-23**

DEVIATIONS FROM PLANS AND SPECIFICATIONS

- 1 Some final grades were adjusted to accommodate settlement during closure construction Adjustments are noted on the As-Built Drawings
- 2 An alternate aggregate material in lieu of the specified FDOT No 3 coarse aggregate was used to backfill Gas Wells W-26 and W-27 As explained in the attached December 3, 2001 letter to the Department, the modification does not change the design intent of the aggregate
- 3 The side slope closure areas have been sodded but the sod has not been established Due to the field conditions at the sod farms and the field conditions at the site when the sod was placed, the sod appears stressed If the existing sod is not established, then additional measures will be taken to establish a stand of grass (either by resodding or seeding)



**EMCON/OWT Solid Waste
Services**

999 Remington Boulevard, Suite A
Bolingbrook, IL 60440
Phone (630) 771-9200
Fax (630) 771-9250

December 3, 2001
Project 829385

Ms Mary C Nogas, P E
Solid Waste Section
Department of Environmental Protection
7825 Baymeadows Way, Suite B-200
Jacksonville, FL 322565-7590

Re Trail Ridge Landfill
Landfill Gas System Expansion

Dear Ms Nogas

On behalf of Trail Ridge Landfill Inc EMCON/OWT Solid Waste Services (EMCON) respectfully requests permission to use an alternate backfill material for four (4) gas extraction wells (W-26, W-27, T-22 and T-37) for the ongoing construction of the landfill gas system expansion. The Incremental Closure Quality Assurance/Quality Control Plan and the Project Specifications require FDOT No. 3 Course Aggregate for the backfill material for the gas wells.

The gradation test result exceeds the allowable percentage of material passing a 1-inch sieve (approximately 32% actual vs 0% to 15% allowed per FDOT No. 3). However, the percentage of finer material passing a 0.5-inch sieve is well within specification requirements (approximately 3% actual vs 0% to 5% allowed).

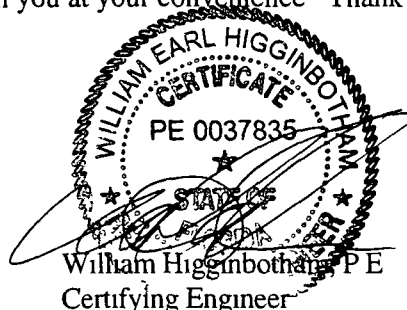
The material was utilized to backfill the perforated portion of the landfill gas extraction well casings. The purpose of the stone backfill is to allow the flow of landfill gas into the well casings, while providing an isolation or "filter" medium between the well casing and the waste mass. Considering the perforations in the well casing consist of vertical slots approximately 0.375 inches wide, the alternate material gradation should perform in a manner consistent with the FDOT No. 3 course aggregate. As the design engineer for this portion of the landfill gas extraction system, I respectfully request that this material be approved for these four (4) wells as an alternate to the FDOT No. 3 course aggregate.

Please contact my office (630-771-9213) with any questions you may have regarding this request. I would be pleased to discuss this project with you at your convenience. Thank you.

Sincerely,

EMCON

Thomas Bilgri by AD
Thomas A. Bilgri, P.E.
Manager - LFG Engineering Services



cc Greg Mathes, Trail Ridge Landfill, Inc
Juanitta Clem, England, Thims & Miller, Inc

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1. Quality Assurance / Quality Control Plan

**TRAIL RIDGE LANDFILL
INCREMENTAL SIDE SLOPE CLOSURE
QUALITY ASSURANCE/QUALITY CONTROL PLAN**

This plan addresses the quality assurance and quality control (QA/QC) for the incremental closure (close-as-you-go) of Trail Ridge Landfill. This program delineates the quality procedures and standards for the construction. This plan includes the closure of the side slopes only (including the reconstruction of final cover on side slopes). The top area will be the final closure for which a closure permit will be obtained, prior to final closure construction.

In the context of this plan, quality assurance and quality control are defined as follows:

Quality Assurance - A planned and systematic pattern of all means and actions designed to provide adequate confidence that items or services meet contractual and regulatory requirements and will perform satisfactorily in service.

Quality Control - Those actions which provide a means to measure and regulate the characteristics of an item or service to contract and regulatory requirements.

The City of Jacksonville, Florida is the owner/~~permittee~~ of Trail Ridge Landfill. Trail Ridge Landfill, Inc. is the permittee and operates the landfill. England, Thims & Miller, Inc. is the design engineer. The name of the Contractor for each incremental closure shall be provided to the Department of Environmental Protection (DEP), prior to construction.

All QA/QC activities (including monitoring, sampling and testing) shall be directed and conducted by third parties, whom are independent of the Contractor.

The QA/QC Plan for this project includes General QA/QC and Soils QA/QC. The General QA/QC includes full-time services to periodically observe the contractor's work to verify substantial compliance with permits, plans, specifications and design concepts. These services will include the following:

General Quality Control Monitor - shall monitor the construction for compliance with the permits, plans, specifications and design including construction to proper lines and grades, maintain daily logs and weekly progress reports of the construction (including observation data sheets, problem identification and correction logs), make note of any construction deviations, coordinate qualifying and testing of materials, monitor any waste excavation, and monitor filling. This individual shall be experienced in civil site construction and solid waste regulations.

General Quality Assurance Engineer - shall supervise the construction monitoring and waste removal to verify compliance with permits, plans, specification and design concepts. This individual shall be experienced in civil site construction and solid waste regulations and shall be a registered Professional Engineer.

The General QA/QC Program includes monitoring the following activities:

- 1 General Earthwork
- 2 Storm Drainage Installation
- 3 General Construction Quality Control

The Soils QA/QC for this project includes soil material qualifying, sampling and testing to verify substantial compliance with the material standards. This work will include the following:

Soils Quality Control Monitor - shall pre-qualify soil materials, monitor the installation of soil materials, determine where in-place soil materials shall be tested, and test the in-place soil materials. This individual shall be responsible for assuring that all soil materials have been pre-qualified and have a chain-of-custody from the pre-qualified source to the project site, prior to installation. This individual shall be experienced in civil site construction and soil testing standards and procedures.

Soils Quality Assurance Engineer - shall supervise the soil material pre-qualifying and testing of in-place soil materials to assure compliance with the test standards and testing frequency requirements, and verify compliance with the plans, specification and design. This individual shall be experienced in civil site construction and soil testing procedures and shall be a registered Professional Engineer.

The QA/QC Plan including monitoring construction of the following:

A Final Cover (~~Intermediate~~ Initial Cover, Compacted Clay Layer and Vegetative Cover)

Incremental side slope closure of Trail Ridge Landfill includes a final cover consisting of 12" of ~~intermediate~~ initial cover, 12" of clay, and 24" of vegetative cover. The clay layer of the final cover must be placed in two 6" (minimum) lifts. The Soils Quality Control Monitor shall observe the clay layer construction on a full-time (on-site) basis. The QA/QC for the final cover is as follows.

1. ~~Intermediate~~ Initial Cover

- a Location - The fill material shall come from an off-site source. The Soils Quality Control Monitor shall visually inspect the fill material.
- b Standard - Soil shall be free of brush, weeds, and other litter; and free of roots, stumps, stones and any other extraneous or toxic matter.

The ~~intermediate~~ initial cover shall be a minimum of 12" thick.

Compacted to 90% of Modified Proctor maximum dry density (ASTM D 1557), unless the soil material contains 30.0% or greater passing the No 200 sieve, then compacted to 90% of Standard Proctor maximum dry density (ASTM D-698).

- c Frequency - Depth measurements and density tests shall be conducted at the frequency of four per acre.

2 Clay Layer (referred to as Barrier Layer in Chapter 62-701, F A C)

- a Borrow Source - Prior to clay layer installation, an appropriate borrow source shall be located. Suitability of the clay layer construction materials from that source shall be determined in accordance with the following:

- (1) If demonstrated field experience is available from at least three prior successful projects of five or more acres each to document that a given borrow source can meet the requirements of the project specifications, then extensive laboratory testing of the borrow source will not be required. However, the source of material shall be geologically similar to and the methods of excavating and stockpiling the material shall be consistent with those used on the prior projects. Furthermore, a minimum of three representative samples from the appropriate thickness of the in-situ stratum or from stockpiles of the borrow material proposed for clay layer construction shall be submitted to the Owner's independent soil testing laboratory to document through index testing that the proposed material is consistent with the material used on prior successful projects. At a minimum, index testing shall consist of percent fines, Atterberg limits and moisture content determinations.
 - (2) If demonstrated field experience as defined above is not available or cannot be documented, then the following requirements shall be met.
 - (a) A field exploration and laboratory testing program shall be conducted by the Owner's independent soil testing laboratory to document the horizontal and vertical extent and the homogeneity of the soil strata proposed for use as clay layer material. A sufficient number of index tests from each potential borrow stratum shall be performed to quantify the variability of the borrow materials and to document that the proposed borrow material complies with specifications. At a minimum, the index tests shall consist of percent fines, Atterberg limits and moisture content determinations.
 - (b) Sufficient laboratory hydraulic conductivity tests shall be conducted on samples representative of the range in variability of the proposed borrow source (ASTM D-5084). For each such sample, test specimens shall be prepared and tested to cover the range of molding conditions (moisture content and dry density) required by project specifications. The hydraulic conductivity tests shall be conducted in triaxial type permeameters. The test specimens shall be consolidated under an isotropic consolidation stress no greater than 10 pounds per square inch and permeated with water under an adequate backpressure to achieve saturation of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and relatively constant values of hydraulic conductivity are measured (ASTM D-5084). The borrow source will only be considered suitable if the hydraulic conductivity of the material, as documented on laboratory test specimens, can be shown to meet the requirements of the project specifications at the 98 percent confidence level.
 - (3) The Soils Quality Assurance Engineer shall review the pre-qualification data and shall approve or reject the clay layer material for use.
- b Test Strip - Prior to full-scale clay layer installation, a field test section or test strip shall be constructed at the site above a prepared subbase. The test strip shall be considered acceptable if the measured hydraulic conductivities of undisturbed samples from the test

strip meet the requirements of the project specifications at the 98 percent confidence level. If the test section fails to achieve the desired results, additional test sections shall be constructed in accordance with the following requirements:

- (1) The test section shall be of sufficient size (40' wide x 60' long at a minimum) such that full-scale clay layer installation procedures can be duplicated within the test section,
- (2) The test section shall be constructed using the same equipment for spreading, kneading and compaction and the same construction procedures (e.g., number of passes, moisture addition and homogenization, if needed) that are anticipated for use during full-scale clay layer installation,
- (3) At a minimum, the clay layer test section shall be subject to the following field and laboratory testing requirements by Soils Quality Control Monitor:
 - (a) A minimum of five random samples of the clay layer construction material delivered to the site during test section installation shall be tested for moisture content (ASTM D-2216), percent fines (ASTM D-1140) and Atterberg limits (ASTM D-4318),
 - (b) At least five field density and moisture determinations shall be performed on each lift of the compacted clay layer test section,
 - (c) Upon completion of the test section lift, the thickness of the lift shall be measured at a minimum of five random locations to check for thickness adequacy, and
 - (d) A minimum of five Shelby tube or drive cylinder (ASTM D-2937) samples shall be obtained from each lift of the test section for laboratory hydraulic conductivity testing. Laboratory hydraulic conductivity testing shall be conducted in triaxial type permeameters (ASTM D-5084). The test specimens shall be consolidated under an isotropic consolidation stress no greater than 10 pounds per square inch and permeated with water under an adequate backpressure to achieve saturation of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and relatively constant values of hydraulic conductivity are measured (ASTM D-5084).
 - (e) The test strip shall meet or exceed the standards established below except the field density which shall be established by the QA Engineer, based upon the test strip results. If the test strip fails to meet these standards, the construction methods and/or material will be rejected and the test strip shall be performed again.

- c. Final Cover Installation - Full scale final cover installation may begin only after completion of a successful test section. During clay layer construction, quality control testing shall be provided to document that the installed clay layer conforms to project specifications. The testing frequency for quality control testing is specified below, however, during construction of the first five acres, the frequencies shall be doubled. The clay layer shall be installed in two 6" lifts for a total minimum thickness of 12"
- (1) Location - The clay layer shall be tested in place. The locations of testing shall be random locations as determined by the Soils Quality Control Monitor. If there are indications of a change in product quality or construction procedures during final cover construction, additional tests shall be performed to determine compliance.
 - (2) Standard
 - (a) Clay Layer Subgrade - Compacted to 90% of Modified Proctor maximum dry density (ASTM D-1557), unless the soil material contains 30.0% or greater passing the No. 200 sieve, then compacted to 90% of Standard Proctor maximum dry density (ASTM D-698). (See Intermediate Initial Cover above)
 - (b) Field Density - The field density shall be established by the QA Engineer based upon the test strip results and shall be determined by Standard Proctor Density (ASTM D-698). In no case shall the field density be less than 80% of Standard Proctor Density (ASTM D-698).
 - (c) Thickness - Each lift (two total) shall be a minimum of 6" thick.
 - (d) Hydraulic Conductivity - The compacted clay layer shall have an in-place hydraulic conductivity no greater than 6.67×10^{-8} cm/sec (ASTM D-5084).
 - (3) Field Testing Frequency
 - (a) Prior to the laying of the clay layer materials, the clay layer subgrade shall be compacted to the specified density. Density tests shall be conducted at a minimum rate of two tests per acre,
 - (b) A minimum of two moisture content and field density determinations shall be conducted per acre per lift of the compacted clay layer. The degree of compaction shall be checked using the one-point field Proctor test or other appropriate test procedures, and
 - (c) A minimum of four thickness measures shall be conducted per acre per lift of the compacted clay layer.
 - (4) Laboratory Testing Frequency
 - (a) Percent fines (ASTM D-1140) of the clay layer material shall be determined at a minimum frequency of two tests per acre per lift of installed clay layer;

(b) Atterberg limits determinations shall be performed on one sample per acre per lift of installed clay layer, and

(c) Hydraulic conductivity testing of Shelby tube or drive cylinder (ASTM D-2937) samples of the compacted clay layer shall be performed at a minimum frequency of one test per acre per lift. Laboratory hydraulic conductivity tests shall be conducted in triaxial type permeameters (ASTM D-5084). The test specimens shall be consolidated under an isotropic consolidation stress no greater than 10 pounds per square inch and permeated with water under an adequate backpressure to achieve saturation of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and relatively constant values of hydraulic conductivity are measured.

(5) Deficiency - If the test data from a clay layer section does not meet the requirements of the project specifications, additional random samples shall be tested from that clay layer section. If such additional testing demonstrates that the thickness and hydraulic conductivity meet the requirements of the project specifications at the 95 percent confidence level, that clay layer section will be considered acceptable. If not, that clay layer section shall be reworked or reconstructed so that it does meet these requirements.

3. Clay Layer Tie-In (To Existing Clay Layer, Where Applicable)

- | | | |
|---|-------------|---|
| a | Location - | The edge of any existing final cover adjacent to the proposed final cover area |
| b | Standard - | The compacted clay layer of any existing final cover and the proposed final cover must be tied together to form one continuous seamless layer. At the interface, the existing and new clay layers shall be compacted to form a seamless connection. |
| c | Frequency - | The Soils Quality Control Monitor shall monitor the tie-in by visual inspection on a continuous basis. |

4. Vegetative Cover

- | | | |
|---|------------|--|
| a | Location - | The vegetative cover shall be tested in place. The location of testing shall be determined by the Soils Quality Control Monitor. |
| b | Standard - | Top soil which is reasonably free of brush, weeds, and other litter; and relatively free of roots, stumps, stones and any other extraneous or toxic matter harmful to plant growth. Roots with a diameter greater than $\frac{3}{8}$ " shall be hand picked and removed. |

The vegetative cover shall be at least 24" thick.

- c Frequency - Depth measurements shall be taken at the frequency of four per acre. The soil shall be monitored on a continuous basis for extraneous matter

5 Final Cover Repairs (When Applicable)

If, during construction of the final cover system, damage is sustained on the final cover system (including the ~~intermediate~~ initial cover, clay layer and vegetative cover), the areas of damage shall be reconstructed and retested in accordance with corresponding section described above. All repair areas shall be tested at the frequencies prescribed above, unless more frequent testing is required at the discretion of the Soils Quality Assurance Engineer.

B Downcomer Pipes

Downcomer pipes shall be installed in the final cover at the low point of the terraces, to intercept the stormwater between terraces. The downcomer pipes shall include the terrace side drains and terrace underdrain piping.

The downcomer pipes shall be constructed as shown on the Construction Drawings. The clay around the pipes shall be compacted into a uniform homogeneous material. Prior to placement of vegetative cover over the downcomer pipes, the pipe shall be inspected by the General Quality Control Monitor.

- 1 Location - The compacted clay layer shall be tested in place. The locations of testing shall be determined by the Soils Quality Control Monitor. If there are indications of a change in product quality or construction procedures during construction, additional tests shall be performed to determine compliance.
2. Standard -
 - a Clay Layer Subgrade - Compacted to 90% of Modified Proctor maximum dry density (ASTM D 1557) unless the soil material contains 30.0% or greater passing the No. 200 sieve, then compacted to 90% of Standard Proctor maximum dry density (ASTM D-698) (12" thick minimum)
 - b Field Density - The field density of the clay layer shall be as established in Section A 2.c (2)(b) above and shall be determined by Standard Proctor Density (ASTM D 698)
 - c Thickness - Twelve inches minimum below pipe
 - d Hydraulic Conductivity - The compacted clay layer shall have an in-place hydraulic conductivity no greater than 6.67×10^{-8} cm/sec (ASTM D 5084)
- 3 Field Testing Frequency -
 - a Prior to the laying of the compacted clay materials, the subbase shall be compacted to the specified density. Density tests and thickness shall be conducted at a minimum rate of one per 75 L F of pipe. (Minimum of one test between terraces)

- b A minimum of one moisture content and field density determination of the compacted clay layer shall be conducted per 75 L F of pipe
- c A minimum of two thickness measures of the compacted clay layer shall be conducted per 75 L F of pipe

4 Laboratory Testing Frequency -

- a Hydraulic conductivity testing of Shelby tube or drive cylinder (ASTM D 2937) samples of the compacted clay layer shall be performed at a minimum frequency of one test per 75 L.F of pipe (at least once between terraces) Laboratory hydraulic conductivity tests shall be conducted in triaxial type permeameters (ASTM D 5084). The test specimens shall be consolidated under an isotropic consolidation stress no greater than 10 pounds per square inch and permeated with water under an adequate backpressure to achieve saturation of the test specimens The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and relatively constant values of hydraulic conductivity are measured

- 5 Deficiency - If the test data from a compacted clay layer section does not meet the requirements of the project specifications, that section shall be reworked or reconstructed so that it does meet these requirements

C Underdrain Filter Sand

The underdrains in the terraces shall be surrounded by filter sand as shown on the Contract Drawings. The QA/QC for the filter sand is as follows

1 Filter Sand

- a Location - The material shall be pre-qualified prior to installation

If the testing is done at the borrow source, a chain of custody shall be provided
- b Standard - Clean,,uniformly graded sand with a uniformity coefficient of 1.5 or greater and an effective grain size of 0.2 mm to 0.5 mm Grain size distribution shall be conducted as part of pre-qualification

The sand shall have a hydraulic conductivity no less than 1.0×10^{-3} cm/sec at a density of 100 percent Modified Proctor The hydraulic conductivity testing shall be by Constant Head method (ASTM D2434).
- c Frequency - The hydraulic conductivity of the sand shall be tested once per 100 C Y of sand material

D Gas Wells ~~Vents~~

Gas wells (temporary and permanent) ~~vents~~ shall be installed through the final cover. The QA/QC for gas vent materials shall be as follows:

1 Gravel

- a Location - The gravel shall be pre-qualified by certification by the supplier
- b. Standard - The gravel shall be clean gravel with no fines The gravel shall be FDOT No 4 ~~3~~ Course Aggregate (ASTM D 448)

The gravel shall be non-calcareous (ASTM D 4373)
- c Frequency - The gravel shall be certified by the supplier The gravel shall be tested once per 100 C Y

2 Bentonite

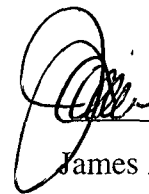
- a Location - The material shall be pre-qualified with documentation from the supplier
- b Standard - The material shall have a hydraulic conductivity no greater than 1.0×10^{-8} cm/sec (ASTM D 5084) ~~be a homogeneous, inorganic material with at least 50 percent, by weight, passing the No 200 sieve (ASTM D 1140)~~
- c Frequency - The material shall be certified by the supplier, one time only

2. Initial Cover

INITIAL COVER

The initial cover consisted of fill material from off-site sources. The locations of density testing and thickness measurements of the initial cover layer are shown on the plans included in this section. The density test results and thickness measurement results are also included in this section. The Field Density Test Reports are included in Appendix A.

I have reviewed the documentation and test data of the Quality Control Monitor and based upon that data, find that the construction is substantially in accordance with the Quality Assurance / Quality Control Plan.



James A. Horton, P.E.
Registered, FL 23315

7/16/12



LAW

RESOURCES CREATING SOLUTIONS

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173
Fax - (904) 398-1084

INITIAL COVER DATA SHEET UNITS 21 - 23

Client England, Thims & Miller
Project Trail Ridge Landfill Incremental Closure
LAW Project No 40562-1-4214

Date	Field Density Test No	Location Station	Depth or Elevation	Thickness (In)	Density (% Compaction)
1/11/02	C-1	90+05N and 101+20E	Top of Finished Initial Cover	N/A	90
2/04/02	C-1A	90+05N and 101+20E	Top of Finished Initial Cover	N/A	88
2/04/02	C-1B	90+05N and 101+20E	Top of Finished Initial Cover	19-3/4+	90
1/11/02	C-2	90+55N and 101+60E	Top of Finished Initial Cover	N/A	90
2/04/02	C-2A	90+55N and 101+60E	Top of Finished Initial Cover	N/A	88
2/04/02	C-2B	90+55N and 101+60E	Top of Finished Initial Cover	21-1/4+	91
2/16/02	C-13	88+90N and 101+40E	Top of Finished Initial Cover	18-3/4+	90
2/16/02	C-14	87+40N and 101+50E	Top of Finished Initial Cover	18-1/4+	91
2/16/02	C-15	87+10N and 102+20E	Top of Finished Initial Cover	12-3/4	90
2/16/02	C-16	88+45N and 101+95E	Top of Finished Initial Cover	18-1/4+	91
2/16/02	C-17	87+90N and 100+85E	Top of Finished Initial Cover	22+	90
2/16/02	C-18	89+60N and 100+90E	Top of Finished Initial Cover	N/A	84
2/18/02	C-18A	89+60N and 100+90E	Top of Finished Initial Cover	18-1/2	90
2/19/02	C-19	90+80N and 102+45E	Top of Finished Initial Cover	20-3/4+	97



LAW

RESOURCES CREATING SOLUTIONS

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173
Fax - (904) 398-1084

INITIAL COVER DATA SHEET UNITS 1 - 4

Client England, Thims & Miller
Project Trail Ridge Landfill Incremental Closure
LAW Project No 40562-1-4214

Date	Field Density Test No	Location Station	Depth or Elevation	Thickness (In)	Density (% Compaction)
3/01/02	C-54	87+15N and 126+05E	Top of Finished Initial Cover	N/A	85
3/01/02	C-54A	87+15N and 126+05E	Top of Finished Initial Cover	19-1/4	90
3/01/02	C-55	87+75N and 125+35E	Top of Finished Initial Cover	N/A	87
3/01/02	C-55A	87+75N and 125+35E	Top of Finished Initial Cover	18+	92
3/15/02	C-69	87+06N and 124+75E	Top of Finished Initial Cover	17-1/2	92
3/15/02	C-70	87+99N and 124+65E	Top of Finished Initial Cover	18	90
3/18/02	C-71	87+02N and 123+73E	Top of Finished Initial Cover	19	91
3/18/02	C-72	88+03N and 124+01E	Top of Finished Initial Cover	18-1/2	91
4/26/02	C-88	91+63N and 123+88E	Top of Finished Initial Cover	14	95
4/30/02	C-90	89+51N and 123+77E	Top of Finished Initial Cover	14	92
4/30/02	C-91	90+51N and 123+98E	Top of Finished Initial Cover	18	93
5/01/02	C-94	90+24N and 123+56E	Top of Finished Initial Cover	12	92

3. Compacted Clay Layer

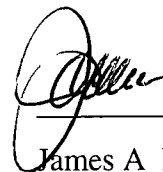
COMPACTED CLAY LAYER

The clay layer material was obtained from an off-site source. The borrow source was located south of County Road 225 and approximately three miles west of the town of Lawtey in Bradford County, Florida. The borrow source, designated the Gaskins Pit, was operated by R B Baker Construction. Pre-qualification testing of the borrow source, including the verification of permeability of the clay material, was presented in our letter dated January 4, 2002. A copy of that letter is included in this section. The Quality Control Monitor routinely visited the borrow source in order to verify the continued homogeneity of the soil strata during excavation.

A test strip was prepared using the borrow source material from the Gaskins Pit. The test strip construction began on February 5, 2002. Our letter dated March 8, 2002 regarding the monitoring and testing of the test strip is included in this section. Note that based upon the test strip, the minimum density criteria for the clay layer was set at a minimum of 88 percent of the Standard Proctor Maximum.

The installed compacted clay layer testing locations are shown on the plan included in this section. A summary of the density, thickness, hydraulic conductivity, moisture content, percent fines, and Atterberg limits testing are also included in this section. The Field Density Test Reports are included in Appendix A.

I have reviewed the documentation and test data of the Quality Control Monitor and based upon that data, find that the construction is substantially in accordance with the Quality Assurance / Quality Control Plan.


James A Horton, P E
Registered, FL 23315 7/16/02

3.1 Borrow Pit Pre-Qualification

January 4, 2002



Ms Juanitta Clem, P E
England, Thims & Miller, Inc
14775 St Augustine Road
Jacksonville, Florida 32258

Subject **Clay Borrow Source Pre-Qualification**
 Trail Ridge Landfill
 Incremental Closure and Landfill Gas System Expansion
 Jacksonville, FL
 LAW Project Number 40562-1-4214

Dear Ms Clem

Law Engineering and Environmental Services, Inc (LAW) has completed the pre-qualification testing of the potential clay borrow source. Attached are a site location map, Field Exploration Plan (FEP), completed pre-qualification form and Standard Proctor test results.

In summary, the proposed borrow source is located south of County Road 225, and approximately three miles west of the town of Lawtey in Bradford County, Florida. As part of the site evaluation designated the Gaskins Pit, eight test pits were excavated. The approximate locations of the test pits are shown on the FEP. The test pits initially encountered from ½ to 3 feet of fine sandy overburden soils. The underlying clayey soils consisted of two strata. The upper material, which varied in thickness from 4 to 5 ½ feet, consisted of red, orange, and gray very clayey sand to sandy clay. This material was underlain by 2 to 2 ½ feet of blue gray slightly sandy to sandy clay. Both strata contain sand seams of varying thickness. Three samples were submitted for Standard Proctors and permeability testing. The results of this testing are as follows:


	Test Pit 4	Test Pit 5	Test Pit 8
	Sample 2	Sample 2	Sample 1
	(Upper Clay Stratum)	(Lower Clay Stratum)	(Upper Clay Stratum)
Encountered from	4' to 7 ½'	6 ½' to 9'	1 ½' to 7 ½'
Maximum Dry Density (Standard Proctor)	108.9 pcf	77.9 pcf	109.2 pcf
Optimum Moisture Content (Standard Proctor)	17.1%	36.3%	16.51%
Plasticity Index	58	107	27
Percent Fines	48	88	49
Coefficient of Permeability	1.1 x 10 ⁻⁸ cm/sec	6.0 x 10 ⁻⁹ cm/sec	3.6 x 10 ⁻⁹ cm/sec
Percent Compaction (Standard Proctor)	93%	91%	94%
Moisture Content at compaction	21.3%	44.0%	20.9%

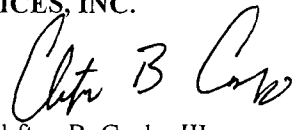
Results of the laboratory testing are presented on various data sheets attached to this report. Based on these results, it is our opinion that both of the clay strata from this site will be acceptable for consideration as the clay liner material. We understand that you intend to mix the upper and lower clay strata during the borrow operation. Care should be taken when mixing the two strata to ensure larger sand seams present in the material are properly mixed, or avoided, in order to avoid permeability acceptability problems during construction. While the trend was very slight, the material appeared to be more favorable with respect to permeability considerations on the east end of the site.

We appreciate the opportunity to be of service on this phase of your project. If you have any questions concerning this report please contact us.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

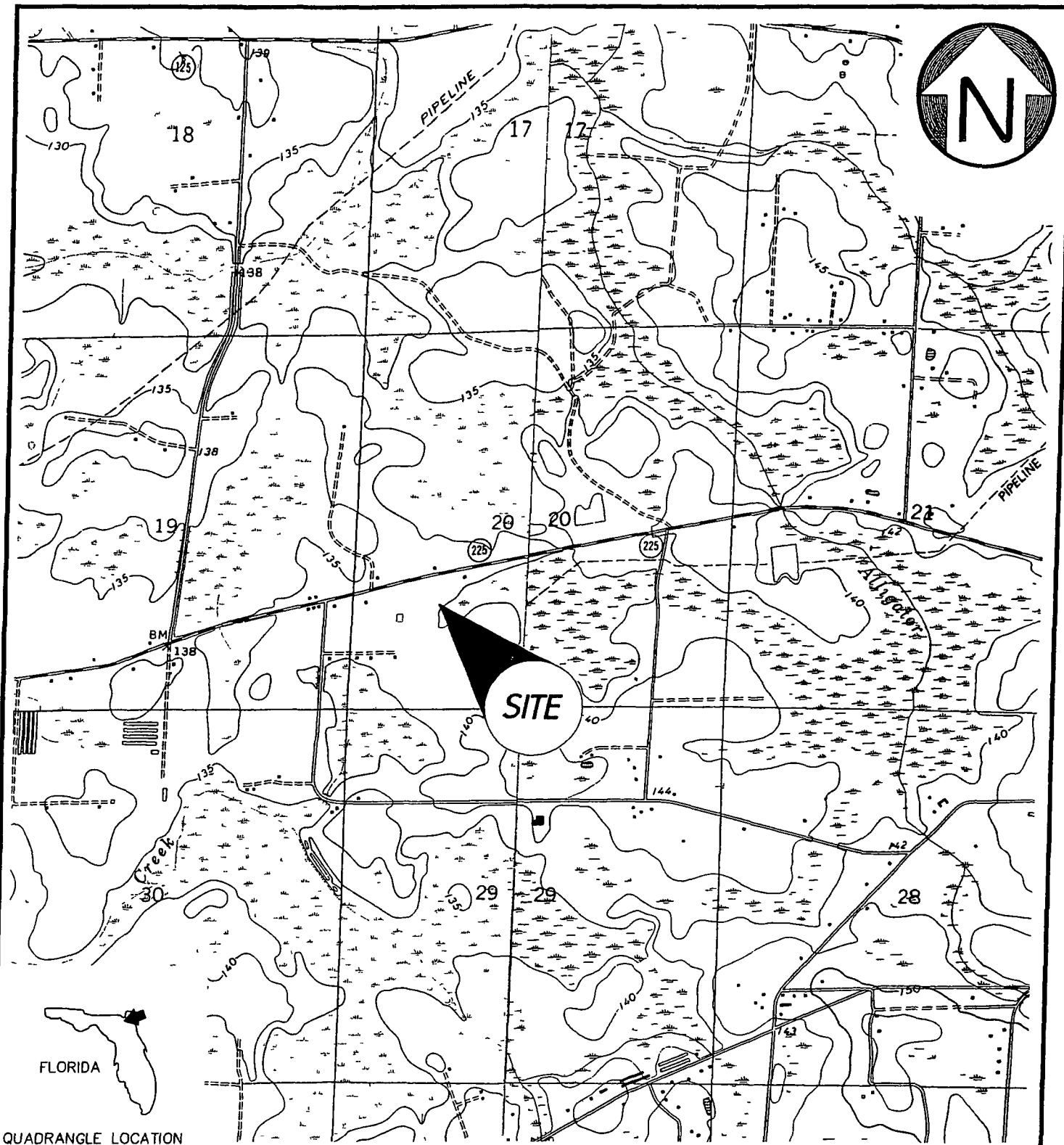

James A. Horton, P.E.
Principal Geotechnical Engineer
Registered, FL 23315


Clifton B. Cosby III
Staff Engineer

Attachments: Field Exploration Plan
Pre-Qualification Form
Test Results

1/2/00

*



QUADRANGLE LOCATION

REFERENCE
 RAIFORD QUADRANGLE, FLORIDA
 DATED. 1970, PHOTOREVISED 1984
 LAWTEY QUADRANGLE, FLORIDA
 DATED 1970, PHOTOREVISED 1993
 TOPOGRAPHIC MAPS
 U S GEOLOGICAL SURVEY

0 1000' 2000'
 GRAPHIC SCALE



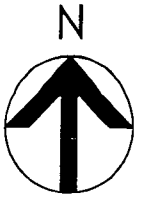
LAW

ENGINEERING AND ENVIRONMENTAL SERVICES, INC

SITE LOCATION MAP

Trail Ridge Landfill
 Incremental Closure and Landfill Gas System Expansion
 Bradford County, Florida

DRAWN JP	DATE 1/2/02	SCALE 1"=2000'
CHECKED CC	PROJECT NO 40562-1-4214	



COUNTY ROAD 225

INGRESS/EGRESS EASEMENT

▲ OP-1

▲ OP-3

▲ OP-5

▲ OP-7

▲ OP-2

▲ OP-4

▲ OP-6

▲ OP-8

0 50' 100'

GRAPHIC SCALE

LEGEND

▲ OBSERVATION PIT LOCATION

REFERENCE Survey Plan
Prepared by Patrick B. Welch & Associates, Inc
Dated November 20, 2001



LAW

ENGINEERING AND ENVIRONMENTAL SERVICES, INC

OBSERVATION PIT LOCATION PLAN

Lot 42 - Woodlawn
Bradford County, Florida

DRAWN JP	DATE 12/17/01	SCALE 1"=100'
CHECKED CC	PROJ NO	APPROX

**TRAIL RIDGE LANDFILL
CLAY BORROW SOURCE
PRE-QUALIFICATION FORM**

CLAY SOURCE Gaskins Pit

LOCATION* County Road 225 (see attached map)

Bradford County, Florida

DISTANCE FROM PROJECT SITE 18 miles

ESTIMATED PROJECT QUANTITY 6609 yds³

ESTIMATED SOURCE QUANTITY 26,900 yds³

NUMBER OF TEST PITS 8

* Attach a map showing the location of the clay borrow source and the horizontal and vertical extent of the clay borrow. Also include the location and approximate depth of all test pits.

TEST RESULTS

A TEST PIT NO 1

Clay Stratum Description Orange, maroon and light gray very clayey fine sand

Depth Below Surface From 2' To 4'

Percent Fines 37

Atterberg Limits LL = 43 PL = 18

Moisture Content 19%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description Light gray, maroon and orange very clayey fine sand

Depth Below Surface From 4' To 7'

Percent Fines 45

Atterberg Limits LL = 76 PL = 23

Moisture Content 24%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

B TEST PIT NO 2

Clay Stratum Description Orange and gray clayey fine sand

Depth Below Surface From 2-1/2' To 4'

Percent Fines 37

Atterberg Limits LL = 57 PL = 23

Moisture Content 17

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description Orange and gray very sandy clay

Depth Below Surface From 4' To 7'

Percent Fines 52

Atterberg Limits LL = 72 PL = 20

Moisture Content 25

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

TEST RESULTS (continued)

C TEST PIT NO 3

Clay Stratum Description Orange and light gray very clayey fine sand with small sand seams

Depth Below Surface From 3' To 6'

Percent Fines 47

Atterberg Limits LL = 51 PL = 21

Moisture Content 16%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description Light gray, maroon and orange sandy clay with a few small sand seams

Depth Below Surface From 6' To 8-1/2'

Percent Fines 64

Atterberg Limits LL = 96 PL = 27

Moisture Content 38%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Attach additional sampling results as needed

Approved by Contractor _____

Approved by QC Monitor _____

Approved by QA Engineer _____

ADDITIONAL TEST RESULTS

D TEST PIT NO 4

Clay Stratum Description Orange, light gray and red very clayey fine sand

Depth Below Surface From 2-1/2' To 4'

Percent Fines 42

Atterberg Limits LL = 46 PL = 19

Moisture Content 22%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description Light gray and orange sandy clay with gray sand seams

Depth Below Surface From 4' To 7-1/2'

Percent Fines 65

Atterberg Limits LL = 80 PL = 22

Moisture Content 32%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor 1.1×10^{-8}

(93% actual density)

Clay Stratum Description Blue-gray very clayey fine sand with gray sand seams

Depth Below Surface From 7-1/2' To 9-1/2'

Percent Fines 49

Atterberg Limits LL = 83 PL = 24

Moisture Content 28%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Approved by Contractor _____

Approved by QC Monitor _____

Approved by QA Engineer _____

ADDITIONAL TEST RESULTS

E TEST PIT NO 5

Clay Stratum Description Orange and light gray very clayey fine sand with a few small sand seams
Depth Below Surface From 2' To 6-1/2'

Percent Fines 45

Atterberg Limits LL = 54 PL = 18

Moisture Content 17%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description Blue-gray slightly sandy clay with small and large sand seams
Depth Below Surface From 6-1/2' To 9'

Percent Fines 88

Atterberg Limits LL = 144 PL = 37

Moisture Content 65%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor 6.0×10^{-9}

(91% actual density)

F TEST PIT NO 6

Clay Stratum Description Gray and orange very clayey fine sand with a few small sand seams
Depth Below Surface From 3' To 7'

Percent Fines 43

Atterberg Limits LL = 56 PL = 20

Moisture Content 20%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description Blue-gray very clayey fine sand with small and large sand seams
Depth Below Surface From 7' To 9'

Percent Fines 44

Atterberg Limits LL = 72 PL = 24

Moisture Content 26%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Approved by Contractor _____

Approved by QC Monitor _____

Approved by QA Engineer _____

ADDITIONAL TEST RESULTS

G TEST PIT NO 7

Clay Stratum Description Gray and orange very sandy clay with many sand seams

Depth Below Surface From 2' To 7-1/2'

Percent Fines 54

Atterberg Limits LL = 69 PL = 22

Moisture Content 24%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description Blue-gray clay and orange sandy clay with thin sand seams

Depth Below Surface From: 7-1/2' To 9-1/2'

Percent Fines 65

Atterberg Limits LL = 66 PL = 23

Moisture Content 43%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

H TEST PIT NO 8

Clay Stratum Description. Gray and orange very clayey fine sand with many sand seams

Depth Below Surface From 1-1/2' To 7-1/2'

Percent Fines 45

Atterberg Limits LL = 47 PL = 20

Moisture Content 19%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor 3.6×10^{-9}

(94% actual density)

Clay Stratum Description Light blue-gray slightly sandy clay with sand seams

Depth Below Surface From 7-1/2' To 9'

Percent Fines 91

Atterberg Limits LL = 148 PL = 45

Moisture Content 65%

Hydraulic Conductivity (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

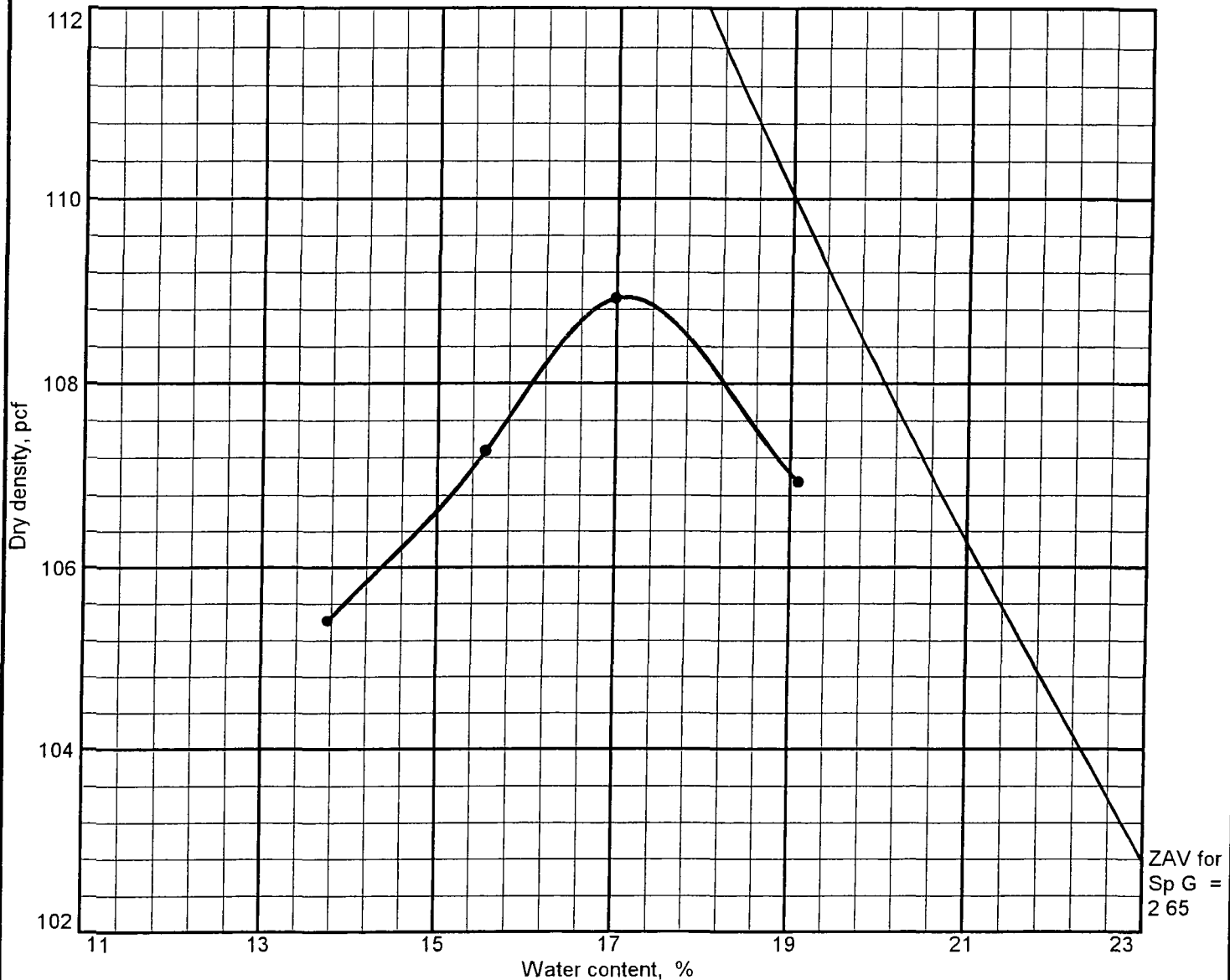
@ 90% Standard Proctor _____

Approved by Contractor _____

Approved by QC Monitor _____

Approved by QA Engineer _____

COMPACTION TEST REPORT



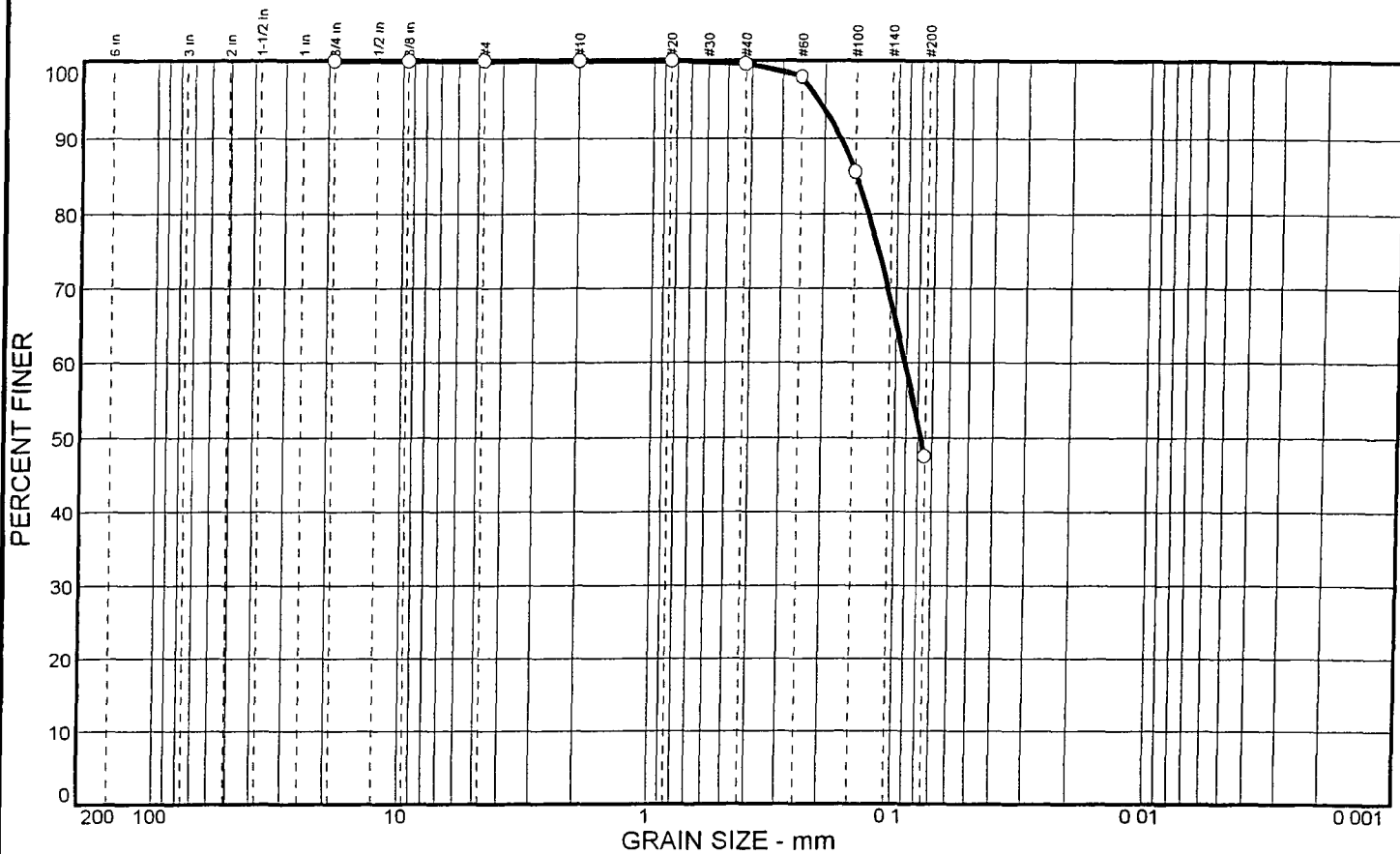
Test specification FDOT FM T-5-521 Modified

Elev/ Depth	Classification		Nat. Moist	Sp G	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SC	A-7-6(21)			80	58	00	47.5

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 108.9 pcf Optimum moisture = 17.1 %		Grav, Orange and Brown Very Clayey Fine SAND
Project No Client: England Thums & Miller Project Trailridge Landfill Closure Construction Project No 40562-1-4214 ● Source Proposed Clay Liner Material Sample No.: CL-1		Remarks Pit Sample 4-2
COMPACTION TEST REPORT Law Engineering and Environmental Services, Inc.		
		Plate

Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		52.5	47.5		SC	A-7-6(21)	22	80

SIEVE		PERCENT FINER		SIEVE		PERCENT FINER		SOIL DESCRIPTION
inches	size	○		number	size	○		
75		100.0		#4		100.0		Gray, Orange and Brown Very Clayey Fine SAND
375		100.0		#10		100.0		
				#20		100.0		
				#40		99.6		
				#60		98.0		
				#100		85.5		
				#200		47.5		
GRAIN SIZE								REMARKS
D60		0.0915						
D30								
D10								
COEFFICIENTS								
C _c								
C _u								

○ Source Proposed Clay Liner Material

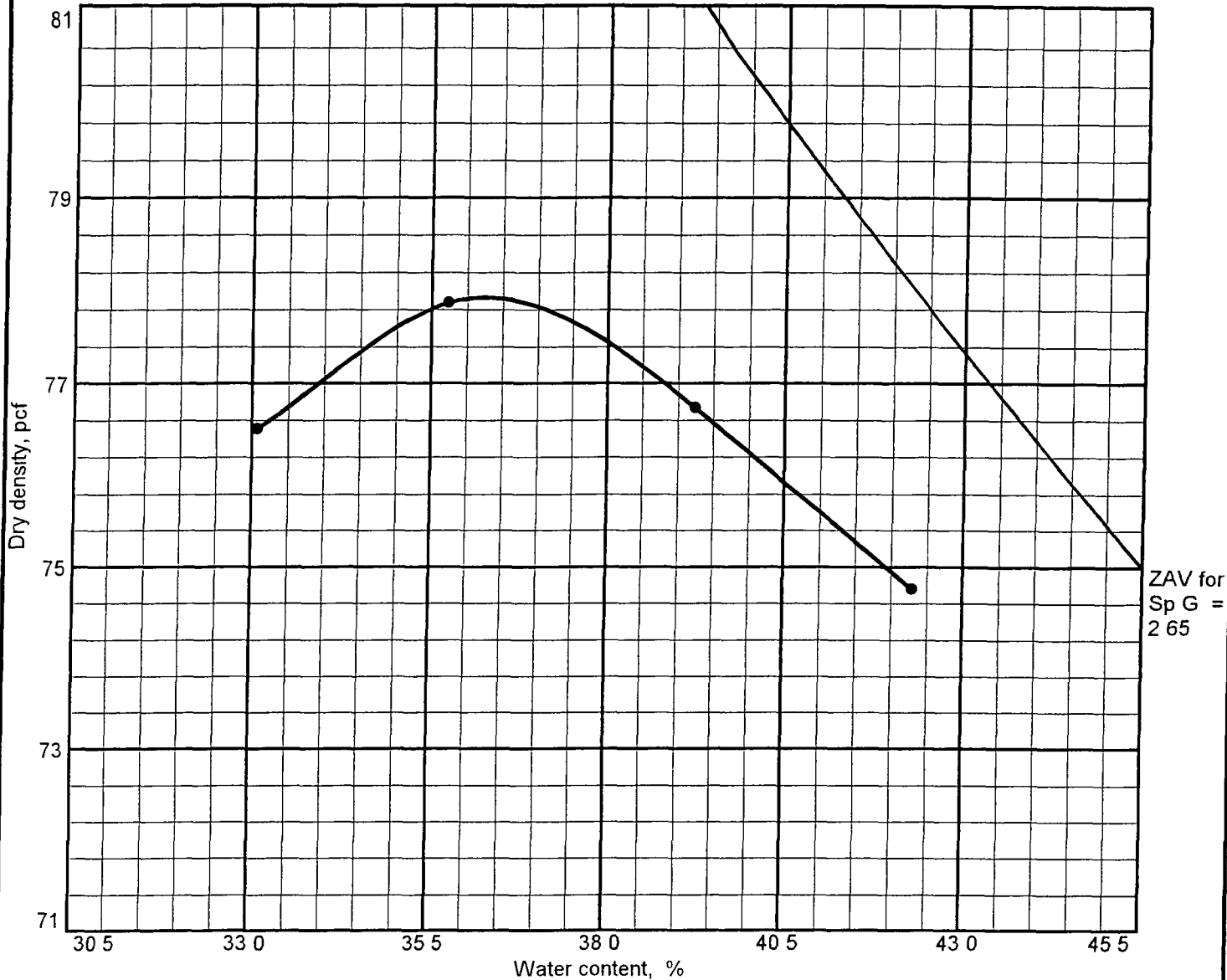
Sample No CL-1

**Law Engineering and
Environmental Services, Inc.**

Client England Thims & Miller
Project Trailridge Landfill Closure Construction
Project No 40562-1-4214
Project No

Plate

COMPACTION TEST REPORT

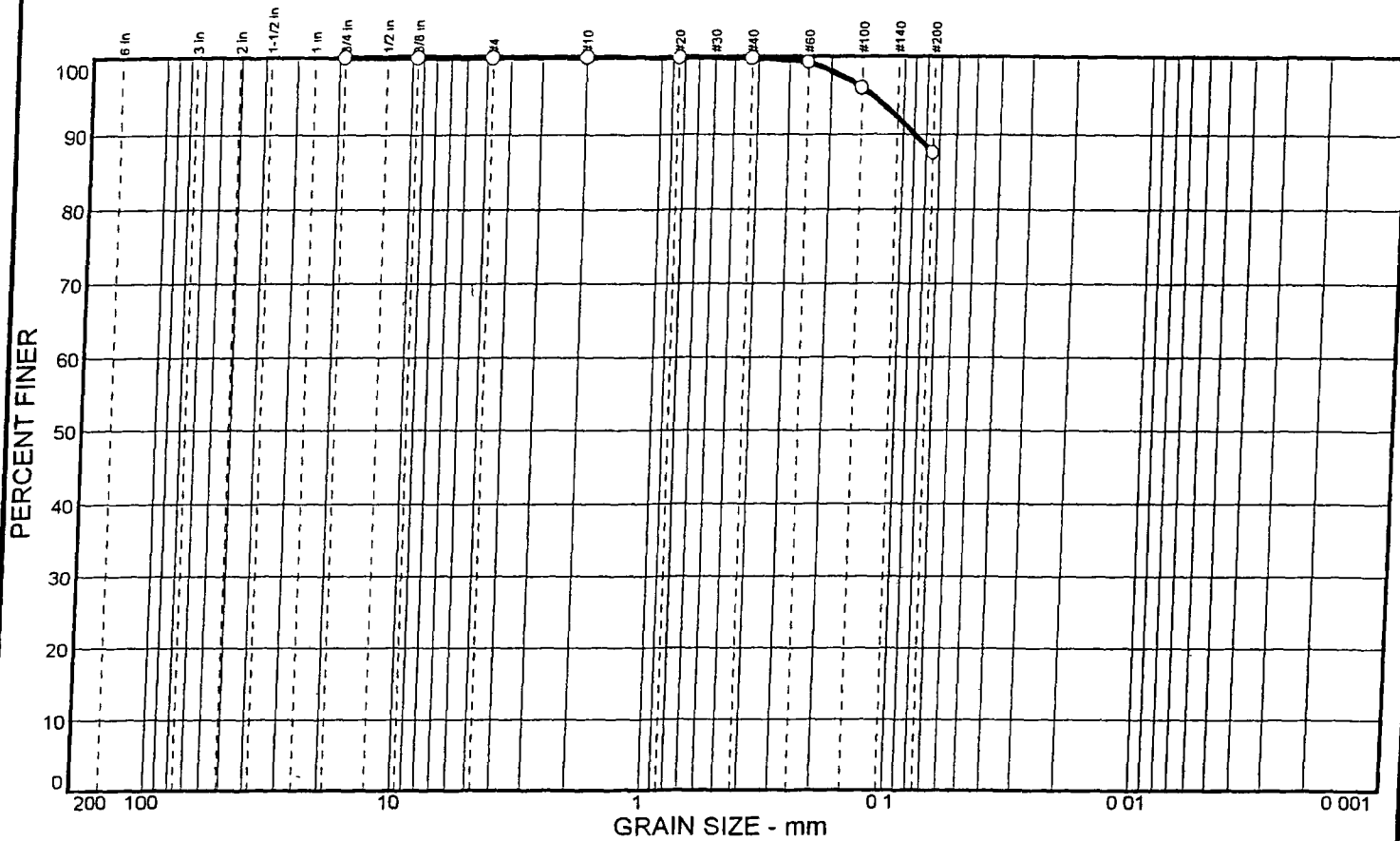


Test specification FDOT FM T-5-521 Modified

Elev/ Depth	Classification		Nat. Moist.	Sp G.	LL	PI	% > No.4	% < No 200
	USCS	AASHTO						
	CH	A-7-5(109)			144	107	00	87.5

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 77.9 pcf Optimum moisture = 36.3 %		Light Gray Sandy CLAY
Project No Client. England Thims & Miller Project: Trailridge Landfill Closure Construction Project No 40562-1-4214 ● Source Proposed Clay Liner Material Sample No.. CL-2		Remarks Test Pit No 5-2
COMPACTION TEST REPORT Law Engineering and Environmental Services, Inc.		
		Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		12.5	87.5		CH	A-7-5(109)	37	144

SIEVE inches size	PERCENT FINER		
	0		
75	100.0		
375	100.0		
GRAIN SIZE			
D ₆₀			
D ₃₀			
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.8		
#60	99.3		
#100	96.1		
#200	87.5		

SOIL DESCRIPTION O Light Gray Sandy CLAY
REMARKS O Pit Sample No. 5-2

O Source Proposed Clay Liner Material

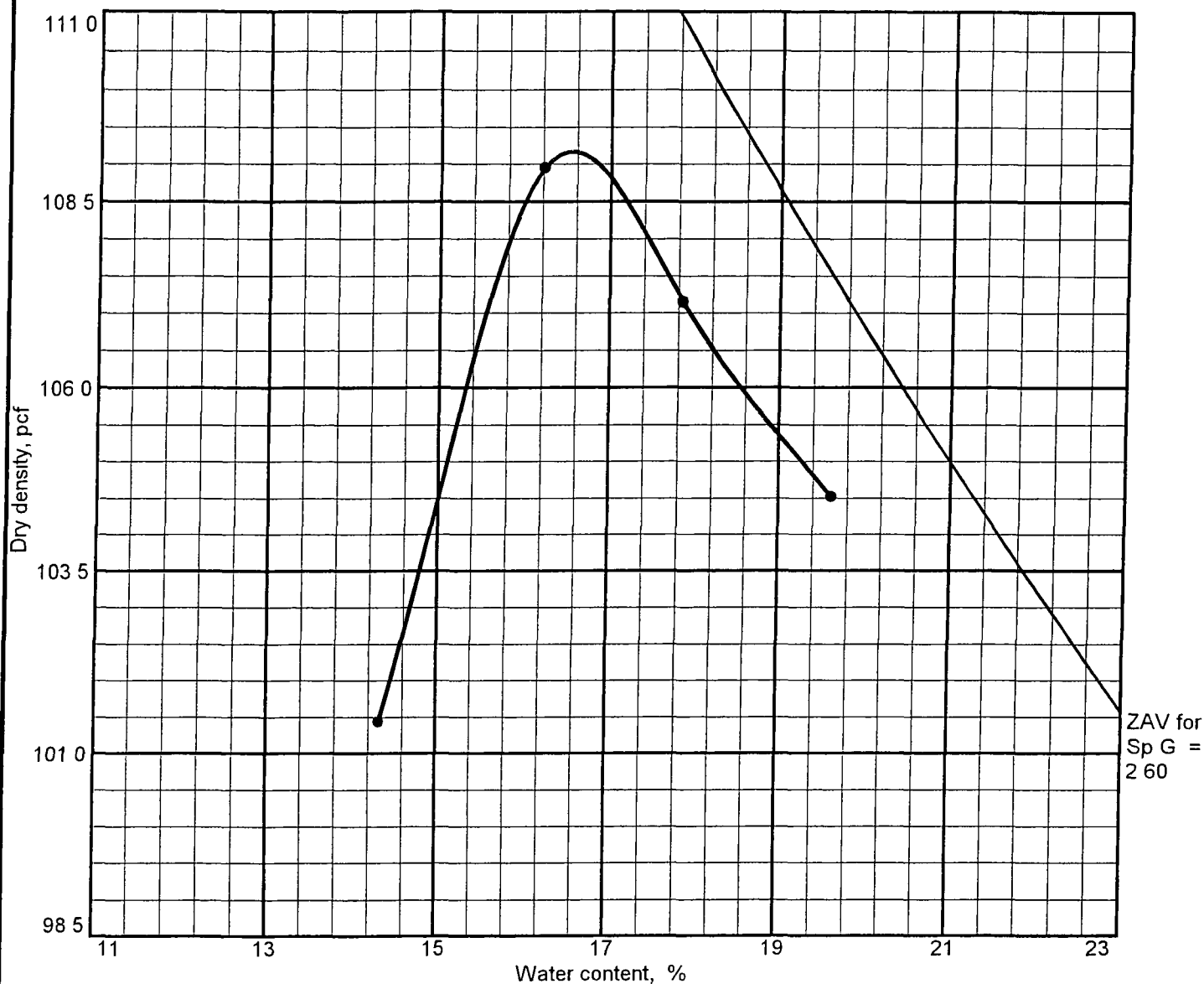
Sample No. CL-2

Law Engineering and
Environmental Services, Inc.

Client England Thums & Miller
Project Trailridge Landfill Closure Construction
Project No. 40562-1-4214
Project No.

Plate

COMPACTION TEST REPORT

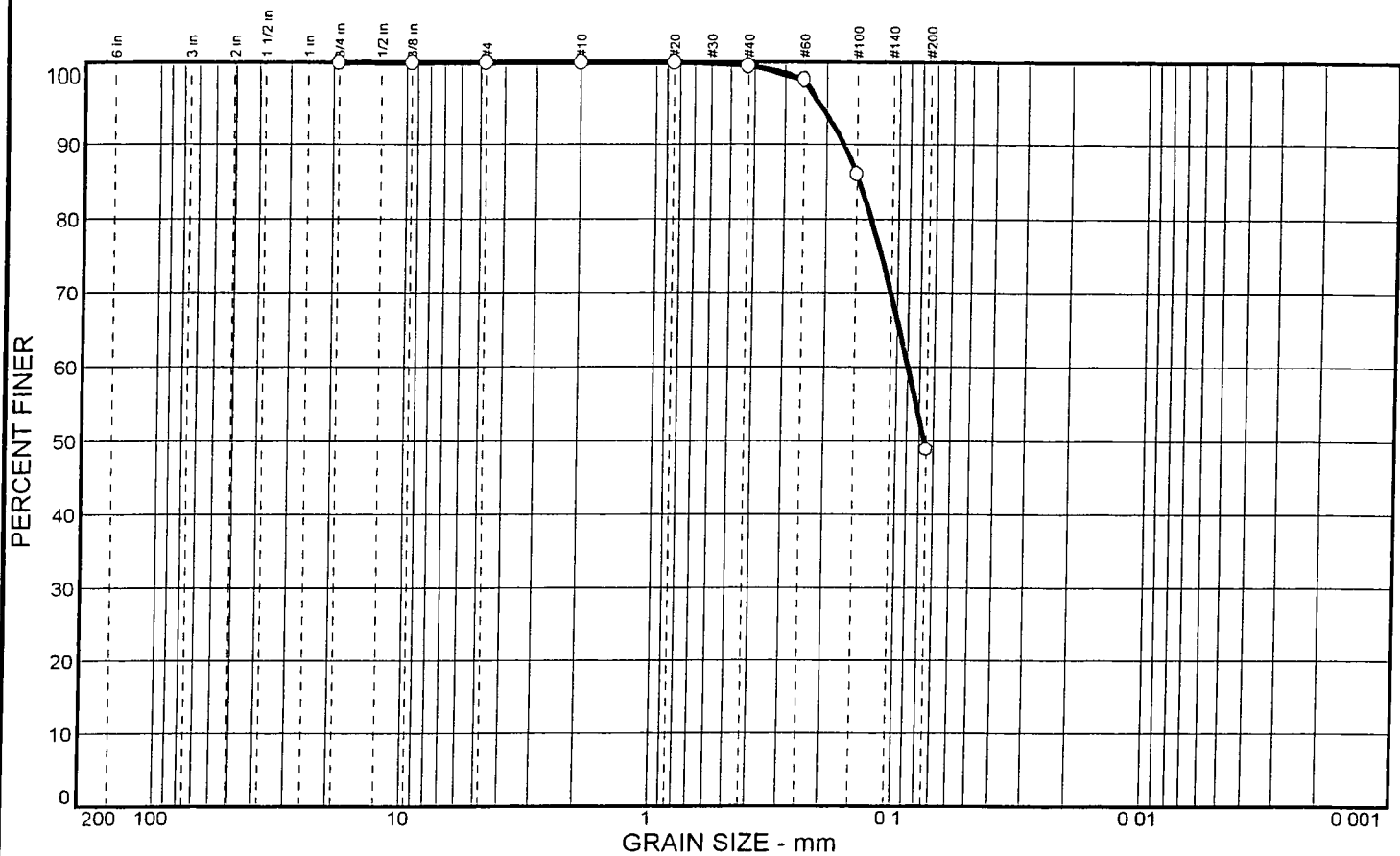


Test specification FDOT FM T-5-521 Modified

Elev/ Depth	Classification		Nat. Moist.	Sp G	LL	PI	% >	% < No.200
	USCS	AASHTO						
	SC	A-4(0)			47	27	0.0	48.9

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 109.2 pcf Optimum moisture = 16.5 %		Brown Very Clayey Fine SAND
Project No. Client: England Thums & Miller Project: Trailridge Landfill Closure Construction Project No. 40562-1-4214 ● Source Proposed Clay Liner Material Sample No.. CL-3		
COMPACTION TEST REPORT Law Engineering and Environmental Services, Inc.		
		Remarks. Test Pit Sample 8-1
		Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		51.1	48.9		SC	A-4(0)	20	47

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
75	100.0			#4	100.0			○ Brown Very Clayey Fine SAND
375	100.0			#10	100.0			
				#20	100.0			
				#40	99.6			
				#60	98.0			
				#100	86.0			
				#200	48.9			REMARKS ○ Pit Sample No 8-1
GRAIN SIZE								
D ₆₀	0.0898							
D ₃₀								
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source Proposed Clay Liner Material

Sample No CL-3

**Law Engineering and
Environmental Services, Inc.**

Client England Thims & Miller
Project Trailridge Landfill Closure Construction
Project No 40562-1-4214
Project No

Plate

3.2 Test Strip

March 8, 2002



Ms Juanitta Clem, P E
England, Thims & Miller, Inc
14775 St Augustine Road
Jacksonville, Florida 32258

Subject **Clay Test Strip Qualification
Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
Jacksonville, FL
LAW Project Number 40562-1-4214**

Dear Ms Clem

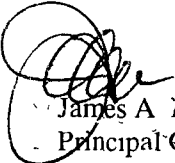
Law Engineering and Environmental Services, Inc (LAW) has completed the monitoring and testing of the clay test strip placement at the subject site. One test strip was constructed beginning on February 5, 2002, which did meet all permeability requirements. Attached is the test strip qualification form for the test strip. Field density testing performed by nuclear equipment indicated density values between 88 and 93 percent of the Standard Proctor values for the samples for the test strip that met the permeability criteria. Samples of the clay liner were obtained for permeability testing. The coefficient of permeability values obtained for these samples varied from 1.9×10^{-9} to 4.6×10^{-8} cm/sec.

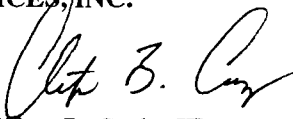
In summary, the test strip permeabilities meet the specified requirement at densities varying from 88 to 93 percent of the Standard Proctor maximum. Based on these results, we consider the test strip construction acceptable and recommended a minimum density criteria for the clay of 88 percent of the Standard Proctor maximum.

We appreciate the opportunity to be of continuing service on this phase of your project. If you have any questions concerning this report, please contact us.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


James A. Horton, P E
Principal Geotechnical Engineer
Registered, FL 23315


Clifton B. Cosby III
Staff Engineer

Attachments Test Strip Form

TRAIL RIDGE LANDFILL
THIRD INCREMENT OF CONSTRUCTION
TEST STRIP FORM

TEST STRIP NO 1 DATE 3/8/02

LOCATION Station 101+05(E) to Station 101+75(E)

Station 90+00(N) to Station 90+50(N)

SIZE (20' X 50' MINIMUM) 70' x 50'

TYPE OF EQUIPMENT USED Dozer / steel wheeled roller

PASS/FAIL? Pass

TEST RESULTS

Lift No 1

Percent Fines 44% to 67%

Atterberg Limits PI 43 to 55

Moisture Content 22% to 43%

Field Density (@ 5 locations)

P-1	90%
P-2	92%
P-3	91%
P-4	89%
P-5	93%

Thickness (@ 5 locations)

P-1	8-5/8"
P-2	7-5/8"
P-3	7-1/2"
P-4	8-1/4"
P-5	7-1/2"

Hydraulic Conductivity (@ 5 locations)

P-1	4.7×10^{-9}
P-2	1.9×10^{-9}
P-3	3.4×10^{-9}
P-4	5.0×10^{-9}
P-5	2.4×10^{-8}

Lift No 2

Percent Fines 46% to 52%

Atterberg Limits PI 46 to 61

Moisture Content 22% to 30%

Field Density (@ 5 locations)

P-6	93%
P-7	93%
P-8	92%
P-9	89%
P-10	88%

Thickness (@ 5 locations)

P-6	12-1/2"
P-7	12"
P-8	13"
P-9	12-1/2"
P-10	12"

Hydraulic Conductivity (@ 5 locations)

P-6	3.5×10^{-9}
P-7	4.6×10^{-8}
P-8	4.7×10^{-9}
P-9	4.3×10^{-9}
P-10	1.5×10^{-8}

TEST RESULTS (continued)

Lift No _____

Percent Fines _____

Atterberg Limits _____

Moisture Content _____

Field Density (@ 5 locations)

Thickness (@ 5 locations)

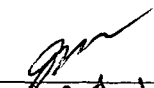
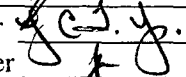
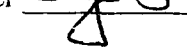
Hydraulic Conductivity (@ 5 locations)

Attach sampling results as needed

Approved by Contractor

Approved by QC Monitor

Approved by QA Engineer

3.3 Clay Layer



L&W

RESOURCES CREATING SOLUTIONS

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173

Fax - (904) 398-1084

TEST DATA SHEET
CLAY LAYER AT UNITS 21 - 23
FIRST LIFT

CLIENT England, Thms & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDT ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
90+45N 101+25E	C-3	90	24.4	P-1	4.7×10^{-9}	8-5/8	I-1	45.60	71	19	52
90+35N 101+60E	C-4	94	22.0	P-2	1.9×10^{-9}	7-5/8	I-2	66.69	87	24	53
90+20N 101+40E	C-5	92	23.3	* P-3	4.9×10^{-9}	14-5/8	I-3	44.43	70	20	50
90+20N 101+40E	C-5A	90	22.4	** P-3A	1.1×10^{-7}	7-1/2	I-3A	56.14	94	24	70
90+20N 101+40E	C-5B	91	24.2	P-3B	3.4×10^{-9}	7-1/2	I-3B	46.48	82	21	60
90+10N 101+25E	C-6	89	25.8	P-4	5.0×10^{-9}	8-1/4	I-4	47.62	69	18	51
90+05N 101+55E	C-7	91	23.4	* P-5	1.8×10^{-8}	12	I-5	44.01	62	19	43
90+05N 101+55E	C-7A	93	22.4	P-5A	2.4×10^{-8}	7-1/2	I-5A	44.93	75	20	55
90+45N 100+92E	N/A	N/A	N/A	N/A	N/A	8-1/4	N/A	N/A	N/A	N/A	N/A
89+73N 100+79E	C-46	91	23.2	P-14	2.9×10^{-9}	8	I-14	55.83	89	26	63
88+98N 100+87E	N/A	N/A	N/A	N/A	N/A	8	N/A	N/A	N/A	N/A	N/A
88+12N 100+90E	C-47	88	23.7	N/A	N/A	7-1/2	I-15	46.07	N/A	N/A	N/A
87+11N 100+84E	N/A	N/A	N/A	N/A	N/A	8	N/A	N/A	N/A	N/A	N/A

- NOTES
- Locations are based upon the local grid coordinates
 - Field Density Test Numbers are included for reference to test data in Appendix A
 - Sample Numbers are included for reference to hydraulic conductivity test data or the index test data on the reports included later in this section
 - Thickness is measured to the nearest 1/4 inch
These were trimmed due to excessively thick 1st lift and then resampled as P-3A and P-5A
This area was reworked and resampled as P-3B



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RESOURCES CREATING SOLUTIONS
3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173
Fax - (904) 398-1084

TEST DATA SHEET
CLAY LAYER AT UNITS 21 - 23
FIRST LIFT

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDT ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
87+61N 101+28E	C-48	90	25.6	P-15	5.0×10^{-8}	6-3/4	I-16	45.63	65	19	46
87+95N 101+40E	N/A	N/A	N/A	N/A	N/A	7	N/A	N/A	N/A	N/A	N/A
88+34N 101+55E	C-49	90	23.4	N/A	N/A	7-1/2	I-17	45.61	N/A	N/A	N/A
89+42N 101+40E	N/A	N/A	N/A	N/A	N/A	7-1/2	N/A	N/A	N/A	N/A	N/A
87+24N 102+33E	N/A	N/A	N/A	N/A	N/A	8	N/A	N/A	N/A	N/A	N/A
88+16N 101+99E	C-50	94	21.8	P-16	5.3×10^{-9}	7-1/2	I-18	45.11	68	20	48
88+94N 102+10E	N/A	N/A	N/A	N/A	N/A	7-1/4	N/A	N/A	N/A	N/A	N/A
89+83N 102+17E	C-51	94	20.5	N/A	N/A	6	I-19	36.51	N/A	N/A	N/A
90+18N 101+96E	N/A	N/A	N/A	N/A	N/A	6-3/4	N/A	N/A	N/A	N/A	N/A
90+55N 102+40E	C-52	89	23.3	P-17	5.0×10^{-9}	7-1/2	I-20	45.92	63	19	44
90+90N 101+46E	C-53	90	18.9	N/A	N/A	7-1/2	I-21	50.11	N/A	N/A	N/A

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 - These were trimmed due to excessively thick 1st lift and then resampled as P-3A and P-5A
- This area was reworked and resampled as P-3B



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Jacksonville, FL 32207
(904) 396-5173
Fax - (904) 398-1084

TEST DATA SHEET
CLAY LAYER AT UNITS 21 - 23
SECOND LIFT

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDT ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
90+40N 101+30E	C-8	93	22.5	P-6	3.5×10^{-9}	12-1/2	I-6	49.24	66	20	46
90+40N 101+60E	C-9	93	22.3	P-7	4.6×10^{-8}	12	I-7	45.88	68	18	50
90+25N 101+45E	C-10	91	23.4	* P-8	4.7×10^{-7}	13	I-8	46.79	79	19	60
90+25N 101+45E	C-10A	92	24.9	P-8A	5.2×10^{-9}	13	I-8A	46.03	64	19	45
90+05N 101+25E	C-11	89	24.5	P-9	4.3×10^{-9}	12-1/2	I-9	52.41	84	23	61
90+10N 101+60E	C-12	88	24.5	P-10	1.5×10^{-8}	12	I-10	47.18	73	18	55
90+58N 100+87E	C-59	89	25.3	P-21	4.1×10^{-9}	12-1/2	I-25	44.90	75	23	52
89+89N 100+93E	N/A	N/A	N/A	N/A	N/A	14	N/A	N/A	N/A	N/A	N/A
90+16N 102+19E	C-60	91	23.7	P-22	3.4×10^{-9}	12-1/2	I-28	46.51	73	20	53
89+30N 101+47E	N/A	N/A	N/A	N/A	N/A	13-1/2	N/A	N/A	N/A	N/A	N/A
89+23N 100+90E	C-61	90	24.0	N/A	N/A	14	I-26	50.57	N/A	N/A	N/A
89+78N 101+29E	C-62	92	24.6	N/A	N/A	12	I-27	44.88	N/A	N/A	N/A
90+70N 101+31E	N/A	N/A	N/A	N/A	N/A	14	N/A	N/A	N/A	N/A	N/A
89+39N 102+25E	N/A	N/A	N/A	N/A	N/A	13	N/A	N/A	N/A	N/A	N/A

NOTES 1 Locations are based upon the local grid coordinates

2 Field Density Test Numbers are included for reference to test data in Appendix A

3 Sample Numbers are included for reference to hydraulic conductivity test data or the index test data on the reports included later in this section

4 Thickness is measured to the nearest 1/4 inch

This area was reworked and retested as P-8A



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TEST DATA SHEET
CLAY LAYER AT UNITS 21 - 23
SECOND LIFT

CLIENT England, Thms & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDT ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
87+94N 100+92E	C-63	89	25.5	P-23	6.2×10^{-8}	14	I-29	44.19	60	21	39
87+25N 100+90E	N/A	N/A	N/A	N/A	N/A	13-1/2	N/A	N/A	N/A	N/A	N/A
87+12N 101+30E	C-64	91	23.5	N/A	N/A	12-1/2	I-30	46.57	N/A	N/A	N/A
87+49N 101+54E	N/A	N/A	N/A	N/A	N/A	14	N/A	N/A	N/A	N/A	N/A
88+07N 101+39E	C-65	88	25.6	P-24	3.1×10^{-9}	14	I-31	47.60	65	23	42
88+31N 101+97E	N/A	N/A	N/A	N/A	N/A	12-1/2	N/A	N/A	N/A	N/A	N/A
87+86N 102+31E	C-66	90	23.9	N/A	N/A	14	I-32	46.15	N/A	N/A	N/A
87+26N 102+16E	N/A	N/A	N/A	N/A	N/A	12	N/A	N/A	N/A	N/A	N/A

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 - Sample Numbers are included for reference to hydraulic conductivity test data or the index test data on the reports included later in this section
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 - This area was reworked and retested as P-8A



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TEST DATA SHEET
CLAY LAYER AT UNITS 1 - 4
FIRST LIFT

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDI ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
87+66N 125+99E	C-67	96	20.3	P-25	6.1×10^{-9}	8	I-33	52.06	55	19	36
87+03N 125+96E	N/A	N/A	N/A	N/A	N/A	6-1/2	N/A	N/A	N/A	N/A	N/A
87+05N 125+56E	C-68	93	23.4	N/A	N/A	7	I-34	44.70	N/A	N/A	N/A
87+18N 124+51E	C-73	88	26.6	P-26	1.4×10^{-8}	7-1/2	I-35	49.86	64	16	48
87+76N 124+81E	N/A	N/A	N/A	N/A	N/A	8-1/4	N/A	N/A	N/A	N/A	N/A
88+36N 124+62E	C-74	91	25.0	N/A	N/A	8	I-36	47.81	N/A	N/A	N/A
88+00N 123+84E	C-75	88	28.8	P-27	2.5×10^{-8}	7	I-37	46.92	66	17	49
87+15N 124+01E	N/A	N/A	N/A	N/A	N/A	7-1/2	N/A	N/A	N/A	N/A	N/A
91+95N 124+00E	N/A	N/A	N/A	N/A	N/A	7	N/A	N/A	N/A	N/A	N/A
91+50N 123+60E	C-89	93	22.7	P-33	2.3×10^{-8}	8	I-46	45.32	75	19	56
90+39N 124+06E	N/A	N/A	N/A	N/A	N/A	6-1/2	N/A	N/A	N/A	N/A	N/A
90+12N 123+87E	C-92	98	20.2	N/A	N/A	7-1/2	I-47	44.09	N/A	N/A	N/A
89+98N 124+01E	N/A	N/A	N/A	N/A	N/A	6	N/A	N/A	N/A	N/A	N/A
89+32N 123+74E	C-93	95	21.2	N/A	N/A	7	I-48	44.21	N/A	N/A	N/A

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TEST DATA SHEET
CLAY LAYER AT UNITS 1 - 4
SECOND LIFT

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FD ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
86+95N 126+11E	C-76	89	24.8	N/A	N/A	13	I-38	46.73	N/A	N/A	N/A
87+61N 126+03E	N/A	N/A	N/A	N/A	N/A	13	N/A	N/A	N/A	N/A	N/A
87+80N 125+53E	C-77	90	22.8	P-28	1.2x10 ⁻⁸	12	I-39	45.43	70	21	49
87+00N 125+29E	N/A	N/A	N/A	N/A	N/A	12-1/2	N/A	N/A	N/A	N/A	N/A
87+07N 124+73E	C-78	88	26.3	N/A	N/A	12	I-40	44.83	N/A	N/A	N/A
87+63N 124+52E	N/A	N/A	N/A	N/A	N/A	13-1/2	N/A	N/A	N/A	N/A	N/A
88+12N 124+73E	C-79	88	24.4	P-29	2.7x10 ⁻⁸	13	I-41	46.10	79	21	58
87+33N 124+00E	C-80	92	24.4	N/A	N/A	13	I-42	50.97	N/A	N/A	N/A
88+02N 123+91E	N/A	N/A	N/A	N/A	N/A	13	N/A	N/A	N/A	N/A	N/A
87+70N 123+83E	C-81	94	19.9	P-30	4.8x10 ⁻⁸	16	I-43	45.63	60	20	40
91+57N 124+04E	C-102	99	15.3	N/A	N/A	13-1/2	I-49	42.96	N/A	N/A	N/A
90+24N 124+02E	N/A	N/A	N/A	N/A	N/A	13	N/A	N/A	N/A	N/A	N/A
90+92N 123+68E	C-103	92	19.9	P-34	* 2.5x10 ⁻⁷	N/A	I-50	43.73	59	17	42
90+95N 123+68E	C-103A	93	23.2	P-34A	1.1x10 ⁻⁸	14-1/2	N/A	N/A	N/A	N/A	N/A
89+75N 123+73E	N/A	N/A	N/A	N/A	N/A	14	N/A	N/A	N/A	N/A	N/A
89+37N 124+04E	C-104	96	18.0	N/A	N/A	13	I-51	39.77	N/A	N/A	N/A

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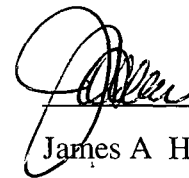
This area was reworked and retested as P-34A

4. Top Soil Layer

TOP SOIL LAYER

The topsoil material was obtained from an off-site source. The location and results of the thickness measurements, organic content, and pH for the top soil (vegetative cover) are included in this section.

I have reviewed the documentation and test data of the Quality Control Monitor and based upon that data, find that the construction is substantially in accordance with the Quality Assurance / Quality Control Plan.



James A. Horton, P.E.
Registered, FL 23315

7/16/12



LAW

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3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173
Fax - (904) 398-1084

TOP SOIL LAYER DATA SHEET UNITS 21 - 23

Client England, Thims & Miller
Project Trail Ridge Landfill Incremental Closure
LAW Project No 40562-1-4214

Date	Location Station	Depth or Elevation	Thickness (in)
5/24/02	87+26N and 102+02E	Finished Vegetative Cover	30
5/24/02	88+25N and 102+22E	Finished Vegetative Cover	30
5/24/02	87+98N and 101+32E	Finished Vegetative Cover	26
5/24/02	87+92N and 100+85E	Finished Vegetative Cover	40
5/24/02	89+98N and 102+10E	Finished Vegetative Cover	24
5/24/02	89+30N and 101+59E	Finished Vegetative Cover	24
5/24/02	90+46N and 101+65E	Finished Vegetative Cover	26
5/24/02	89+16N and 100+84E	Finished Vegetative Cover	38
6/5/02	86+92N and 101+80E	Finished Vegetative Cover	33
6/5/02	86+92N and 101+88E	Finished Vegetative Cover	27
6/5/02	86+92N and 102+55E	Finished Vegetative Cover	36
6/5/02	86+92N and 102+63E	Finished Vegetative Cover	28
6/5/02	88+52N and 101+75E	Finished Vegetative Cover	26
6/5/02	88+52N and 101+83E	Finished Vegetative Cover	24
6/5/02	88+52N and 102+50E	Finished Vegetative Cover	33
6/5/02	88+52N and 102+58E	Finished Vegetative Cover	29
6/5/02	88+82N and 101+00E	Finished Vegetative Cover	35
6/5/02	88+82N and 101+08E	Finished Vegetative Cover	26
6/5/02	88+82N and 101+75E	Finished Vegetative Cover	26
6/5/02	88+82N and 101+83E	Finished Vegetative Cover	24
6/5/02	88+82N and 102+50E	Finished Vegetative Cover	32
6/5/02	88+82N and 102+58E	Finished Vegetative Cover	28
6/5/02	90+88N and 100+80E	Finished Vegetative Cover	26
6/5/02	90+88N and 101+06E	Finished Vegetative Cover	28
6/5/02	90+88N and 101+14E	Finished Vegetative Cover	24
6/5/02	90+88N and 101+81E	Finished Vegetative Cover	31
6/5/02	90+88N and 101+89E	Finished Vegetative Cover	25
6/5/02	90+88N and 102+56E	Finished Vegetative Cover	32
6/5/02	90+88N and 102+64E	Finished Vegetative Cover	28



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TOP SOIL LAYER DATA SHEET
UNITS 1 - 4

Client England, Thims & Miller
Project Trail Ridge Landfill Incremental Closure
LAW Project No 40562-1-4214

Date	Location Station	Depth or Elevation	Thickness (in)
6/05/02	91+40N and 123+61E	Finished Vegetative Cover	24
6/05/02	90+15N and 124+06E	Finished Vegetative Cover	24
6/05/02	88+56N and 123+76E	Finished Vegetative Cover	26
6/05/02	87+60N and 124+02E	Finished Vegetative Cover	27
6/05/02	88+30N and 124+65E	Finished Vegetative Cover	27
6/05/02	87+03N and 125+55E	Finished Vegetative Cover	24
6/05/02	87+70N and 125+96E	Finished Vegetative Cover	28
6/05/02	87+78N and 124+80E	Finished Vegetative Cover	26
6/06/02	88+95N and 123+60E	Finished Vegetative Cover	24
6/06/02	88+95N and 123+52E	Finished Vegetative Cover	25
6/13/02	92+15N and 123+43E	Finished Vegetative Cover	36
6/13/02	92+15N and 123+50E	Finished Vegetative Cover	36
6/13/02	92+15N and 124+18E	Finished Vegetative Cover	25
6/13/02	91+85N and 124+18E	Finished Vegetative Cover	30
6/13/02	91+85N and 123+44E	Finished Vegetative Cover	24
6/13/02	91+85N and 123+51E	Finished Vegetative Cover	24
6/13/02	89+10N and 123+52E	Finished Vegetative Cover	24
6/13/02	89+10N and 123+59E	Finished Vegetative Cover	28
6/13/02	89+10N and 124+21E	Finished Vegetative Cover	30
6/13/02	88+65N and 123+60E	Finished Vegetative Cover	28
6/13/02	88+65N and 123+52E	Finished Vegetative Cover	24
6/13/02	88+50N and 123+52E	Finished Vegetative Cover	30
6/13/02	88+50N and 123+59E	Finished Vegetative Cover	26
6/13/02	88+30N and 123+51E	Finished Vegetative Cover	26
6/13/02	88+30N and 123+59E	Finished Vegetative Cover	32
6/13/02	87+90N and 123+57E	Finished Vegetative Cover	28
6/13/02	87+90N and 123+50E	Finished Vegetative Cover	26
6/13/02	86+90N and 123+55E	Finished Vegetative Cover	28
6/13/02	86+90N and 123+48E	Finished Vegetative Cover	33



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TOP SOIL LAYER DATA SHEET

Client England, Thims & Miller
Project Trail Ridge Landfill Incremental Closure
LAW Project No 40562-1-4214

Date	Sample No.	Location	pH	% Organics
1/09/02	1	On-Site Stockpile	4.1	1.78
3/15/02	2 *	On-Site Stockpile	5.05	N/A

* Retest of Organic Content Sample No. 1



REPORT OF SOIL TESTING

Project Trailridge Landfill

Law Project Number 40562-1-4214

Client England Thims & Miller

Date January 9, 2002

As requested, Law Engineering has completed testing of a soil sample obtained by our field representative on January 4, 2002. The sample was tested for pH in general accordance with ASTM E-70, and for organic content in general accordance with ASTM D 2974. The results are outlined below.

Sample Identification	pH Value	Percent Organic (Loss on Ignition)
Topsoil-1	4.1	1.78%

Respectfully Submitted

 1-14-02

Michael B. Woodward, P.E.



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RESOURCES CREATING SOLUTIONS

REPORT OF SOIL TESTING

Project Trailridge Landfill

Law Project Number 40562-1-4214

Client England Thims & Miller

Date March 15, 2002

As requested, Law Engineering has completed testing of a soil sample obtained by our field representative on March 14, 2002. The sample was tested for pH in general accordance with ASTM D-4972. The results are outlined below.

Sample Identification	pH Value
Topsoil-2	5.05

Respectfully Submitted

MB Woodward 3/24/02

Michael B. Woodward, P.E.

5. Downcomer Pipes and Underdrain Sand

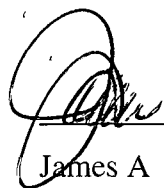
DOWNCOMER PIPES AND UNDERDRAIN FILTER SAND

The downcomer pipes were installed and encased with clay material obtained from the Gaskins borrow source operated by R B Baker Construction. Information concerning the borrow source is included in the section entitled Compacted Clay Layer.

The locations and results of the thickness, hydraulic conductivity, percent fines, Atterberg limits, falling head permeability test, and moisture-density relationship for the clay layer under the downcomers are included in this section.

The grain size distribution (for Pre-Qualification) and the constant head permeability test results for the underdrain sand are included in this section.

I have reviewed the documentation and test data of the Quality Control Monitor and based upon that data, find that the construction is substantially in accordance with the Quality Assurance / Quality Control Plan.

 7/1/42
James A. Horton, P.E.

Registered, FL 23315

Downcomer Pipes



LAW

RESOURCES CREATING SOLUTIONS

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173
Fax - (904) 398-1084

**INITIAL COVER DATA SHEET
DOWNCOMER D-2
(ACROSS SIDE SLOPES UNITS 21 - 23)**

Client England, Thims & Miller
Project Trail Ridge Landfill Incremental Closure
LAW Project No 40562-1-4214

Date	Field Density Test No	Location Station	Depth or Elevation	Thickness (In)	Density (% Compaction)
2/22/02	C-37	100+90E and 88+67N	6" below top of finished initial cover	8	90
2/22/02	C-38	101+65E and 88+67N	6" below top of finished initial cover	7-1/2	91
2/22/02	C-39	102+40E and 88+67N	6" below top of finished initial cover	6	90
2/22/02	C-40	101+65E and 88+67N	Top of finished initial cover	13-1/4	91
2/22/02	C-41	102+40E and 88+67N	Top of finished initial cover	12-3/4	92
2/26/02	C-42	100+90E and 88+67N	Top of finished initial cover	15-1/4	91



LAW

RESOURCES CREATING SOLUTIONS

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173
Fax - (904) 398-1084

**INITIAL COVER DATA SHEET
DOWNCOMER D-24
(ACROSS SIDE SLOPE UNIT 4)**

Client England, Thims & Miller
Project Trail Ridge Landfill Incremental Closure
LAW Project No 40562-1-4214

Date	Field Density Test No	Location Station	Depth or Elevation	Thickness (In)	Density (% Compaction)
4/10/02	C-82	Downcomer D-24, Unit 4 88+80N and 124+00E	Top of finished initial cover	13	89
4/10/02	C-82A	Downcomer D-24, Unit 4 88+80N and 124+00E	Top of finished initial cover	12-1/2	91

TEST DATA SHEET
CLAY LAYER AT DOWNCOMER D-2
(ACROSS SIDE SLOPES UNITS 21 – 23)
FIRST LIFT

CLIENT England, Thims & Miller, Inc
 PROJECT Trail Ridge Landfill Incremental Closure
 PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDT ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
88+67N 100+95E	C-43	93	22.8	P-11	4.6×10^{-9}	7-3/4	I-11	45.20	71	23	48
88+67N 101+65E	C-44	94	22.2	P-12	5.9×10^{-9}	7-1/2	I-12	44.20	72	22	50
88+67N 102+40E	C-45	91	22.9	P-13	1.3×10^{-8}	7-3/4	I-13	48.31	63	20	43
88+67N 100+75E	N/A	N/A	N/A	N/A	N/A	7-1/2	N/A	N/A	N/A	N/A	N/A
88+67N 101+35E	N/A	N/A	N/A	N/A	N/A	7	N/A	N/A	N/A	N/A	N/A
88+67N 102+70E	N/A	N/A	N/A	N/A	N/A	7-3/4	N/A	N/A	N/A	N/A	N/A

- NOTES
- Locations are based upon the local grid coordinates
 - Field Density Test Numbers are included for reference to test data in Appendix A
 - Sample Numbers are included for reference to hydraulic conductivity test data or the index test data on the reports included later in this section
 - Thickness is measured to the nearest 1/4 inch



LAW

RESOURCES CREATING SOLUTIONS

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Jacksonville, FL 32207

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Fax - (904) 398-1084

TEST DATA SHEET
CLAY LAYER AT DOWNCOMER D-2
(ACROSS SIDE SLOPES UNITS 21 - 23)
SECOND LIFT

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDT ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
88+67N 101+00E	C-56	85	29.5	N/A	N/A	14	N/A	N/A	N/A	N/A	N/A
88+67N 101+00E	C-56A	88	24.2	P-18	9.9×10^{-9}	14	I-22	57.73	71	21	50
88+67N 101+75E	C-57	91	25.1	P-19	3.6×10^{-9}	15	I-23	45.67	75	21	54
88+67N 102+50E	C-58	89	25.3	P-20	3.7×10^{-9}	15-1/2	I-24	44.87	69	21	48
88+67N 100+85E	N/A	N/A	N/A	N/A	N/A	13-1/2	N/A	N/A	N/A	N/A	N/A
88+67N 101+35E	N/A	N/A	N/A	N/A	N/A	13-3/4	N/A	N/A	N/A	N/A	N/A
88+67N 102+77E	N/A	N/A	N/A	N/A	N/A	13-1/2	N/A	N/A	N/A	N/A	N/A

NOTES 1 Locations are based upon the local grid coordinates

2 Field Density Test Numbers are included for reference to test data in Appendix A

3 Sample Numbers are included for reference to hydraulic conductivity test data or the index test data on the reports included later in this section

4 Thickness is measured to the nearest 1/4 inch



LAW

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Fax - (904) 398-1084

TEST DATA SHEET
CLAY LAYER AT DOWNCOMER D-24
(ACROSS SIDE SLOPE UNIT 4)
FIRST LIFT

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDT ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
88+80N 123+90E	C-86	88	28.1	P-31	4.5×10^{-9}	8	I-44	45.10	70	20	50
88+80N 124+40E	N/A	N/A	N/A	N/A	N/A	7-1/2	N/A	N/A	N/A	N/A	N/A

- NOTES
- Locations are based upon the local grid coordinates
 - Field Density Test Numbers are included for reference to test data in Appendix A
 - Sample Numbers are included for reference to hydraulic conductivity test data or the index test data on the reports included later in this section
 - Thickness is measured to the nearest 1/4 inch



LAW

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Fax - (904) 398-1084

TEST DATA SHEET
CLAY LAYER AT DOWNCOMER D-24
(ACROSS SIDE SLOPE UNIT 4)
SECOND LIFT

CLIENT England, Thms & Miller, Inc
PROJECT Trail Ridge Landfill Incremental Closure
PROJECT NO 40562-1-4214

LOCATION ¹ BY STATION	FDT ² NO	PERCENT COMPACTION	MOISTURE CONTENT	PERMEABILITY SAMPLE NO	COEFFICIENT OF PERMEABILITY (cm/sec)	THICKNESS ⁴ (IN)	INDEX ³ SAMPLE NUMBER	PERCENT PASSING #200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
88+80N 123+80E	C-87	92	28.7	P-32	4.7×10^{-9}	14-1/2	I-45	46.00	78	19	59
88+80N 124+10E	N/A	N/A	N/A	N/A	N/A	15-1/2	N/A	N/A	N/A	N/A	N/A

- NOTES
- 1 Locations are based upon the local grid coordinates
 - 2 Field Density Test Numbers are included for reference to test data in Appendix A
 - 3 Sample Numbers are included for reference to hydraulic conductivity test data or the index test data on the reports included later in this section
 - 4 Thickness is measured to the nearest 1/4 inch

Underdrain Sand



LAW

RESOURCES CREATING SOLUTIONS

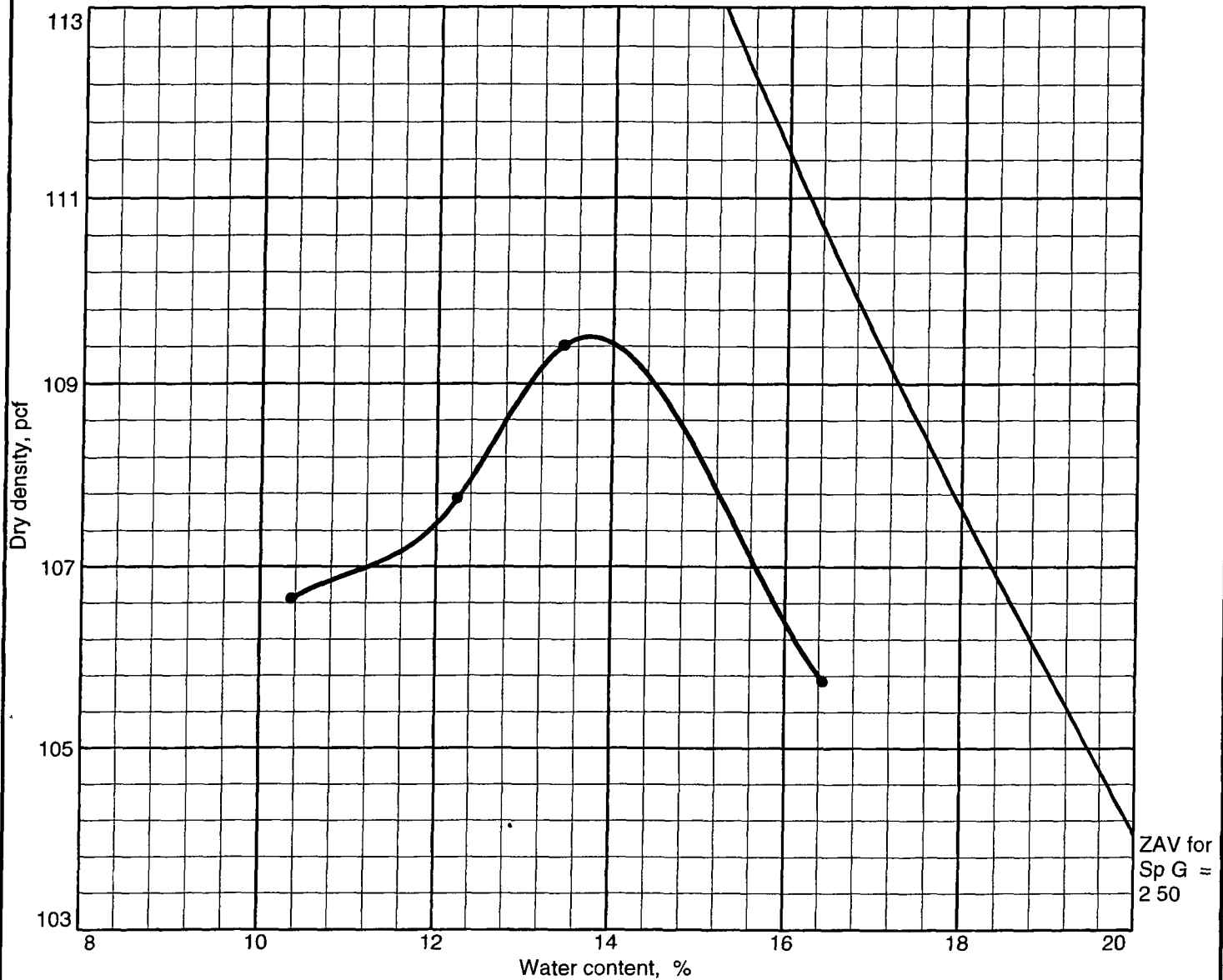
3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173
Fax - (904) 398-1084

REPORT OF CONSTANT HEAD PERMEABILITY TESTING

CLIENT England, Thims & Miller, Inc
PROJECT Trailridge Landfill Incremental Closure
LAW PROJECT NO 40562-1-4214

Sample No (Load No)	1	2	3	4	5	6
Location of Samples	On-Site Stockpile	On-Site Stockpile	On-Site Stockpile	On-Site Stockpile	On-Site Stockpile	On-Site Stockpile
Permeameter No	1	4	4	4	4	2
Max Dry Density of Sample (lbs/cu ft)	108.6	108.6	108.6	108.6	108.6	108.6
Weight Permeameter & Sample (gr)	1241.1	1239.55	1223.14	1217.06	1203.13	1211.76
Weight Permeameter (gr)	652.1	657.5	657.5	657.84	653.13	655.35
Permeameter Volume (cubic ft)	0.0104	0.0103	0.0103	0.0103	0.0103	0.0104
Sample Wt (gr)	589	582.05	565.64	559.22	550	556.41
Sample Wet Density (lbs/cu ft)	124.9	124.6	121.1	119.7	117.7	118.0
Wet Weight	269.94	441.47	500.00	372.14	327.06	408.06
Dry Weight	236.06	387.78	449.18	337.11	303.44	371.85
Sample Moisture Content	14.4	13.8	11.3	10.4	7.8	9.7
Sample Dry Density (lbs/cu ft)	109.2	109.4	108.8	108.4	109.2	107.5
Percent Compaction (max 100 %)	101	101	100	100	101	99
Area of Sample (sq cm)	21.5	21.09	21.09	21.09	21.09	21.09
Water Discharge (ml)	7.0	40.0	19.0	29.0	28.0	45.0
Time of Discharge (sec)	60	60.0	60.0	60.0	60.0	60.0
Distance Between Manometers (in)	2.52	2.5	2.5	2.5	2.5	2.43
Difference in Head (in)	1.2	2	2.2	2.5	4.0	4.0
Coefficient of Permeability	1.1E-02	4.0E-02	1.7E-02	2.3E-02	1.4E-02	2.2E-02

COMPACTION TEST REPORT



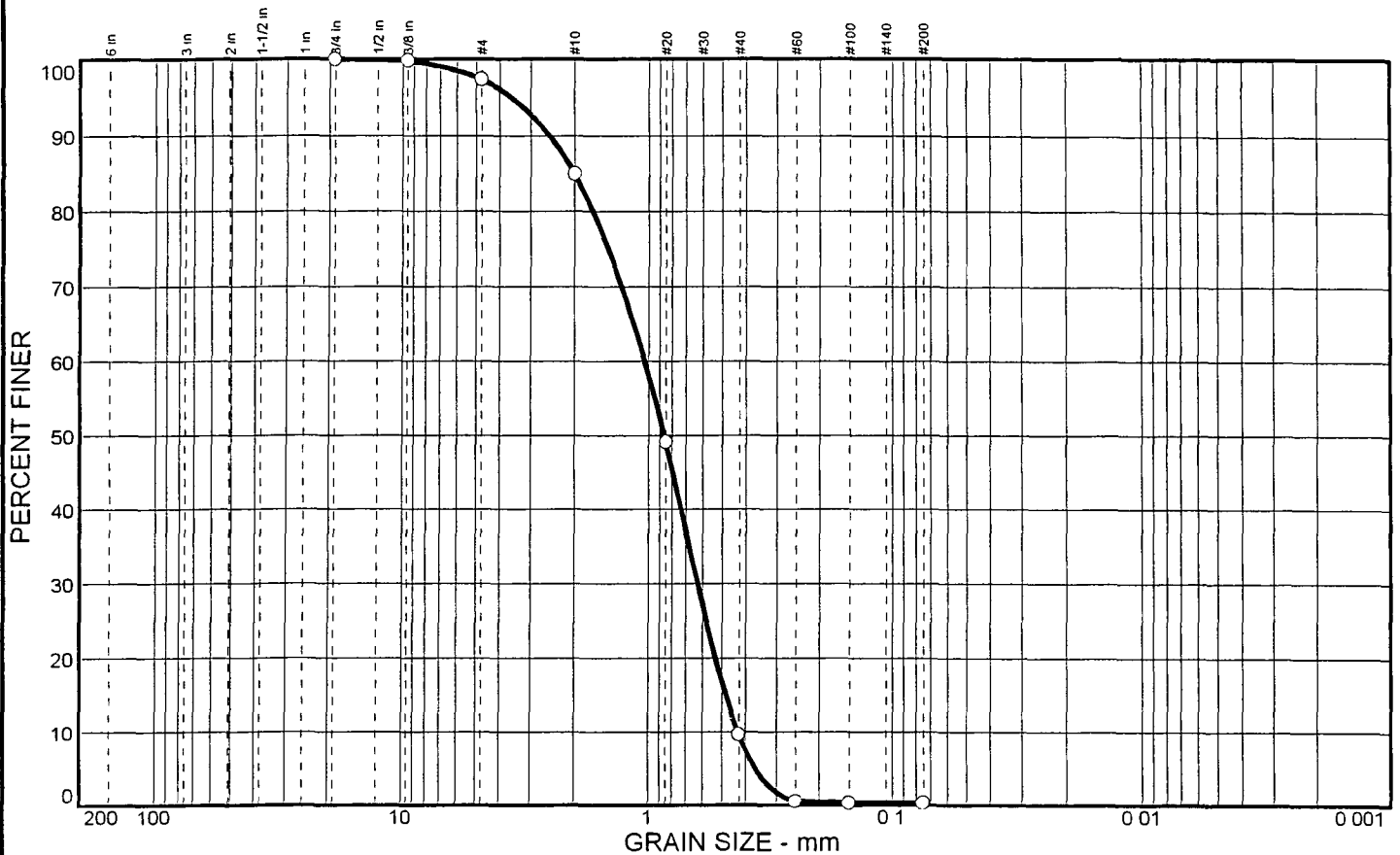
Test specification ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SP	A-1-b					2.6	0.3

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 109.5 pcf Optimum moisture = 13.7 %		Light Gray Coarse to Fine SAND
Project No. Client: England Thims & Miller Project: Trailridge Landfill Closure Construction Project No. 40562-1-4214 ● Source: Proposed Drainage Sand Sample No.: Proctor No. 6		Remarks: <

Michael B. Woodward 3/14/02 Plate
Michael B. Woodward, P.E.

Grain Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	2.6	97.1	0.3		SP	A-1-b		

SIEVE inches size	PERCENT FINER		
	○		
75	100.0		
375	99.8		
<div></div>			
GRAIN SIZE			
D ₆₀	1.04		
D ₃₀	0.626		
D ₁₀	0.429		
<div></div>			
COEFFICIENTS			
C _c	0.88		
C _u	2.41		

SIEVE number size	PERCENT FINER		
	○		
#4	97.4		
#10	84.9		
#20	49.1		
#40	9.6		
#60	0.5		
#100	0.3		
#200	0.3		

SOIL DESCRIPTION
 ○ Light Gray Coarse to Fine SAND

REMARKS
 ○

○ Source Proposed Drainage Sand

Sample No Proctor No 6

**Law Engineering and
Environmental Services, Inc.**

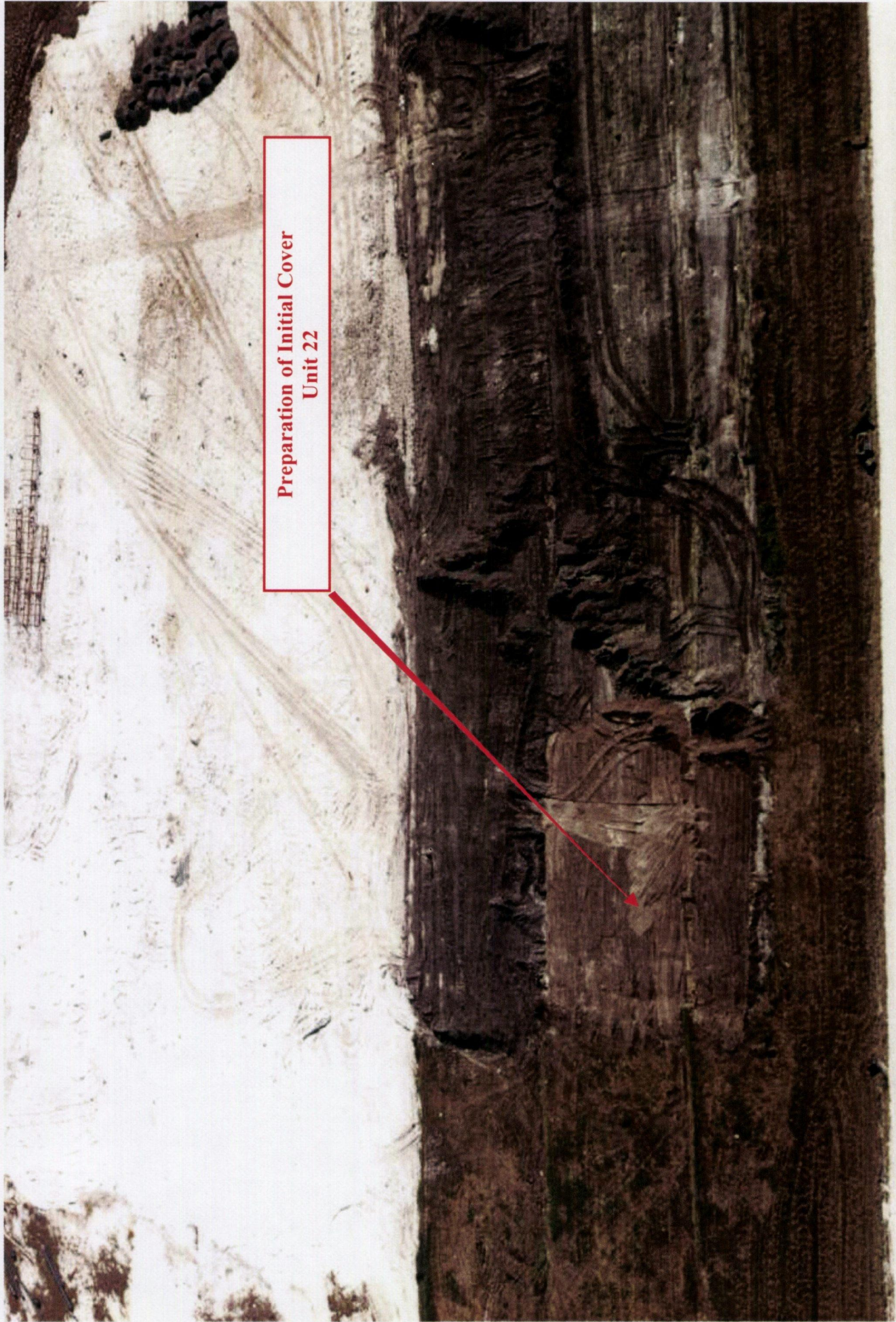
Client England Thms & Miller
 Project Trailridge Landfill Closure Construction
 Project No 40562-1-4214
 Project No *M. J. W. Thms* 6/20/02 Plate

6. Construction Photographs



Initial Cover Preparation
Units 1-4

December 21, 2001 – Trail Ridge Landfill Incremental Closure (Units 1-4) (View looking west)

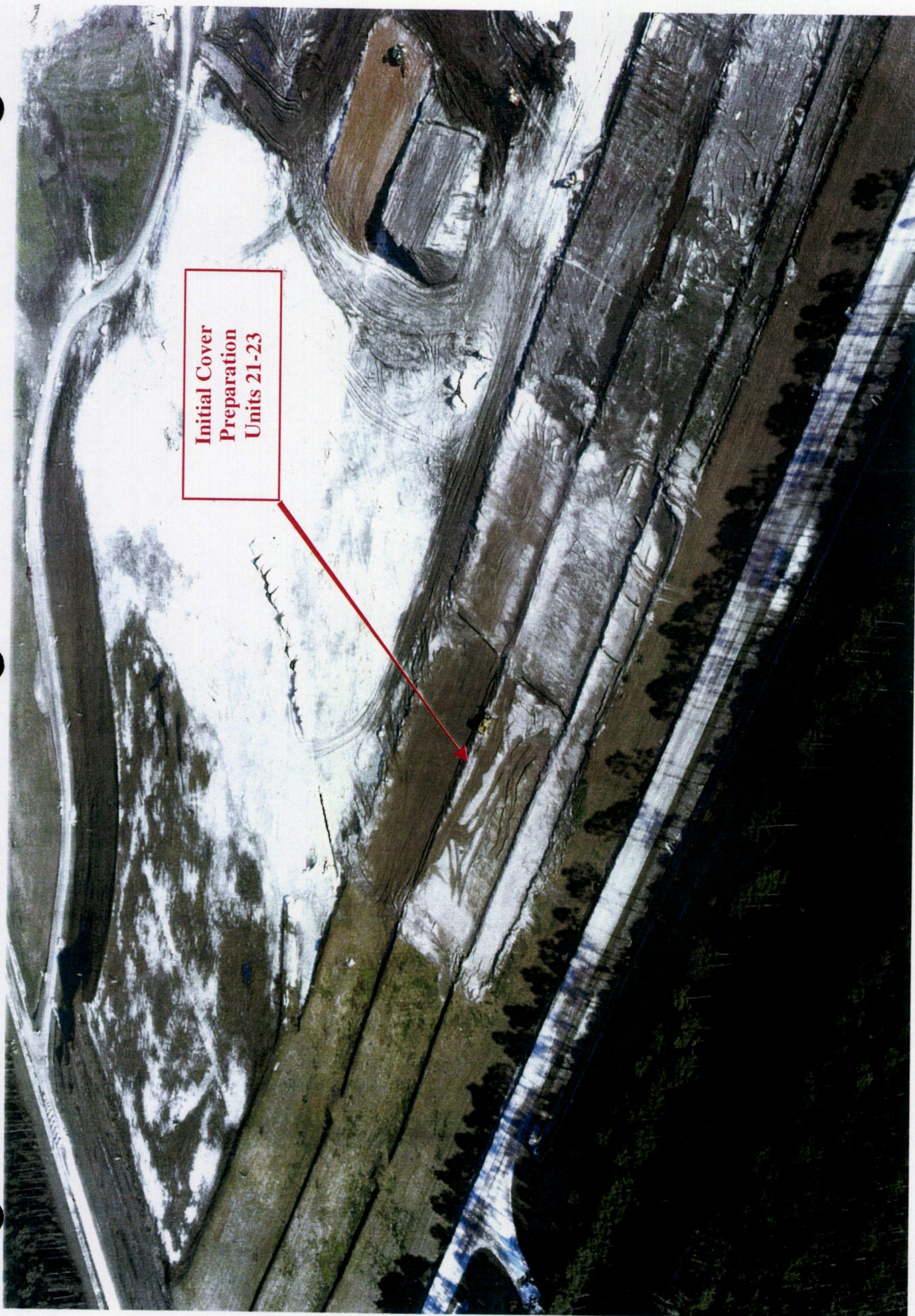


Preparation of Initial Cover
Unit 22

December 21, 2001 – Trail Ridge Landfill Incremental Closure (Units 21-23) (View looking east)



January 31, 2002 - Trail Ridge Landfill Incremental Closure (Units 1-4) (View looking west)



January 31, 2002 – Trail Ridge Landfill Incremental Closure (Units 21-23) (View looking east)



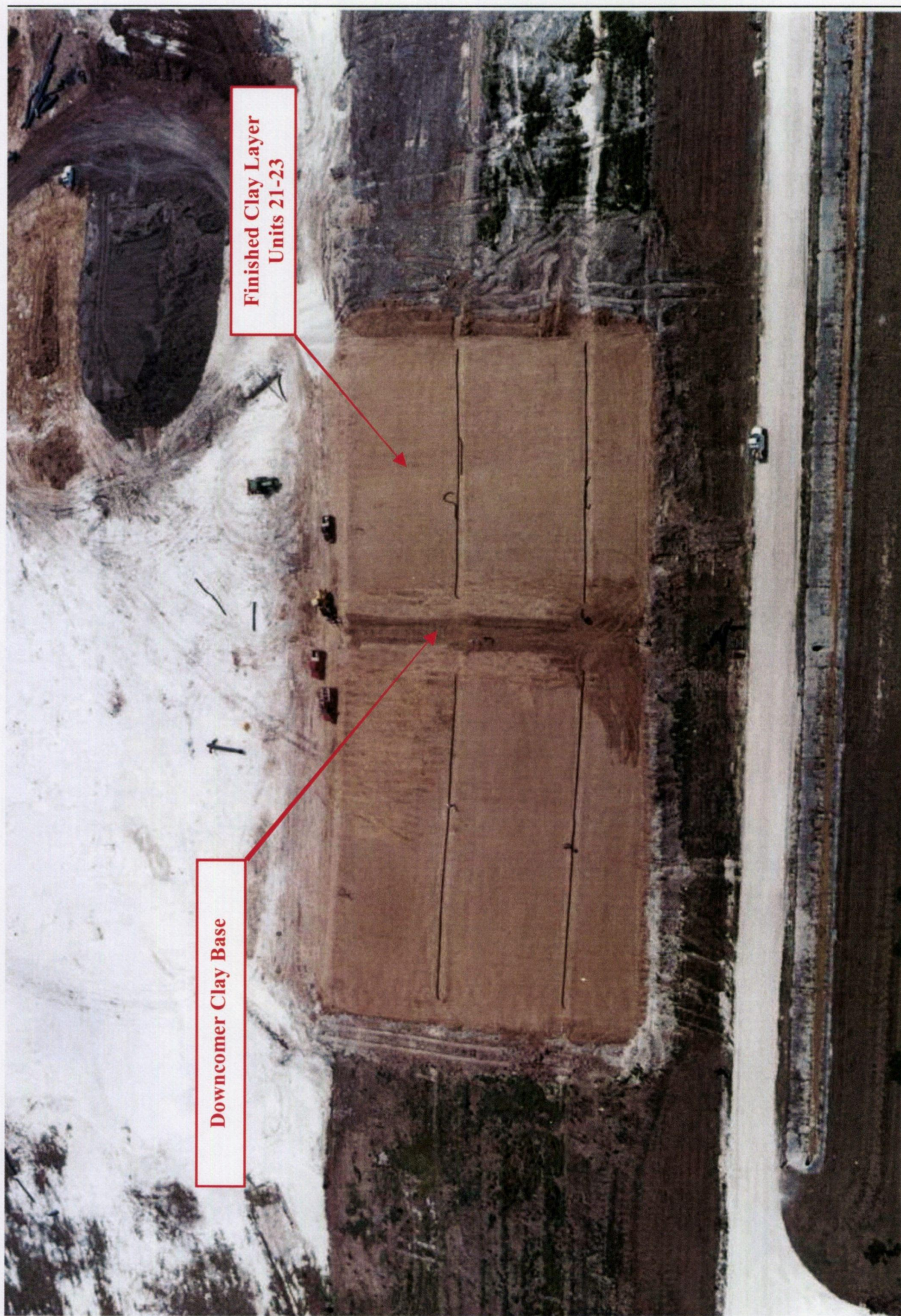
February 25, 2002 – Trail Ridge Landfill Incremental Closure (Units 1-4) (View looking west)



February 25, 2002 – Trail Ridge Landfill Incremental Closure (Units 21-23) (View looking east)



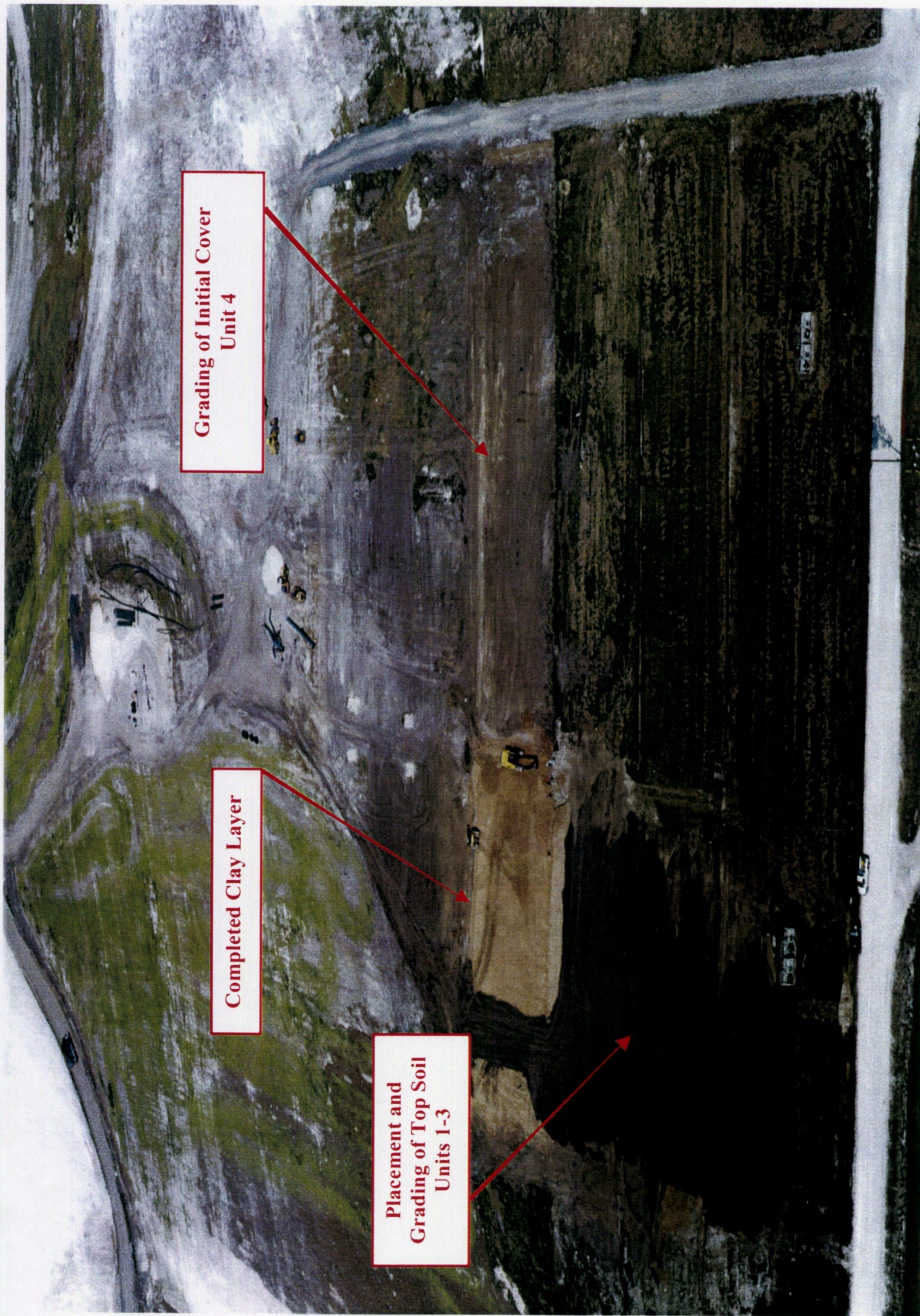
March 25, 2002 – Trail Ridge Landfill Incremental Closure (Units 1-4) (View looking west)



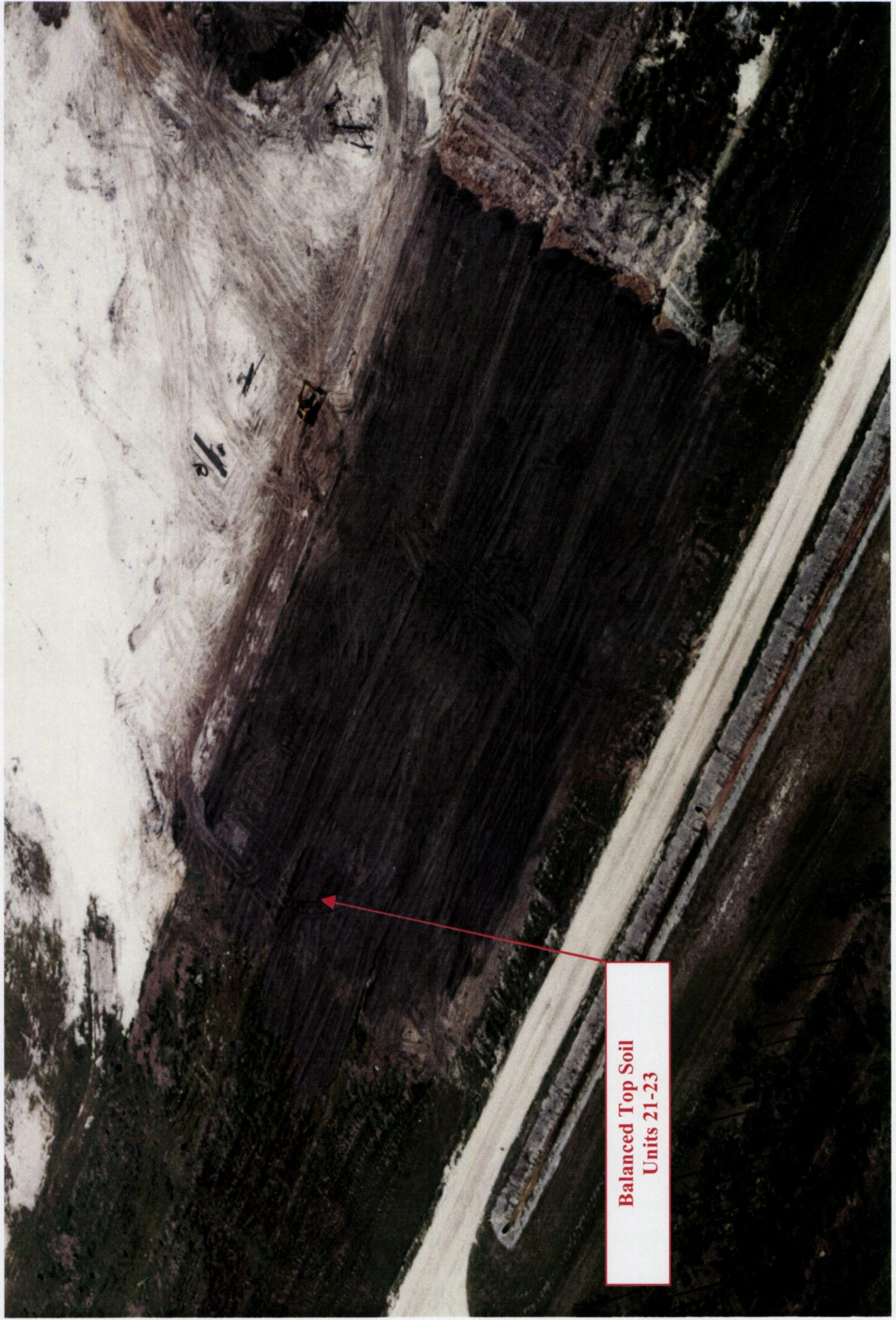
Downcomer Clay Base

Finished Clay Layer
Units 21-23

March 25, 2002 – Trail Ridge Landfill Incremental Closure (Units 21-23) (View looking east)

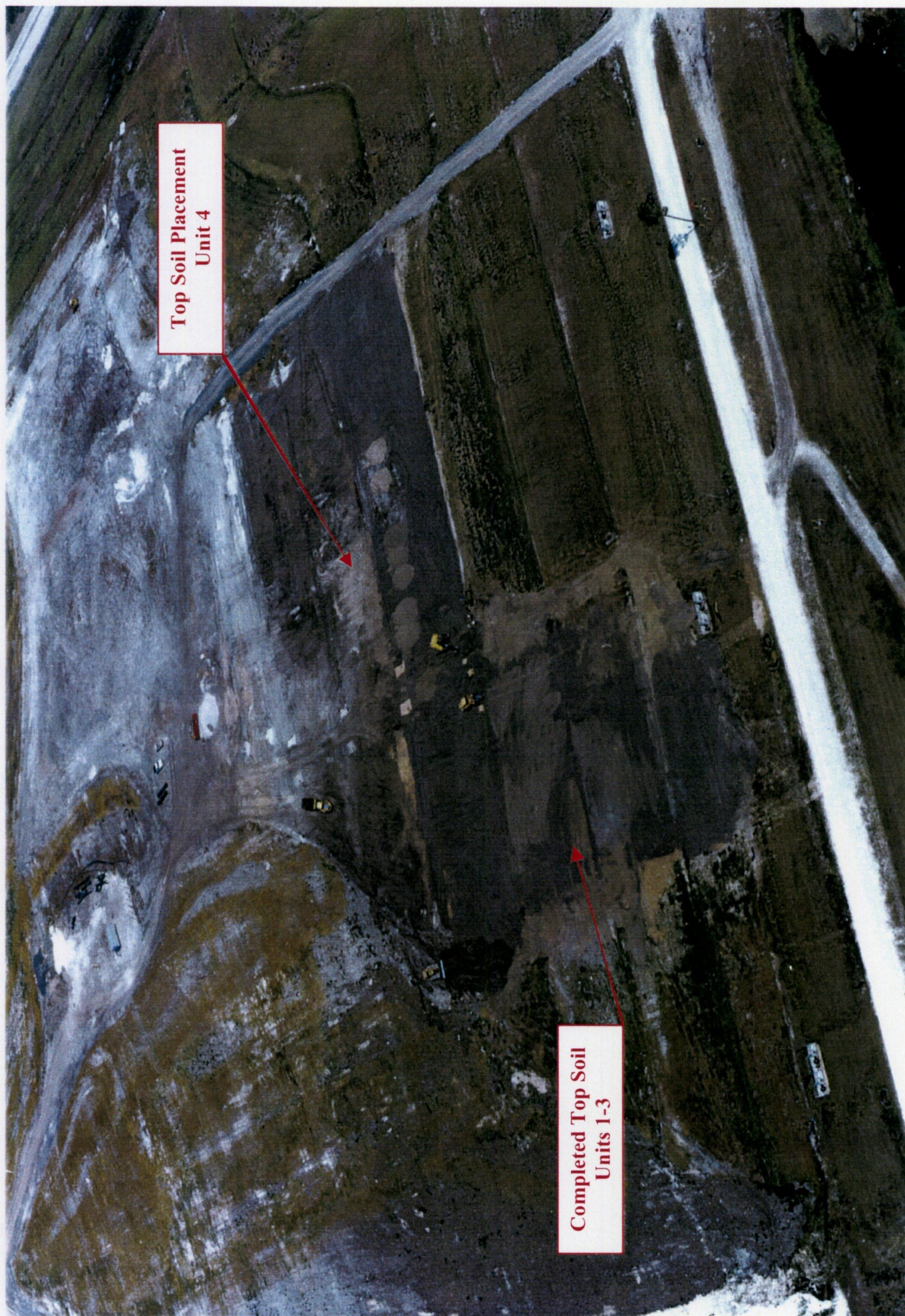


April 24, 2002 – Trail Ridge Landfill Incremental Closure (Units 1-4) (View looking west)

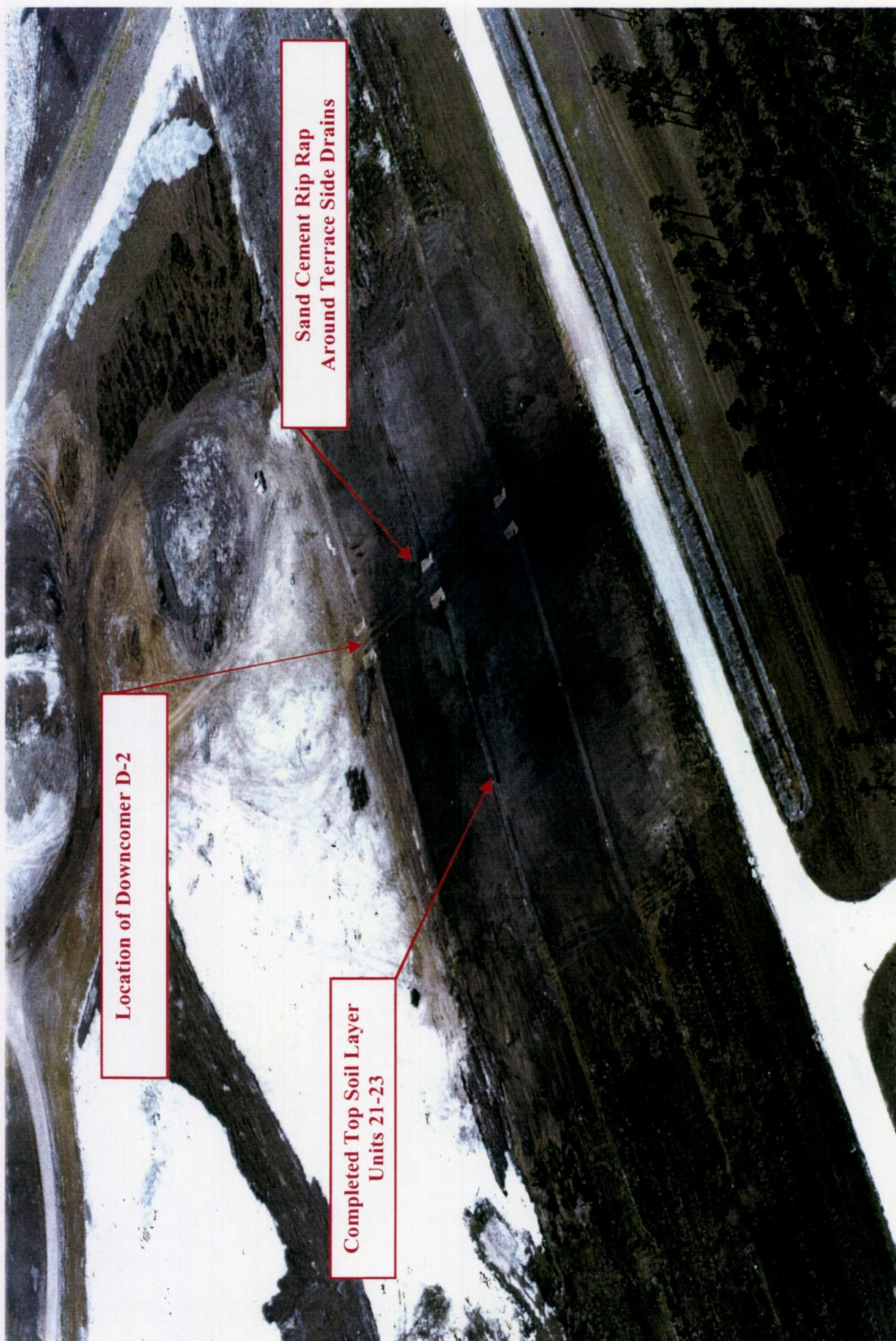


Balanced Top Soil
Units 21-23

April 24, 2002 – Trail Ridge Landfill Incremental Closure (Units 21-23) (View looking east)



May 31, 2002 – Trail Ridge Landfill Incremental Closure (Units 1-4) (View looking west)



May 31, 2002 Trail Ridge Landfill Incremental Closure (Units 21-23) (View looking east)



June 25, 2002 – Trail Ridge Landfill Incremental Closure (Units 1-4) (View looking west)



June 25, 2002 – Trail Ridge Landfill Incremental Closure (Units 21-23) (View looking east)

7. Weekly Progress Meeting Minutes



**TRAIL RIDGE LANDFILL
INCREMENTAL CLOSURE AND LANDFILL
GAS SYSTEM EXPANSION
CONSTRUCTION MEETING MINUTES**

Principals

James E. England, P.E., CEO
Douglas C. Miller, P.E., President
N. Hugh Mathews, P.E., Exec. VP
Joseph A. Tarver, Exec. VP
Juanitta Bader Clem, P.E., VP
Scott A. Wild, P.E., PSM, VP
Samuel R. Crissinger, CPA, VP
Robert A. Mizell, Jr., P.E., VP
Bryan R. Stewart, VP

DATE: May 21, 2002
2:00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:	Jeff Marshall	R B Baker Construction (Baker)
	Terry Canning	GSE
	John Kiwade	Plastic Fusion
	John Tully	LAW Engineering (LAW)
	Cliff Cosby	LAW
	Juanitta Clem	England, Thims & Miller, Inc. (ETM)
	William Davidson	ETM
	Nicolas Mousa	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Side Slope Units 1-4 – Construction of the remaining underdrain will be complete this week

Side Slope Units 21-23 – Placement of the topsoil is expected to be complete this week

Gas System Expansion – The gas system expansion tie-in on the western slope is complete and the tie-in on the eastern slope will be complete this week

II. LANDFILL GAS SYSTEM EXPANSION

As-Builts – Jeff Marshall stated that the as-builts are being revised by the surveyor and revised as-built drawings are expected within 2 weeks. Juanitta Clem expressed her concern that the as-builts may delay the submittal of the certification documents.

Damaged Wellhead – Jeff Marshall stated that the damaged wellhead will be replaced and not repaired. Jeff Marshall will follow up on the replacement schedule.

William Davidson stated that Baker must provide the 3 feet of cover over the gas headers and laterals and the as-builts must be revised to reflect the additional cover. Jeff Marshall acknowledged.

The tie-in of the 6" header pipe from Remote Well RW-7 to the 8" leachate cleanout riser was discussed and it was agreed that Plastic Fusion will use a tee fitting (with electrofusion welding) to accomplish the tie-in

III. INCREMENTAL CLOSURE

Grassing – Jeff Marshall stated that grassing is scheduled next week and will start on the western slope. All disturbed areas which were grassed prior to the start of the construction, must be seeded or sodded. Jeff Marshall took note. Grassing was discussed further and it was agreed that ETM will provide Baker with a plan of the areas where grassing is required.

Topsoil – Jeff Marshall stated that Baker will complete grading the western slope this week. Juanitta Clem stated that thickness checks will be conducted after grading and before as-builts.

Terrace – Juanitta Clem stated that the minimum 1% slope and 2.5' depth requirements for the terraces must be maintained. Jeff Marshall took note.

As-Builts – William Davidson stated that if Baker completes grading of the topsoil on the western slope, as-builts may be taken on Monday (May 27, 2002).

Side Slope Units 1-4 – Jeff Marshall stated that construction of the remaining 150 feet of underdrain will be complete this week.

Sand Cement Rip-Rap Pads – Jeff Marshall stated that placement of the rip-rap pad around the 18" side drains will be done prior to grassing of the side slopes.

Change Order – Juanitta Clem stated that the Change Order request has been forwarded to Neil Rushing for review.

The next meeting is scheduled for May 28, 2002 at 2:00 P.M.

Contract Time Used 191 days

Contract Time Remaining Gas System Expansion (90% complete) and Incremental Closure (85% complete) 39 days (including the time extension to June 29, 2002.)

cc Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Neil Rushing
Jim Horton
John Teague
Tom Bilgri



England-Thimms & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

Principals

James E England P.E. CEO
Douglas C Miller, P.E., President
N. Hugh Mathews P.E. Exec. VP
Joseph A Tarver Exec. VP
Juanita Bader Clem P.E. VP
Scott A Wild P.E. PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr. P.E. VP
Bryan R Stewart VP

DATE: May 14, 2002
2 00 P M – 3 30 P M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	Terry Canning	GSE
	John Kiwade	Plastic Fusion
	John Tully	LAW Engineering (LAW)
	William Davidson	England, Thims & Miller, Inc (ETM)
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Side Slope Units 1-4 – Placement of the topsoil is scheduled for tomorrow

Side Slope Units 21-23 – Placement of the topsoil is expected to be complete by tomorrow

Gas System Expansion – The gas system expansion tie-in on the western slope is substantially complete. The tie-in on the eastern slope is scheduled this week and is expected to be complete by next week.

Grassing – Due to dry weather, grassing has been rescheduled for May 24, 2002.

II. LANDFILL GAS SYSTEM EXPANSION

Connection of Remote Well RW-8 to the leachate cleanout riser will be complete this afternoon. Plastic Fusion will continue with the installation of the 22" header pipe on the eastern slope. William Davidson stated the 22" header line and downcomer crossing will be reviewed further when the existing downcomer is uncovered (at the crossing location). The 100 ft segment of pipe that will be excavated and reconstructed due to insufficient slope will be done after the gas system tie-in on the eastern slope is complete. Francis Dayao asked whether all the required materials for the remainder of the gas system are on site. Terry Canning replied that all materials are on site to complete the gas system.

Remote Well RW-7 – William Davidson stated that EMCON has reviewed and approved the proposed location of RW-7.

Damaged Wellhead (Well W-37) – William Davidson stated that Baker must demonstrate that Well W-37 is functioning properly, if the wellhead will be repaired and not replaced

As-Builts – William Davidson stated that the revised as-builts, according to the surveyor, will include the gas system within the closure areas on the western slope.

III. INCREMENTAL CLOSURE

Permeability Testing – William Davidson stated that all required permeability testing of the clay layer for the closure project is complete

Side Slope Units 21-23 – LAW will perform thickness checks on the topsoil after the grading is complete. If the thickness of the topsoil is acceptable, as-builts of the topsoil will be scheduled.

Change Order – Jeff Marshall stated that the Change Order request will be submitted to ETM today.

The next meeting is scheduled for May 21, 2002 at 2 00 P M.

Contract Time Used· 184 days

Contract Time Remaining· Gas System Expansion (88% complete) and Incremental Closure (85% complete) 46 days (including the time extension to June 29, 2002)

cc. Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Jim Horton
Juanitta Clem
John Teague
Tom Bilgri



England-Thims & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

Principals

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Scott A. Wild, P.E., PSM, VP
Samuel R. Crissinger, CPA, VP
Robert A. Mizell, Jr., P.E., VP
Bryan R. Stewart, VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: May 7, 2002
2:00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:

Neil Rushing	City of Jacksonville
Jeff Marshall	R B Baker Construction (Baker)
Terry Canning	GSE
John Kiwade	Plastic Fusion
Cliff Cosby	LAW Engineering (LAW)
John Tully	LAW
Juanitta Clem	England, Thims & Miller, Inc (ETM)
William Davidson	ETM
Francis Dayao	ETM

I. WEEKLY SCHEDULE

Side Slope Units 1-4 – Placement of the second lift of clay layer is substantially complete. Construction of the underdrain system is scheduled for this week.

Downcomer D-24 – Construction of the downcomer is complete up to Terrace 5

Gas System Expansion – The gas system expansion tie-in on the western slope is scheduled this week

II. LANDFILL GAS SYSTEM EXPANSION

Juanitta Clem reviewed the terrace crossings on the eastern and western slopes. Juanitta Clem stated a portion of the gas header (approximately 100 ft) installed by National Piping did not meet the design slope and asked when will the header pipe will be replaced. Jeff Marshall replied that the segment of the gas header will be removed and replaced, after the landfill gas system within the closure areas is complete.

As-Builts – William Davidson stated that majority of the comments on the revised as-builts have not been addressed. Juanitta Clem expressed concern about the as-builts and stated that the as-builts may delay the project. William Davidson stated that the as-builts for the remainder of the gas system must be taken when the gas system within the final closure areas is complete. William Davidson stated that the as-builts on the header system will be taken at every 100 feet and at a minimum, the location of all flanges, laterals and valves must be included.

III. INCREMENTAL CLOSURE

Side Slope Units 1-4 – The initial permeability testing on the second lift of clay layer had failed and the area was reworked and retested. The results of the second permeability test should be ready by next week. Jeff Marshall stated that top soil placement in Unit 4 will begin from the north. William Davidson stated that the swales on the east and west ends must be reconstructed and asked Baker the schedule for reconstructing the swales. Jeff Marshall replied that the swales will be reconstructed during sod placement on the eastern slope.

Side Slope Units 21-23 – Jeff Marshall stated that grading, grassing and placement of rip rap bags will be scheduled, after the construction of the gas system within the closure areas is complete.

Downcomer D-24 – Juanitta Clem stated that she was informed that the existing flange in Terrace 3 was extrusion weld rather than fusion weld and asked Plastic Fusion their opinion on the weld. John Kiwade replied that the extrusion weld of the flange is fine and that pressure was applied on the flange during construction of the downcomer segment from Terraces 3 and 4 and the weld on the flange did not break. John Kiwade asked whether Plastic Fusion can field fabricate the 22" x 6" tee and fabricate it, using extrusion weld. Juanitta Clem replied that ETM will discuss this with EMCON and will get back with Baker.

The next meeting is scheduled for May 14, 2002 at 2.00 P M.

Contract Time Used 177 days

Contract Time Remaining Gas System Expansion (85% complete) and Incremental Closure (75% complete) 53 days (including the time extension to June 29, 2002)

cc Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Jim Horton
John Teague
Tom Bilgri



England-Thimms & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

Principals

James E. England P.E. CEO
Douglas C. Miller P.E., President
N. Hugh Mathews P.E. Exec. VP
Joseph A. Tarver Exec. VP
Juanita Bader Clem P.E. VP
Scott A. Wild, P.E. PSM VP
Samuel R. Crissinger CPA VP
Robert A. Mizell Jr. P.E. VP
Bryan R. Stewart VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: April 30, 2002
2:00 P M – 3:30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:

Neil Rushing	City of Jacksonville
Jeff Marshall	R B Baker Construction (Baker)
Terry Canning	GSE
John Kiwade	Plastic Fusion
John Tully	LAW Engineering (LAW)
Francis Dayao	England, Thimms & Miller, Inc. (ETM)
William Davidson	ETM

I. WEEKLY SCHEDULE

Side Slope Units 1-4 – Placement of the first lift of clay layer on Unit 4, north of the downcomer, is expected to be complete this week. Construction of the underdrain is scheduled for May 8, 2002.

Downcomer D-24 – Construction of the downcomer and side drains will continue this week.

Gas System Expansion – The gas system expansion tie-in on the western slope is scheduled for May 1 and the tie-in on the eastern slope is scheduled for May 9, 2002.

II. LANDFILL GAS SYSTEM EXPANSION

Plastic Fusion has mobilized to the site to complete the landfill gas system expansion. Terry Canning with GSE will be supervising the construction of the gas system. William Davidson provided GSE and Plastic Fusion with an update of the landfill gas system expansion.

Baker will be excavating the top soil on the western slope for the landfill gas system tie-in. William Davidson stated that a representative from ETM or LAW must be present during the excavation of the top soil and that every effort must be made to minimize disturbing the clay layer.

As-Builts – William Davidson stated that a few changes have been made on the as-built drawings but overall, a lot of information is still missing. ETM and Baker will review the as-builts with the surveyor.

William Davidson stated the pipe for the condensate drain appeared to be bulging and asked Baker to replace the pipe prior to the gas system tie-in. Jeff Marshall agreed to replace the pipe

III. INCREMENTAL CLOSURE

Side Slope Units 1-4 – Construction of the first lift of clay in the area north of the downcomer will be complete by Wednesday.

Side Slope Units 21-23 – Baker has substantially completed Downcomer D-2 and placement of the top soil. William Davidson stated that the underdrain cleanouts must be installed and the terrace flats at the downcomer must be constructed

Downcomer D-24 – The second lift of clay layer at the downcomer location has been tested for permeability and it passed. Plastic Fusion will be constructing Downcomer D-24 this week. William Davidson suggested that ETM and Plastic Fusion review Downcomer D-24 in the field after the meeting

The next meeting is scheduled for May 7, 2002 at 2 00 P M

Contract Time Used 170 days

Contract Time Remaining Gas System Expansion (85% complete) and Incremental Closure (75% complete) 60 days (including the time extension to June 29, 2002.)

cc. Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Juanita Clem
Jim Horton
Cliff Cosby
John Teague
Tom Bilgri



England-Thimms & Miller, Inc.

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TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

Principals

James E England PE CEO
Douglas C Miller, PE President
N Hugh Mathews PE, Exec VP
Joseph A Tarver Exec VP
Juanitta Bader Clem PE VP
Scott A Wild PE PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr PE VP
Bryan R Stewart VP

DATE: April 23, 2002
2 00 P.M. – 3 30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:

Neil Rushing	City of Jacksonville
Jeff Marshall	R B Baker Construction (Baker)
Cliff Cosby	LAW Engineering (LAW)
John Tully	LAW
Juanitta Clem	England, Thims & Miller, Inc. (ETM)
William Davidson	ETM
Francis Dayao	ETM

I. WEEKLY SCHEDULE

Side Slope Units 1-4 – Initial cover as-builts on Unit 4 are scheduled for the week of April 22, 2002. Placement of the first lift of clay layer on Unit 4, north of the downcomer, is scheduled for April 25, 2002. Placement of the second lift of clay layer is scheduled to begin on May 9, 2002.

Gas System Expansion – The gas system expansion tie-in on the western slope is scheduled for the week of April 29 and the tie-in on the eastern slope is scheduled for the week of May 6, 2002.

II. LANDFILL GAS SYSTEM EXPANSION

Jeff Marshall stated that Plastic Fusion will mobilize to the site on Monday, April 29, 2002 to construct the landfill gas system expansion and that Plastic Fusion's qualifications have been requested. At this time, it is not certain whether GSE will be supervising the construction of the gas system.

As-Builts – William Davidson stated that the revised as-built drawings did not address majority of the comments that have been previously noted. Jeff Marshall stated that the surveyor is scheduled to meet with William Davidson tomorrow to discuss the as-built drawings. Jeff Marshall stated that his surveyor may assist with the as-built drawings.

III. INCREMENTAL CLOSURE

Side Slope Units 21-23 – Juanitta Clem asked whether the top soil has been as-built. Jeff Marshall replied that the top soil has not been as-built and will coordinate the survey schedule with William Davidson.

Side Slope Units 1-4 – Jeff Marshall asked whether it is possible to construct the clay layer on Unit 4, north of the downcomer, in 100-ft increments. Juanitta Clem replied construction of the clay layer in 100-ft. increments is acceptable. Juanitta Clem requested Baker construct the clay layer as soon as possible to prevent erosion of the initial cover and suggested that the silty, wet material in Terrace 3 be removed and initial cover be placed in preparation for clay construction at the tie-in. Juanitta Clem stated that construction of the clay layer on Unit 4 is a critical path item. Jeff Marshall agreed.

Downcomer D-24 – Construction of the second lift of clay layer at the downcomer location is scheduled for tomorrow. Juanitta Clem stated that the existing downcomer between Terrace 4 and Terrace 5 was reviewed with Neil Rushing. Juanitta Clem stated that the segment of the downcomer pipe must be pulled out, the grade adjusted and the downcomer pipe relaid. Juanitta Clem requested Baker provide a cost estimate for the additional work. Juanitta Clem asked whether all the materials for Downcomer D-24 are on site. William Davidson replied that all the necessary materials including the fittings are on site. The downcomer is also a critical path item. Juanitta Clem requested justification for the cost estimate that was submitted for the additional work on the downcomer.

Juanitta Clem stated that Baker is taking a serious risk not having the clay layer and downcomer constructed on Unit 4.

Weather Delays – Juanitta Clem stated that the FDEP has not responded to the letters regarding time extensions and ETM will follow up with the FDEP. (Note: Subsequent to the meeting, the completion date of June 29, 2002 was accepted by the FDEP.)

Disturbed Areas – Jeff Marshall stated that the grassed areas above Terrace 4 on the eastern slope have been disturbed during the construction of Side Slope Unit 4 and asked whether these areas will have to be reseeded by Baker. After further discussion, it was agreed that Baker will not be required to reseed the disturbed grassed areas. However, Baker must regrade these areas and have it ready for seeding.

The next meeting is scheduled for April 30, 2002 at 2 00 P M

Contract Time Used 163 days

Contract Time Remaining Gas System Expansion (85% complete) and Incremental Closure (70% complete). 67 days (including the time extension to June 29, 2002.)

cc: Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Jim Horton
John Teague
Tom Bilgn



England-Thimms & Miller, Inc.

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TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

Principals

James E England PE CEO
Douglas C Miller PE President
N Hugh Mathews, PE Exec VP
Joseph A Tarver Exec VP
Juanitta Bader Clem PE VP
Scott A Wild PE PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr PE, VP
Bryan R Stewart, VP

DATE: April 16, 2002
2:00 P M – 3:30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	John Tully	LAW
	Juanitta Clem	England, Thimms & Miller, Inc (ETM)
	William Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Downcomer D-2 - Construction of Downcomer D-2 on the western slope is scheduled to be completed on April 16, 2002

Side Slope Units 1-4 – Initial cover as-builts on Unit 4 is scheduled for April 22, 2002. Placement of the first lift of clay layer on Unit 4, north of the downcomer, is scheduled for April 22, 2002. Construction of the underdrain on Units 1-3 is scheduled for April 18-20, 2002 and placement of top soil on Units 1, 2, and 3 is scheduled for April 20, 2002

Gas System Expansion – The gas system expansion tie-in on the western slope is scheduled for the week of April 22 and the tie-in on the eastern slope is scheduled for the week of April 29, 2002

II. LANDFILL GAS SYSTEM EXPANSION

Jeff Marshall stated that Plastic Fusion may be finishing the remainder of the project. Juanitta Clem reminded Baker that Plastic Fusion must be pre-qualified and requested that pre-qualification documents be submitted to ETM for review this week. Jeff Marshall took note.

The construction of the 6" header line on the eastern slope from Well T-29 was discussed. Juanitta Clem stated that the proposal to relocate the 6" header line from Well T-29 has been approved by EMCON.

As-Builts – Jeff Marshall stated the revised as-builts will be submitted electronically to ETM today (Note: Subsequent to the meeting, the revised as-builts were submitted and are currently being reviewed by ETM).

Remote Well RW-7 – Juanitta Clem stated that the proposed relocation of RW-7 has been approved by EMCON and asked Baker where RW-7 will be located. Jeff Marshall stated that RW-7 and the 6" header line will be located near the downcomer. Juanitta Clem asked Baker how the existing top soil layer will be excavated on Units 1 and 2 at the downcomer location. Jeff Marshall replied that a small hoe with a 2 ft wide bucket will be utilized.

III. INCREMENTAL CLOSURE

Side Slope Units 21-23 – Jeff Marshall stated that the remainder of the top soil will be placed tomorrow and the western side slope will be rough graded. Juanitta Clem expressed her concern regarding the loaded trucks running over the terrace and possibly crushing the 6" underdrain pipe with minimal cover on Unit 21. Jeff Marshall stated that he will have the 6" pipe inspected. Juanitta Clem requested Baker take necessary precautions while crossing the terraces.

Side Slope Units 1-4 – Juanitta Clem stated that she reviewed the eastern slope prior to the meeting and expressed her concern regarding significant soil erosion and uncontrolled drainage. Juanitta Clem stressed the importance of managing the stormwater runoff from the top. Juanitta Clem made it clear that Baker is responsible for managing the drainage system since the drainage system was operational prior to the start of the project. Juanitta Clem stressed the importance of covering exposed waste within 24 hours. Bridging the gap between the existing downcomers was discussed and upon discussion, it was agreed that ADS pipe will be used to temporarily connect the existing downcomers to control the runoff from the top.

Clay at Downcomer D-24 – Juanitta Clem requested that construction of the first lift of clay at the downcomer location be completed as soon as possible. Juanitta Clem stated that it is Baker's decision to proceed with placement of the second lift of clay at the downcomer location, prior to obtaining the permeability results of the first lift of clay. Juanitta Clem stated that Baker must proceed with constructing the first lift of clay on Unit 4, north of the downcomer, to avoid erosion of the initial cover. Juanitta Clem stated that if the drainage system is not managed and Downcomer D-24 is not constructed as soon as possible, there is a potential for losing Terrace 3 in a rain event.

Downcomer D-2 – Juanitta Clem requested the termination of the 30" downcomer pipe at the top be covered at least temporarily if the permanent cover is not on site.

Jeff Marshall stated that the justification for the additional cost incurred for the construction of Unit 4 is being reviewed internally.

The next meeting is scheduled for April 23, 2002 at 2 00 P M.

Contract Time Used 156 days

Contract Time Remaining Gas System Expansion (85% complete) and Incremental Closure (65% complete). 24 days (not including the time extension since DEP approval is pending)

cc	Attendees	
	Greg Mathes	Jim Horton
	Jimmy Purvis	Cliff Cosby
	Chris Pearson	John Teague
	Tom Bilgr	



England-Thimms & Miller, Inc.

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TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

Principals

James E England P.E., CEO
Douglas C Miller, P.E., President
N Hugh Mathews P.E. Exec VP
Joseph A Tarver Exec VP
Juanitta Bader Clem P.E. VP
Scott A Wild P.E. PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr. P.E. VP
Bryan R Stewart VP

DATE: April 9, 2002
2 00 P M – 3 30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:

Neil Rushing	City of Jacksonville
Jeff Marshall	R B Baker Construction (Baker)
Don Butler	GSE (National Piping)
Jim Horton	LAW Engineering (LAW)
John Tully	LAW
Juanitta Clem	England, Thims & Miller, Inc (ETM)
William Davidson	ETM
Francis Dayao	ETM

I. WEEKLY SCHEDULE

Downcomer D-24 - Construction of Downcomer D-24 on the eastern slope is scheduled to begin on April 10, 2002.

Side Slope Units 1-4 - Placement of the first lift of clay on Side Slope Unit 4 north of the downcomer is scheduled this week

Gas System Expansion - The gas system expansion tie-in on the western slope is scheduled for this week

II. LANDFILL GAS SYSTEM EXPANSION

RW-7 - Juanitta Clem stated that Baker's proposal to shift Remote Well RW-7 to the north is being reviewed by EMCON. Juanitta Clem stated that moving RW-7 to the downcomer has advantages and disadvantages and its up to Baker to make that decision as to where RW-7 and the 6" header line will be located. After further discussion, it was agreed that ETM and Baker will review Baker's proposed location of RW-7 and the 6" header line in the field after the meeting.

National Piping - Juanitta Clem asked whether the remainder of the landfill gas system expansion will be conducted by National Piping. Jeff Marshall stated that National Piping may either finish the remainder of the project or sub-contract it to Plastic Fusion. If Plastic Fusion will not be under the supervision of National Piping, Juanitta Clem stated that Plastic Fusion must be pre-qualified prior to working on the gas system. Jeff Marshall acknowledged and stated that he will contact National Piping and see who will be finishing the landfill gas system expansion.

Revised As-Builts – Baker's surveyor will review ETM's comments with William Davidson. William Davidson stated that the as-builts do not have the as-built information on the tees and laterals from the header to the riser pipe. Juanitta Clem requested that Jeff Marshall verify this with the surveyor and have the revised as-builts reviewed, corrected and submitted as soon as possible.

Well T-29 Tie-in – Juanitta Clem stated that due to the settlement on the eastern slope, the tie-in to the existing permanent well may create drainage problems on Terrace 3. Juanitta Clem suggested the 6" header pipe cross Terrace 4 and head southeast and tie into the 22" header pipe at the downcomer location at Terrace 3. Juanitta Clem stated that ETM will discuss this with EMCON. Jeff Marshall agreed to Juanitta Clem's proposal and stated that construction will not be as difficult. Juanitta Clem stated that the fittings for the bends and tie-in will be based on field conditions.

Shop Drawings – ETM will review the shop drawings for the downcomer (straight run pipe) that were provided. Juanitta Clem stated that the pipe sizes must be identified and the Standard Dimension Ratio (SDR) for the fittings (on-site) must be provided for each fitting.

III. INCREMENTAL CLOSURE

Clay Layer – All permeability testing south of the downcomer on Side Slope Unit 4 have passed.

Downcomer D-2 – ISCO will continue construction of the downcomer side drains.

Pipe Encasement – Juanitta Clem stated that Baker had asked whether contaminated clay may be utilized to encase the downcomer pipe. Juanitta Clem stated that since the clay encasement is not part of the clay layer, the material may be utilized if the material is at least 90% clay (from the borrow pit).

Side Slope Unit 4 – Jeff Marshall stated that the waste has been removed and initial cover has been placed and rough graded. Baker will continue to uncover the clay tie-in at Terrace 3. Juanitta Clem stated that due to settlement on closed Unit 3 (north of the downcomer), the slope between Terraces 3 and 4 will have to be adjusted. Jim Horton stated that he had analyzed the adjusted slope and it will have a safety factor slightly above 1 whereas the typical slope has a 1.3 safety factor. The effects of a steeper side slope were discussed and upon discussion, it was agreed that in order to reduce the potential of slippage (and top soil erosion), sod placement will be critical and must be accomplished as soon as possible after top soil placement. Juanitta Clem stated that if the weather is favorable this week, Baker should construct the first lift of clay layer on Unit 4 north of the downcomer.

Downcomer and Side Drains – The possibility of using ADS pipe to transition from the smooth-walled pipe for the 18" side drain was discussed.

Juanitta Clem stated that ETM reviewed Baker's request regarding the additional construction cost incurred due to the slopes on Unit 4 and requested Baker provide the necessary justification.

The next meeting is scheduled for April 16, 2002 at 2:00 P.M.

Contract Time Used 149 days

Contract Time Remaining Gas System Expansion (85% complete) and Incremental Closure (65% complete). 31 days (not including the time extension since DEP approval is pending)

cc	Attendees	
	Greg Mathes	Cliff Cosby
	Jimmy Purvis	John Teague
	Chris Pearson	Tom Bilgri



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Joseph A Tarver Exec VP
Juanitta Bader Clem PE VP
Scott A Wild PE PSM, VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr PE VP
Bryan R Stewart VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: April 2, 2002
2 00 P M – 3 30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	Don Butler	GSE (National Piping)
	Cliff Cosby	LAW Engineering (LAW)
	John Tully	LAW
	Bill Davidson	England, Thims & Miller, Inc (ETM)
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Downcomer - Construction of Downcomer D-2 will continue this week and is expected to be complete by April 5, 2002.

Side Slope Units 1-4 – Waste removal on Unit 4 will continue this week and will be followed by placement and grading of the initial cover Baker plans to have the initial cover on Unit 4 ready for as-built by April 8, 2002 Construction of the first lift of clay on Unit 4 will begin on April 9 and is expected to be complete by April 13, 2002, weather permitting.

Side Slope Units 21-23 – Placement of top soil on Units 21-23 will be complete by April 8, 2002.

Gas System Expansion – Construction of the gas system on the western slope is scheduled to begin on April 8, 2002

II. LANDFILL GAS SYSTEM EXPANSION

Jeff Marshall asked whether it is possible to construct Well RW-7 north of its plan location Francis Dayao requested a drawing showing the proposed new location of the well and the 6" header line for review with EMCON

William Davidson stated that National Piping has been informed of the re-laying of header pipes that did not meet the design slope. Don Butler will verify the schedule of re-laying the header pipes with National Piping.

As-Built – William Davidson stated that ETM has provided the surveyor with review comments regarding the tabular information. William Davidson stated that as-built information on the laterals has not been submitted and that locating the laterals may be difficult since the markers have been knocked out due to landfill operations.

III. INCREMENTAL CLOSURE

Downcomer Shop Drawings – William Davidson stated that the shop drawings have not been submitted. Don Butler took note and stated that he will verify the status on the shop drawings.

William Davidson stated that ISCO is on site to finish construction of the downcomer. William Davidson stated that additional fittings for the underdrain are needed. Don Butler stated that he will do an inventory of the materials and order the necessary materials for the underdrain system.

Side Slope Units 1-4 – Baker completed placement of first and second lift of clay within Units 1-4 south of the downcomer. The permeability test results have been received and all passed. William Davidson requested the existing clay at the southern edge of the compactor access road be exposed prior to construction and grading of the initial cover.

Side Slope Units 21-23 – William Davidson stated that placement of top soil within Units 21-23 is substantially complete and will be as-built this week. William Davidson stated that LAW resampled the top soil for pH and organic content and were found to be acceptable.

Contract Time Used. 142 days

Contract Time Remaining Gas System Expansion (85% complete) and Incremental Closure (60% complete) 38 days (not including the time extension since DEP approval is pending)

The next meeting is scheduled for April 9, 2002 at 2.00 P M

cc Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Juanitta Clem
Jim Horton
John Teague
Tom Bilgri



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Scott A Wild PE PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr PE, VP
Bryan R Stewart, VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: March 26, 2002
2.00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:

Jeff Marshall	R.B. Baker Construction (Baker)
Cliff Cosby	LAW Engineering (LAW)
John Tully	LAW
Juanitta Clem	England, Thims & Miller, Inc. (ETM)
Bill Davidson	ETM
Francis Dayao	ETM

I. WEEKLY SCHEDULE

Side Slope Units 1-4 – Construction of Downcomer D24 is scheduled for April 1, 2002. Placement of the second lift of clay is tentatively set for April 8, 2002

Side Slope Units 21-23 – Construction of the underdrain system and placement of top soil are expected to be complete this week. Construction of Downcomer D2 will proceed this week.

II. LANDFILL GAS SYSTEM EXPANSION

As-Built – Revised as-builts have been provided and are currently under review by ETM. William Davidson stated that there is a pipe segment that must be excavated and reconstructed and two (2) potential segments that will have to be reconstructed. Juanitta Clem asked whether National Piping will be back to correct the discrepancies. Jeff Marshall replied that he will verify this with National Piping.

III. INCREMENTAL CLOSURE

Downcomer Shop Drawings – Juanitta Clem reminded Jeff Marshall that shop drawings for the downcomer pipe have not been submitted. Jeff Marshall replied that he will follow up with National Piping

Top Soil – Placement of top soil on the western slope will continue. Juanitta Clem stated that ETM is investigating whether or not the pH of the proposed top soil is acceptable. (Note. Subsequent to the meeting, the pH of the proposed top soil was found to be within acceptable range)

Construction of the clay layer on Side Slope Unit 4 on the eastern slope was discussed in detail. Preliminary investigation of the existing clay layer revealed that the existing clay layer north of the downcomer (at the terrace tie-in) is approximately 6' lower than plan grade. Based on field observations, removal of existing waste at the clay tie-in will be required. Juanitta Clem stated that she will discuss waste removal at the tie-in with Greg Mathes. Juanitta Clem requested Jeff Marshall and William Davidson to investigate the elevation of the existing clay layer at Terrace 3 in order to determine the slope on Unit 4. Juanitta Clem stated that construction of the side slope must proceed per design. Jeff Marshall explained that construction of the side slope, underdrain system and sod placement will be more difficult due to a steeper side slope and asked whether Baker will be compensated for the additional work on Side Slope Unit 4. Juanitta Clem replied that a Change Order request is not justified since the Bidders have been informed of the settlements at the site at the Pre-Bid Conference and were encouraged to review the site prior to submitting their bids.

Contract Time Used: 135 days

Contract Time Remaining: Gas System Expansion (85% complete) and Incremental Closure (55% complete). 45 days (not including the time extension since DEP approval is pending)

The next meeting is scheduled for April 2, 2002 at 2:00 P.M.

cc. Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Neil Rushing
Jim Horton
John Teague
Tom Bilgri



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Scott A Wild P.E. PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr. P.E. VP
Bryan R Stewart VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: March 19, 2002
2:00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R.B. Baker Construction (Baker)
	Cliff Cosby	LAW Engineering (LAW)
	John Tully	LAW
	Juanitta Clem	England, Thims & Miller, Inc. (ETM)
	Bill Davidson	ETM

I. WEEKLY SCHEDULE

Initial Cover – Grading of the initial cover on Side Slope Unit 4 north of the downcomer will be completed this week.

Clay Layer – Construction of the first lift of clay layer will continue on Side Slope Units 3 and 4.

II. LANDFILL GAS SYSTEM EXPANSION

As-Built - Jeff Marshall stated that the revised as-builts will be submitted to ETM this week.

Clay Layer – The construction of the clay layer below the 22" header on Side Slope Unit 4 was discussed at length. Jeff Marshall explained that he will construct the clay layer after the clay layer has been completed and the vegetative cover has been installed. He will undercut the clay layer and reconstruct it in 6" lifts which will be tied into the existing layer to create one homogeneous layer.

III. INCREMENTAL CLOSURE

Clay Layer – The first lift of clay on Units 1 and 2 have passing permeability tests. Construction of the clay layer on Side Slope Units 3 and 4 will proceed this week.

Downcomer – Construction of the downcomer is scheduled for next week. Juanitta Clem requested the shop drawings (cut sheets) for the downcomer pipe.

The next meeting is scheduled for March 26, 2002 at 2:00 P.M.

Contract Time Used: 128 days

Contract Time Remaining: Gas System Expansion (85% complete) and Incremental Closure (40% complete): 52 days (not including the time extension since DEP approval is pending.)

cc: Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Jim Horton
Francis Dayao
John Teague
Tom Bilgri



England-Thims & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

Principals

James E. England, P.E. CEO
Douglas C. Miller, P.E., President
N. Hugh Mathews, P.E. Exec. VP
Joseph A. Tarver, Exec. VP
Juanitta Bader Clem, P.E. VP
Scott A. Wild, P.E. PSM VP
Samuel R. Crissinger, CPA VP
Robert A. Mizell, Jr., P.E. VP
Bryan R. Stewart, VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: March 12, 2002
2:00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R.B. Baker Construction (Baker)
	Jim Horton	LAW Engineering (LAW)
	John Tully	LAW
	Juanitta Clem	England, Thims & Miller, Inc. (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Initial Cover – Grading of the initial cover on Side Slope Units 3 and 4 is scheduled for this week.

Clay Layer – Construction of the clay layer will be completed on the western slope and will continue on the eastern slope.

II. LANDFILL GAS SYSTEM EXPANSION

Flex Hose – The flex hose has been ordered by National Piping.

As-Built - Juanitta Clem stated that ETM has reviewed the preliminary as-built drawings and found significant problems that must be verified in the field. Jeff Marshall stated that Baker's surveyor is on-site checking the areas in question and should have a copy of the revised as-built to ETM this week. Juanitta Clem stated that the as-built drawings must be signed and sealed by a registered land surveyor.

III. INCREMENTAL CLOSURE

Clay Layer – Jim Horton stated that all samples for the second lift of clay at the downcomer location have passed the permeability test. The results of the permeability testing for the second lift of clay on the eastern side slopes are expected on Thursday. Jeff Marshall stated that additional clay is needed to meet the 6" thickness requirement for the first lift of clay on Side Slope Units 1 and 2. Construction of the clay layer on Side Slope Units 3 and 4 is scheduled for next week. Juanitta Clem stated that a total of 4 permeability tests are required for the first lift of clay on the eastern slope.

Downcomer – Construction of the downcomer is scheduled for March 25, 2002. Jeff Marshall stated the schedule is based upon the availability of the welding equipment for 30" pipes. Juanitta Clem requested the shop drawings for the downcomer pipe be provided as soon as possible.

Time Extension – Juanitta Clem stated that Julia Boesch of the DEP has informed ETM that the DEP does not have a problem with the time extension and that a formal letter approving the request will follow.

The next meeting is scheduled for March 19, 2002 at 2:00 P.M.

Contract Time Used: 121 days

Contract Time Remaining: Gas System Expansion (85% complete) and Incremental Closure (40% complete): 59 days (not including the time extension since DEP approval is pending.)

cc: Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Cliff Cosby
John Teague
Tom Bilgn



England-Thimby & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

Principals

James E. England, P.E., CEO
Douglas C. Miller, P.E., President
N. Hugh Mathews, P.E., Exec. VP
Joseph A. Tarver, Exec. VP
Juanitta Bader Clem, P.E., VP
Scott A. Wild, P.E., PSM, VP
Samuel R. Crissinger, CPA, VP
Robert A. Mizell, Jr., P.E., VP
Bryan R. Stewart, VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: March 5, 2002
2:00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R.B. Baker Construction (Baker)
	Cliff Cosby	LAW Engineering (LAW)
	John Tully	LAW
	Juanitta Clem	England, Thims & Miller, Inc. (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Clay Layer – Baker will continue construction of the clay layer on Side Slope Units 1, 2, 21, 22 and 23

Downcomer – National Piping will continue fabricating the downcomer and the terrace side drains.

II. LANDFILL GAS SYSTEM EXPANSION

Flex Hose – Jeff Marshall will contact National Piping and verify whether the hose has been ordered.

As-Built – A draft of the as-built has been submitted and currently in review.

III. INCREMENTAL CLOSURE

Clay Layer – Cliff Cosby stated that all the permeability tests on the first lift of clay in Units 21-23 have passed. Jeff Marshall stated that Baker will proceed with the

construction of the second lift of clay tomorrow. Juanitta Clem inquired about an area on the western slope approximately 15' on each side of the downcomer location where the first lift of clay has not been constructed. Jeff Marshall replied that Baker will balance the clay layer and complete that area simultaneously. Juanitta Clem recommended that construction of the second lift of clay at the downcomer location be a priority. Jeff Marshall agreed and stated that construction of the second lift of clay on the western slope will take approximately 2 days, weather permitting. Juanitta Clem stated that there will be seven permeability tests on the second lift of clay. John Tully took note. Permeability testing of the clay layer on the eastern slope was discussed. Based upon the size, it was agreed that one permeability test per lift will be done for Units 1 and 2. Juanitta Clem stated that the spoil pile on the eastern slope north of the clay tie-in should be removed since it is causing drainage problems. Jeff Marshall stated that the spoil pile cannot be removed at this time due to the wet conditions of the slope. Juanitta Clem requested Baker avoid unnecessary spoil piles on existing closure areas in the future. Juanitta Clem stated that Baker must clean and grade the terraces in order to drain stormwater to the north.

Underdrain – Jeff Marshall stated that construction of the underdrain on the west slope is scheduled to begin on March 8, 2002. An alternate sand borrow pit has been located and a load of sand will be delivered to the site tomorrow for testing. If the sand meets the project specifications, the sand will be delivered next week. (Subsequent to the meeting, the proposed sand was tested and approved.)

Downcomer Shop Drawing – Juanitta Clem stated installation of the downcomer will not proceed until the shop drawings have been submitted and accepted. Jeff Marshall took note.

Juanitta Clem stated that DEP has not responded to the letter regarding the four wells with aggregate that did not meet the project specification. Juanitta Clem stated that ETM will contact DEP regarding the request for time extension.

The next meeting is scheduled for March 12, 2002 at 2.00 P.M.

Contract Time Used: 114 days

Contract Time Remaining: Gas System Expansion (85% complete) and Incremental Closure (35% complete): 66 days (not including the time extension since DEP approval is pending.)

cc: Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Jim Horton
John Teague
Tom Bilgri



England-Thims & Miller, Inc.

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TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

Principals

James E England, P.E. CEO
Douglas C Miller P.E. President
N Hugh Mathews, P.E., Exec VP
Joseph A Tarver Exec VP
Juanitta Bader Clem P.E. VP
Scott A Wild P.E. PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr. P.E. VP
Bryan R Stewart VP

DATE: February 26, 2002
2:00 P M – 3:30 P M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES :	Neil Rushing	City of Jacksonville
	Jeff Marshall	R.B Baker Construction (Baker)
	Jim Horton	LAW Engineering (LAW)
	Cliff Cosby	LAW
	John Teague	LAW
	Juanitta Clem	England, Thims & Miller, Inc (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Clay Layer – Baker will continue construction of the clay layer on Side Slope Units 21, 22 and 23

Initial Cover – Grading of the initial cover on Side Slope Units 1, 2, 3 and 4 is scheduled for this week.

II. LANDFILL GAS SYSTEM EXPANSION

Flex Hose – A sample of the proposed alternate flex hose has not been received and Jeff Marshall will follow up with National Piping (Note. Subsequent to the meeting, a sample of the proposed alternate hose was received. Upon review by TRLF and ETM, the proposed alternate hose has been determined to be acceptable.)

As-Builts – Juanitta Clem stated that the as-built drawing has not been received and requested Baker follow up with their surveyor

III. INCREMENTAL CLOSURE

Downcomer Shop Drawing – Juanitta Clem stated the shop drawing for the downcomer pipe has not been submitted

Jeff Marshall stated that National Piping is on site to begin fabrication of the downcomer pipe. Juanitta Clem requested the fittings for the downcomer pipe be verified to ensure that the correct fittings are used to fabricate the terrace side drains Jeff Marshall agreed

Termination of the Downcomer – William Davidson stated that the termination of the downcomer on the top terrace is shown on the Construction Plans.

Juanitta Clem stated that DEP has not responded to the letter regarding the four wells with aggregate that did not meet the project specification With regards to the time extension, Juanitta Clem stated that a formal response has not been received from the DEP

Test Strip – Juanitta Clem stated that the first lift of clay on the test strip has been tested and approved The second lift of clay has been tested and approved for density and the result of the one remaining permeability sample is pending Jim Horton stated that the remaining sample appears favorable

Downcomer (Western Slope) – Jeff Marshall stated that Baker will continue grading the first lift of clay at the downcomer location and expects the clay layer to be ready for permeability testing tomorrow Jeff Marshall stated that balancing of the clay layer will coincide with construction of the clay layer at the downcomer location.

Juanitta Clem stated that testing of the clay at the downcomer location should be a priority. LAW and Baker agreed Jeff Marshall stated that Baker will not be constructing the second lift of clay at the downcomer location until the permeability of the first lift has been approved Juanitta Clem estimated that if the samples pass, the downcomer could be installed within 2 weeks, weather permitting Baker will start grading the initial cover on the east slope while waiting on the results

Initial Cover – For the record, Juanitta Clem stated that the initial cover was as-built prior to Baker constructing the clay layer on the western slope

Sand for the Underdrain – Jim Horton stated that the proposed sand failed to meet the project specification for the effective grain size. Upon discussion, it was agreed that Baker will locate another source for the sand

The next meeting is scheduled for March 5, 2002 at 2 00 P M

Contract Time Used 107 days

Contract Time Remaining Gas System Expansion (85% complete) and Incremental Closure (30% complete). 73 days (not including the time extension since DEP approval is pending)

cc

Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Mike Daniels
Tom Bilgri



England-Thims & Miller, Inc.

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Principals

James E England, PE CEO
Douglas C Miller, PE President
N Hugh Mathews, PE Exec VP
Joseph A Tarver Exec VP
Juanitta Bader Clem PE VP
Scott A Wild PE PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell, Jr PE, VP
Bryan R Stewart VP

**TRAIL RIDGE LANDFILL
INCREMENTAL CLOSURE AND LANDFILL
GAS SYSTEM EXPANSION
CONSTRUCTION MEETING MINUTES**

DATE: February 19, 2002
2:00 P.M. – 3:30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R.B Baker Construction (Baker)
	Jim Horton	LAW Engineering (LAW)
	Cliff Cosby	LAW
	Juanitta Clem	England, Thims & Miller, Inc. (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Clay Layer – Construction of the first lift of clay on Side Slope Units 21, 22 and 23 is scheduled for this week

II. INCREMENTAL CLOSURE

As-Builts – Juanitta Clem requested the status of the as-built drawing Jeff Marshall replied the as-built should be received by ETM (via electronic mail) today

Flex Hose – National Piping has proposed an “equal” hose and ETM requested a sample. William Davidson will present the proposed hose (expected to be received today) to TRLF for review and comment.

Downcomer Shop Drawing – Juanitta Clem stated the shop drawing for the downcomer pipe has not been submitted. Jeff Marshall stated that he will follow up on the shop drawing with National Piping when they return to the site next week.

Juanitta Clem stated that DEP has not responded to the time extension request and the four wells with aggregate that did not meet the project specification.

Clay Test Strip – Juanitta Clem stated that a permeability test from the first lift of clay had failed and the area where the sample was taken has been reworked and resampled. Jim Horton stated that the second sample appears favorable. With regards to the second lift of clay, a failed sample has been confirmed. The result of a second sample is expected tomorrow and appears to be marginal. Jim Horton explained that the cause of the failures may be due to the presence of sand seams. Jim Horton stated that the percent fines on the samples are within acceptable ranges with the exception of one sample (40% - 45%). The density and moisture are also within acceptable ranges. Juanitta Clem suggested the areas where the failed and marginal sample have been taken be reworked and retested. Jim Horton stated that it is Baker's discretion to rework the area now or wait until the result of the second sample is known. The other three tests on the second lift have passed.

Density – Juanitta Clem asked whether the density for the clay layer can be set. Jim Horton replied that there is data to support 88%. Upon further discussion, it was agreed that the clay density will be set at 88% of Standard Proctor.

Juanitta Clem stated that the clay underneath the header pipe must be placed in 6-inch lifts and each lift will be tested for density. Jeff Marshall took note.

Jeff Marshall asked whether it is acceptable to lay the 12" header pipe on the clay layer without a 6" undercut. Juanitta Clem replied that it is acceptable to lay the 12" header pipe on the clay layer with a "clear understanding" that the soil cover over the header pipe must be placed and graded in a manner that it will not become a maintenance issue (thickness of the cover reduced due to mowing). The thickness of the cover material must be a minimum of 18 inches over the pipe. Juanitta Clem requested the soil cover above the header pipe be checked for grading and thickness.

The next meeting is scheduled for February 26, 2002 at 2:00 P.M.

Contract Time Used: 100 days

Contract Time Remaining: Gas System Expansion (85% complete) and Incremental Closure (25% complete): 80 days (not including the time extension since DEP approval is pending.)

cc: Attendees
Greg Mathes John Teague
Jimmy Purvis Mike Daniels
Chris Pearson Tom Bilgri



England-Thims & Miller, Inc.

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Principals

James E England PE CEO
Douglas C Miller, PE President
N Hugh Mathews PE Exec VP
Joseph A Tarver Exec VP
Juanitta Bader Clem PE VP
Scott A Wild PE PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr PE VP
Bryan R Stewart VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: February 12, 2002
2 00 P.M – 3:30 P M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:

Neil Rushing	City of Jacksonville
Jeff Marshall	R B. Baker Construction (Baker)
Mike Daniels	National Piping
Stephen Martin	National Piping
Johnny Teague	LAW Engineering (LAW)
Cliff Cosby	LAW
Juanitta Clem	England, Thims & Miller, Inc (ETM)
Bill Davidson	ETM
Francis Dayao	ETM

I. WEEKLY SCHEDULE

Test Strip – Baker will continue construction of the clay test strip

Initial Cover – Baker will continue grading the initial cover on Side Slope Units 21, 22 and 23.

Gas System – National Piping will continue addressing the Punch List

II. LANDFILL GAS SYSTEM EXPANSION

Certification to RESD – Juanitta Clem stated that EMCON has submitted the certification to RESD for the landfill gas system outside the closure areas.

As-Built – A draft of the as-built is expected on February 14, 2002.

Punch List – The majority of the items have been addressed. National Piping will submit a shop drawing for a proposed equal for the gas hose (Series LFG44 Silicone Landfill Gas Hose).

Gas Pipeline Markers – Juanitta Clem requested that temporary gas pipeline markers be installed. Jeff Marshall stated that warning posts will be temporarily installed at this time.

Juanitta Clem stated that DEP has not formally responded to the letter regarding the four wells with aggregate that did not meet the project specification.

III. INCREMENTAL CLOSURE

Clay Test Strip - John Teague stated that the clay density ranges from 88% – 92% and the permeability ranges from 1.8×10^{-8} to 1.9×10^{-9} cm/sec.

Clay Thickness – Juanitta Clem stated that the thickness of the 1st lift of clay exceeded the minimum 6 inch thickness and requested Baker to trim the clay layer to 8 inches or less (6 inches minimum). Baker agreed to trim off the clay layer to approximately 8" and John Teague will be taking additional samples to ensure that the clay layer meets the project specifications.

Downcomer – Jeff Marshall stated that construction of the downcomer on the western slope is scheduled to begin on February 21, 2002 and the construction of the underlying clay layer will proceed from the bottom to the top. Juanitta Clem stated the shop drawing for the downcomer pipes must be submitted to ETM.

Mike Daniels asked whether National Piping can use SDR 17 pipe for the downcomer. Juanitta Clem replied that she does not object if National Piping prefers to use SDR 17 in lieu of SDR 32.5 pipe.

Time Extension – Juanitta Clem stated that the DEP has not responded to the letter regarding the time extension.

Change Order Request – Juanitta Clem suggested that the change order request be held in abeyance until the project is nearing completion.

The next meeting is scheduled for February 19, 2002 at 2.00 P.M.

Contract Time Used: 93 days

Contract Time Remaining:

Gas System Expansion (85% complete) and Incremental Closure (15% complete): 87 days (not including the time extension since DEP approval is pending.)

cc. Attendees
Greg Mathes Jim Horton
Jimmy Purvis Ken Hagofsky
Chris Pearson Tom Bilgri

**Principals**

James E. England, P.E. CEO
Douglas C. Miller, P.E. President
N. Hugh Mathews, P.E., Exec. VP
Joseph A. Tarver, Exec. VP
Juanitta Bader Clem, P.E., VP
Scott A. Wild, P.E., PSM, VP
Samuel R. Crissinger, CPA, VP
Robert A. Mizell, Jr., P.E., VP
Bryan R. Stewart, VP

**TRAIL RIDGE LANDFILL
INCREMENTAL CLOSURE AND LANDFILL
GAS SYSTEM EXPANSION
CONSTRUCTION MEETING MINUTES**

DATE: February 5, 2002
2:00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:

Neil Rushing	City of Jacksonville
Jeff Marshall	R.B. Baker Construction (Baker)
Jim Horton	LAW Engineering (LAW)
Johnny Teague	LAW
Juanitta Clem	England, Thims & Miller, Inc. (ETM)
Bill Davidson	ETM
Francis Dayao	ETM

I. WEEKLY SCHEDULE

Test Strip – Baker will continue constructing the clay test strip. The first lift of clay should be complete by Wednesday, weather permitting.

Gas System – National Piping is reconstructing the check dams west of the haul road and will continue addressing the Punch List.

II. INCREMENTAL CLOSURE

Clay Test Strip - The construction of the clay test strip was discussed. Since the clay test strip area is twice the required dimension, Juanitta Clem suggested the test strip be divided in half. Juanitta Clem suggested that half the test strip area be compacted with the dozer only and the half, compacted with the dozer and a roller. Juanitta Clem stated that if the first test strip meets the project specifications for density and permeability, construction of the clay layer would proceed faster. Juanitta Clem stated that the second lift of the clay layer must be constructed and meet the project specifications in order for the test strip to be complete. Juanitta Clem stated that five samples per lift are required on each test strip for a total of ten samples. Jim Horton stated that LAW is capable of

running eight samples simultaneously and suggested that 5 samples be taken from the test strip constructed with the dozer and 3 samples from the other test strip. Jeff Marshall stated that he would like to construct the two clay test strips (Note: Subsequent to the meeting, the entire clay test strip was constructed with the dozer and roller, due to construction difficulties with the dozer alone)

Moisture Content – Jim Horton stated that over-mixing the clay will reduce the moisture content and may create problems during construction. Jim Horton requested that Johnny Teague check the clay stockpile for moisture content, prior to Baker placing the clay on the side slopes.

Drainage - The drainage from the western side slopes was discussed. Juanitta Clem suggested that Baker undercut for the downcomers and then backfill with clay to create a clay-lined drainage flume. Jeff Marshall believes that silt will still be a problem even with a clay flume at the proposed downcomer location.

Final Cover Reconstruction – Juanitta Clem reminded everyone that the clay test strip must be acceptable and the project density must be set, before any final cover reconstruction can be performed.

III. LANDFILL GAS SYSTEM EXPANSION

Change Order – Jeff Marshall stated that Baker has not heard from National Piping regarding the change order for the connection of the existing wells to the new header line.

Well Construction Logs – The project specification requires that the well construction logs be certified and it was agreed that the well construction logs will be signed by National Piping.

As-Built Drawing – Jeff Marshall stated that as-built of the landfill gas system (outside the final closure areas) is not complete.

Juanitta Clem stated that DEP has not responded to the letter regarding the four (4) wells with aggregate that did not meet the specification.

The next meeting is scheduled for February 12, 2002 at 2:00 P.M.

Contract Time Used: 86 days

Contract Time Remaining:

Gas System Expansion (excluding Closure Areas): 5 days (95% Complete)

Incremental Closure: 94 days (not including the time extension since DEP approval is pending) (10% complete)

cc: Attendees

Greg Mathes

Jimmy Purvis

Chris Pearson

Cliff Cosby

Mike Daniels

Ken Hagofsky

Tom Bilgri



England-Thimms & Miller, Inc.

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TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

Principals

James E England, P.E., CEO
Douglas C Miller, P.E. President
N Hugh Mathews, P.E. Exec VP
Joseph A Tarver, Exec VP
Juanitta Bader Clem, P.E. VP
Scott A Wild, P.E. PSM VP
Samuel R Crissinger, CPA VP
Robert A Mizell, Jr. P.E. VP
Bryan R Stewart, VP

DATE: January 29, 2002
2:00 P M – 3:30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	Mike Daniels	National Piping
	Johnny Teague	LAW Engineering (LAW)
	Juanitta Clem	England, Thims & Miller, Inc (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Header Pipe Installation - National Piping will continue installation of the remaining header pipe outside the closure areas

Test Strip – Construction of the clay test strip has been rescheduled for Monday, February 4, 2002

II. LANDFILL GAS SYSTEM EXPANSION

Termination Points – National Piping will pressure test the remaining header pipes prior to installing the temporary termination assembly

The adjustment of a portion of the 8" header line (to provide the proper slope) will be performed prior to the tie-in to the 22" header pipe. Juanitta Clem stated that this will be included on the punch list for the February 10 deadline and requested the pipe be covered.

William Davidson stated that the wellheads, flex hose (IT-6000), temperature gauges and surface seals must be installed. Mike Daniels stated that it will take approximately 8 to 10 weeks to receive the IT-6000 flex hose and asked whether National Piping can temporarily install the Kanaflex hose (to make the gas system operational). National Piping agreed to install the Kanaflex hose and replace it with the IT-6000 flex hose at no additional cost. William Davidson cautioned National Piping regarding the length of the hose since the separation between the wellhead and the riser varies. Mike Daniels stated that National Piping will review each well to determine the length of the hose.

Juanitta Clem stated that Tom Bilgri is scheduled to review the gas system tomorrow and she hopes the system outside the closure areas will be operational by the end of the week.

TRLF will provide additional cover material where needed William Davidson will coordinate this with TRLF

As-Built – Baker's surveyor is as-building the gas system outside the closure areas Juanitta Clem stated that the as-built must be received by the end of next week

Rain Delays – Juanitta Clem stated that rain delays will not apply to the gas system, since the gas system work has not been delayed

Calibration – The landfill gas system operator is scheduled to calibrate the system next week Juanitta Clem stated that this will provide National Piping time to complete the system (including installation of the valve, turndowns and construction of a gravel drain at termination points)

Change Order Request No 1 – Juanitta Clem reviewed the supplemental information for the change order which addresses the connection of the existing wells to the replacement header line Juanitta Clem stated that ETM compared the estimate with the actual costs and came up with an additional cost of \$2978 25 (Note This was adjusted subsequent to the meeting to approximately \$3,347 due to an error in the number of connections)

Change Order Request No 2 – Juanitta Clem stated that ETM reviewed the cost to install the additional valve on the header side at each well location Juanitta Clem stated that ETM calculated the actual cost of the well installations based upon the schedule of values and the well logs and revised design well schedule With a straight comparison, ETM had calculated a deduct for the 56 feet of well that was not constructed Taking into account the existing ground elevation, ETM calculated a deduct of 104 feet Juanitta Clem stated that some of the wells were constructed deeper at National Piping's discretion Juanitta Clem suggested that the average of the 56 feet and 104 feet be used to determine the deduct Mike Daniels agreed to review ETM's calculations and compare it with his calculations and will get back with Juanitta Clem (Note Subsequent to the meeting, it has been decided that the additional valve in Change Order No 2 will not be installed)

III. INCREMENTAL CLOSURE

Rain Delays – Jeff Marshall stated that the project has been delayed a total of 17 days due to weather for the month of January Jeff Marshall stated that this includes January 2 – January 4 when Baker returned to the site after the holidays and could not get equipment on the slope due to wet conditions Upon discussion, it was agreed that William Davidson and Jeff Marshall will review their logs on a daily basis if a delay is requested Neil Rushing stated that rain delays cannot be given on days unless DEP considers them a rain delay

The next meeting is scheduled for February 5, 2002 at 2 00 P M

Contract Time Used 79 days

Contract Time Remaining

Gas System Expansion (excluding Closure Areas) 12 days (80-85% Complete)

Incremental Closure 101 days (not including the time extension since DEP approval is pending) (5-10% complete)

cc Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Jim Horton
Cliff Cosby
Ken Hagofsky
Tom Bilgri



**TRAIL RIDGE LANDFILL
INCREMENTAL CLOSURE AND LANDFILL
GAS SYSTEM EXPANSION
CONSTRUCTION MEETING MINUTES**

Principals

James E England PE CEO
Douglas C Miller, PE President
N Hugh Mathews PE Exec VP
Joseph A Tarver Exec VP
Juanitta Bader Clem PE VP
Scott A Wild PE PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr PE VP
Bryan R Stewart VP

DATE: January 22, 2002
2 00 P M – 3 30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	Ken Hagofsky	National Piping
	Mike Daniels	National Piping
	Johnny Teague	LAW Engineering (LAW)
	Juanitta Clem	England, Thims & Miller, Inc (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Header Pipe Installation - National Piping will continue installation of the header pipe and plans to complete the work outside the closure areas this week

Test Strip – Construction of the clay test strip is scheduled for Monday, January 28, 2002

II. LANDFILL GAS SYSTEM EXPANSION

Tom Bilgri of EMCON is scheduled to review the landfill gas system expansion on Tuesday, January 29, 2002 (Note Subsequent to the meeting, Tom Bilgri's schedule to review the gas system has been changed to Wednesday, January 30, 2002) William Davidson will review the gas system before National Piping demobilizes from the site Ken Hagofsky will leave on Friday, January 25 and will return on January 29, 2002 Lee Barnett will remain on site

Landtec Wellhead – Juanitta Clem stated that comments from TRLF regarding the Landtec wellheads has been sent to EMCON for review and comment Juanitta Clem stated the issues regarding the wellheads and hose must be resolved as quickly as possible to avoid delaying the project Juanitta Clem stated that TRLF is concerned about the hose not meeting the specification (and not an approved equal) and the location of the valve on the wellhead Michael Daniels briefly discussed the advantages of the Landtec wellheads and stated he is willing to respond to any comments relating to the Landtec wellhead

Tie-in at North Location - Juanitta Clem stated that the tie-in to the existing 12" header line is not possible since construction of the clay test strip has been delayed due to weather Juanitta Clem stated ETM will monitor the condensate after the turndown and gravel trench have been constructed at the termination points of the header pipes

Calibration – Juanitta Clem stated that the gas system will be calibrated the first week in February by the gas system operator Juanitta Clem stated National Piping must leave all valves in the closed position

Certification - Neil Rushing inquired whether the gas system (outside the closure areas) must be operational by February 10, 2002 Juanitta Clem replied that the system must be operational and RESD will be notified Juanitta Clem stated the as-built of the gas system must be submitted a week before February 10, 2002

Michael Daniels agreed that a portion of the 8" header pipe must be adjusted to provide a minimum 2.5% slope Juanitta Clem asked whether all pipes are covered William Davidson replied that there are some areas where additional cover is required Juanitta Clem requested that William Davidson inform TRLF where additional cover material is needed

Temperature Gauge – Juanitta Clem asked whether a temperature gauge will be installed on each wellhead Michael Daniels stated that a temperature gauge will be installed on each wellhead and presented the temperature gauge Juanitta Clem stated that for monitoring and per the construction drawings, a port must be installed on each side of the valve Michael Daniels stated that National Piping will install a port on each side of the valve

Juanitta Clem stated that the DEP has not reviewed the four wells with the aggregate that did not meet the project specifications

III. INCREMENTAL CLOSURE

Clay Test Strip – Juanitta Clem expressed concern regarding the delay in constructing the test strip and how this impacts the overall construction schedule Juanitta Clem stated that she reviewed the west slopes and found the top slope to be drier A discussion ensued about the differences of cover material and water retention in the swales Juanitta Clem suggested Baker construct a temporary drainage system at the downcomer location using clay Jeff Marshall stated that silt in the swale will still be a problem Juanitta Clem stated the project (including the gas system within the final closure areas) will not progress without the test strip and every effort must be made to construct the test strip

Juanitta Clem stated that ETM will contact the DEP regarding the construction schedule Juanitta Clem stated that although she had discussed this with Mary Nogas and Ms. Nogas agreed with the new closure completion schedule, a formal response from the DEP has not been received Neil Rushing asked whether this will require a Change Order Juanitta Clem replied that a completion date is specified on the agreement and therefore, a Change Order is necessary between TRLF and Baker construction

Trench Safety – Juanitta Clem stressed the importance of adhering to the Safety Plan (and all applicable regulations) regarding trench excavation Juanitta Clem stated due to the existing conditions at the site (including the presence of methane gas in open trenches), personnel safety must be a priority

The next meeting is scheduled for January 29 at 2:00 P.M.

Contract Time Used 72 days

Contract Time Remaining

Gas System Expansion (excluding Closure Areas) 19 days (80-85% Complete)

Incremental Closure 108 days (not including the time extension since DEP approval is pending) (5-10% complete)

cc

Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Jim Horton
Cliff Cosby
Tom Bilgri



Principals

James E. England PE, CEO
Douglas C. Miller PE, President
N. Hugh Mathews PE, Exec. VP
Joseph A. Tarver, Exec. VP
Juanitta Bader Clem PE, VP
Scott A. Wild PE, PSM, VP
Samuel R. Crissinger CPA, VP
Robert A. Mizell Jr. PE, VP
Bryan R. Stewart, VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: January 15, 2002
2:00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R.B. Baker Construction (Baker)
	Ken Hagofsky	National Piping
	Cliff Cosby	LAW Engineering (LAW)
	Johnny Teague	LAW
	Juanitta Clem	England, Thims & Miller, Inc. (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Header Pipe Installation - National Piping will continue installation of the header pipe

Test Strip – Construction of the clay test strip is scheduled for Monday, January 21, 2002

II. LANDFILL GAS SYSTEM EXPANSION

Header Line Construction – Jeff Hagofsky stated the all header lines east of the haul road have been constructed. The replacement header lines have been connected to the existing header line at the haul road and the two southernmost header lines, east of the haul road have been temporarily capped. A 150-ft section of the 6" header line (in the vicinity of Well T-23) west of the haul road has been constructed. National Piping will continue construction of the western header line this week. Juanitta Clem requested the completion schedule for the gas system outside of the closure areas. Ken Hagofsky replied that the system should be complete by next week, weather permitting. Juanitta Clem stated that gate valves and turn downs (with gravel drain) must be constructed at the termination points of the header lines.

Jeff Hogofsky stated that National Piping will tie-in the northern 6" header line to the existing 12" header. Juanitta Clem stated the clay test strip must be complete and the density set (based upon the test strip), prior to reconstruction of the existing final cover. Juanitta Clem stated weather permitting, it would be preferable for Baker to proceed with the construction of the clay test strip on Friday, January 18, so LAW will have preliminary test results by next Tuesday. Jeff Marshall inquired about the clay specification for the reconstruction of the existing final cover. Juanitta Clem replied the clay

will have the same specifications as the clay for the closure construction. Juanitta Clem asked whether National Piping plans to extend the 12" header (on the west slope) to the limits of closure construction. Ken Hagofsky replied that they plan to extend the 12" header. Jeff Marshall asked whether the 12" pipe must be placed on top of the clay layer. Juanitta Clem explained that the header pipe must have 1.5 feet of cover and since the existing clay layer is approximately 2 feet lower than the clay layer that will be constructed, a transitional area (approximately 10 feet) must be constructed. Juanitta Clem explained that if the header pipe is not laid on top of the clay layer, more vegetative cover will be required. Juanitta Clem agreed with Ken Hagofsky that the 12" pipe must be extended approximately 35 feet from the existing flange prior to the Tee fitting for the 6" header tie-in.

GCL Placement – Juanitta Clem stated that for the temporary wells, the GCL should be placed 18" below final grade and for the permanent wells, placement of the GCL must be per the design detail on the construction plans.

Wellhead Hose – Juanitta Clem stated that upon review of the proposed hose, it appeared the hose is not consistent with the hose currently in use. Juanitta Clem asked whether the hose was supplied with the Landtec wellhead. Ken Hagofsky stated that he believes the hose came from Landtec. Juanitta Clem stated that she will review the specification for the hose and the shop drawing from the previous project.

Juanitta Clem stated that the DEP has not reviewed the four wells with the aggregate that did not meet the project specifications. Juanitta Clem stated that a permit modification may be required by the DEP.

As-Builts – Jeff Marshall stated that Baker is planning to as-built the gas system next week. Juanitta Clem stated that the as-built of the system outside of the final closure areas must be complete a week before the February 10, 2002 deadline. It was agreed that EMCON needs to review the gas system now and ETM will contact EMCON. Ken Hagofsky asked whether the wells will be opened by National Piping after the header line is complete and tied to the existing gas system. Juanitta Clem replied that she would discuss this with TRLF. (Note: Subsequent to the meeting, it was determined that the gas system operator for TRLF will open the wells and calibrate the system the first week of February.)

III. INCREMENTAL CLOSURE

Jeff Marshall stated that TRLF removed the isolated solid waste and replaced it with clean soil on the western slope. Baker has been grading the side slopes. Upon discussion, it was agreed that Baker will submit a memo to Neil Rushing indicating the number of days the construction was delayed due to the removal of the solid waste on the western slope. Neil Rushing requested that he be informed if Baker believes that TRLF has delayed construction so he can inform Greg Mathes.

Regarding the construction schedule, Juanitta Clem stated that Mary Nogas of the DEP has not reviewed the letter from ETM but she agrees that the construction schedule will be based upon the date of final waste placement.

The next meeting is scheduled for January 22 at 2:00 P.M.

cc Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Michael Daniels
Jim Horton
Tom Bilgr



England-Thims & Miller, Inc.

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Principals

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Douglas C. Miller, P.E., President
N. Hugh Mathews, P.E., Exec. VP
Joseph A. Tarver, Exec. VP
Juanitta Bader Clem, P.E., VP
Scott A. Wild, P.E., P.S.M., VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: January 8, 2002
2:00 P.M. – 3:30 P.M.

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No. E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R.B. Baker Construction (Baker)
	Ken Hagofsky	National Piping
	Mike Daniels	National Piping
	Steve Martin	National Piping
	Jim Horton	LAW Engineering (LAW)
	Johnny Teague	LAW
	Cliff Cosby	LAW
	Juanitta Clem	England, Thims & Miller, Inc. (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Header Pipe Installation - National Piping will continue installation of the header pipe.

Test Strip - Baker will continue preparing the area where the clay test strip will be constructed.

II. LANDFILL GAS SYSTEM EXPANSION

Header Line Tie-in (West) - Juanitta Clem stated that there were questions regarding the 6" header line tie-in from Well T-22 to the 12" header line. Juanitta Clem stated that she had discussed the tie-in with EMCON and it was decided that the 6" header line will tie-in to the 12" header line north and within the existing closure area (outside the proposed closure area). Juanitta Clem stated that at Baker's discretion, National Piping may proceed with the tie-in since there is existing final cover within this area. Juanitta Clem explained that the southern 8" header line will tie-in to the 12" header line south of the proposed closure area. By moving the header line to the south of the proposed closure area, Juanitta Clem stated that the design slope of 3% can be achieved.

Header Line Tie-in (East) – Juanitta Clem stated that the 8" header line tie-in to the 22" header line will be south and outside of the proposed closure area. William Davidson stated that the terrace crossing will be typical (as shown on Detail C/G6 of Sheet G6). Juanitta Clem asked whether National Piping has determined the invert elevation of the 22" header pipe at the tie-in. Ken Hagofsky replied that the elevation has not been determined. Juanitta Clem stated that ETM calculated the invert elevation of the 22" header line to be El 193.5 ±. William Davidson stated that this elevation is approximate and the National Piping should determine the elevation. The location of the high point on the 6" header line west of the haul road was discussed. Juanitta Clem stated that the high point is not a fixed point and may be shifted in order to achieve the design slope. William Davidson cautioned National Piping that shifting the high point either to the east or west will affect the depth of excavation of the trench and the cover on the header pipe and should be reviewed closely.

Juanitta Clem stated that there may be instances where header pipes will come out of the ground. Juanitta Clem stated this will be acceptable only if the pipe can be covered with a maximum of 18" of cover. Anything greater than 18" is not acceptable.

The connection of the 6" header line from Well T-29 to the 22" header line was also discussed. National Piping has the option to either connect to the existing 6" lateral from Well T-29 or tie-in to the existing 22" header line. Juanitta Clem stated that if National Piping decides to tie-in to the 22" header line, the existing areas with final cover that will be disturbed, including the terrace, must be repaired. Mike Daniels stated that they will tie-in to the 6" lateral. Mike Daniels asked whether the 6" lateral is on top of the clay. Juanitta Clem replied that the 6" lateral was required to be constructed on top of the clay layer.

Since the gas system within the final closure areas will not be constructed until the clay layer has been constructed, Juanitta Clem stated that she spoke with EMCON and they have decided that the new header lines (outside the limits of closure construction) must be temporarily capped approximately 50' from the closure areas. Juanitta Clem stated that a flange and gate valve should be installed on each end of the header pipe. Juanitta Clem stated that a turndown and a gravel pit should be constructed in order to properly drain the gas condensate. Mike Daniels stated that he does not think a lot of condensate will be generated from the time the ends are capped and the actual tie-in. Mike Daniels estimated that the actual tie-in of the header pipes will occur within a week after the ends have been capped. Juanitta Clem stated that it may take longer than a week since the clay test strip has not been constructed. Whether or not a turndown is necessary will be re-evaluated as the project progresses. Upon discussion, it was agreed that the gate valves will be removed and installed at the plan location during the actual tie-in to the 12" and 22" header pipes.

Juanitta Clem stated that the gas system outside the final closure areas must be completed and operational by February 10, 2002. Mike Daniels asked whether the wells located within the final closure areas must be operational by February 10, 2002. Juanitta Clem replied the wells within the final closure areas do not have to be operational by February 10, 2002.

Existing Laterals – Juanitta Clem stated that the laterals installed by TRLF that were broken off by National Piping during construction of the new header lines must be properly capped. Since ETM does not know where the laterals tie into the headers, Juanitta Clem requested that William Davidson discuss this with TRLF and locate the tie-ins. Juanitta Clem expressed concern that if the laterals are not capped, air will be pulled into the system.

GCL – Juanitta Clem stated that the placement location of the GCL for the permanent wells is clearly showed on the construction drawings. However, it is unclear for the temporary wells. Juanitta Clem stated that she will discuss the location of the GCL on the temporary wells with

EMCON Steve Martin stated that it is not normal procedure to install the GCL on temporary wells

Mike Daniels requested the status on the four wells Juanitta Clem stated that ETM has not received a response from the DEP regarding the four wells or the final waste placement and the construction schedule Juanitta Clem stated that she will contact Mary Nogas (DEP Solid Waste Section Supervisor)

III. INCREMENTAL CLOSURE

Clay Borrow Pit – Jim Horton provided Baker with the Clay Pre-Qualification form for signature Jim Horton stated that the percent compaction of the three clay samples were 93%, 91% and 94% Further, the permeability test results were better than what is required in the specifications Jim Horton stated that the clay material is encouraging, even with percent fines of 48% and 49%. Jeff Marshall stated that the area towards the east end of the site appeared to be more favorable. (Note After the meeting, LAW provided ETM with the Clay Borrow Source Pre-Qualification)

Test Strip – Jeff Marshall stated that Baker is planning on constructing the clay test strip on Monday, January 14, 2002 William Davidson stated that he will coordinate the survey schedule and asked Baker whether the initial cover on the entire western closure area will be ready for as-builts Jeff Marshall replied that the test strip and some areas will be ready but not the entire side slope William Davidson stated that he will coordinate the as-builts. Jeff Marshall stated that there are some areas on the western side slopes where solid waste has been mixed with the initial cover Juanitta Clem agreed to review the area in the field after the meeting (Note Subsequent to the meeting, the area where solid waste was observed was reviewed and it was decided that the extent of the unacceptable solid waste/initial cover mix must be determined Once the limits have been determined, TRLF must remove the solid waste and replace it with clean material)

Shop Drawings – Approved shop drawings for the wellhead and bentonite mat were provided to National Piping and Baker after the meeting

The next meeting is scheduled for January 15 at 2 00 P M

cc Attendees
Greg Mathes
Jimmy Purvis
Chris Pearson
Tom Bilgri



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Juanitta Bader Clem PE VP
Scott A Wild PE PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell, Jr PE VP
Bryan R Stewart VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: December 18, 2001
2 00 P M – 3 30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	Ken Halofsky	National Piping
	Jim Horton	LAW Engineering (LAW)
	Johnny Teague	LAW
	Cliff Cosby	LAW
	Juanitta Clem	England, Thims & Miller, Inc (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Header Pipe Installation - National Piping will continue installation of the header pipe

II. LANDFILL GAS SYSTEM EXPANSION

Wells – Juanitta Clem requested the status of well construction Jeff Marshall replied that all wells have been drilled and backfilled Juanitta Clem requested all well construction logs be submitted to ETM before National Piping leaves the site on Thursday, December 20 for the holidays William Davidson stated that there are at least four well logs that have not been submitted Juanitta Clem stated that William Davidson will review all well construction logs and they need to be completed this week

Header Pipe Installation – Juanitta Clem requested the status on header pipe installation Ken Halofsky replied that the southern header pipe replacement has been installed Juanitta Clem asked whether the header pipe replacement has been connected to the existing header line Ken Halofsky replied that the header pipe will be pressure tested this morning and if it passes the test, the tie-in should be made today Ken Halofsky stated that National Piping will continue with installation of the northern header pipe replacement and will try to finish it by Thursday

Juanitta Clem stated that Well T-2R must be operational by January 1, 2002. Ken Halofsky replied he will have the well connected and operational before they leave on December 20, 2001. Juanitta Clem stated that at the last meeting, it was discussed that the elevation of Well T-2R is lower than the elevation of the header pipe at the tie-in. ETM discussed this with TRLF and based upon the discussion, it was agreed that TRLF will build up the area around the well rather than construct a remote well. William Davidson stated that TRLF plans to have the area built up by Friday. National Piping will have the lateral connected to the header line before December 20, 2001. Juanitta Clem stated that TRLF can work on this area after National Piping leaves the site on Thursday and requested William Davidson coordinate the work with Jimmy Purvis.

Wellhead Shop Drawing - Francis Dayao stated that EMCON has approved the proposed LANDTEC wellhead and 2-inch wellheads will be used on all of the wells. Juanitta Clem requested Francis Dayao call EMCON and have EMCON send an original approved copy of that shop drawing. Juanitta Clem requested a copy of the approved shop drawing be provided to Ken Halofsky today, so National Piping can order the wellheads. (Note: A copy of the approved wellhead was provided to Ken Halofsky after the meeting.)

Aggregate - Juanitta Clem stated that ETM has not received a response from the DEP regarding the four wells with aggregate that did not meet the FDOT #3 specification.

Header Pipe Layout - Juanitta Clem asked whether National Piping has done any header pipe layout for the remaining header lines to determine what needs to be done. Jeff Marshall replied that he received a letter from Mike Daniels regarding the six-inch header for Wells T-22, T-23, T-24 and T-26. Jeff Marshall read the letter which included proposals to eliminate the piping between wells T-22 and T-23 until sufficient material is placed and placing the 6" header line on top of the ground as a temporary line (where the required slope cannot be achieved until sufficient fill is placed in that area). Juanitta Clem asked whether the required 3% slope will be achieved in the remaining header lines. Jeff Marshall stated that he believes that those are the only lines that are of concern to National Piping and that he is assuming that everything else will be field fit. Juanitta Clem asked whether an actual survey of the header pipe route was conducted. Jeff Marshall replied that Baker conducted a survey for National Piping. Juanitta Clem stated that the survey information should be reviewed to determine if other header lines will meet the 3% slope. Jeff Marshall stated that only the two western header lines have been surveyed so far. Juanitta Clem stated that the header lines located east of the haul road must also be reviewed. Juanitta Clem reviewed the letter from National Piping and asked whether or not Mike Daniels meant the 6" line between T-22 and T-23, since T-26 and T-22 are not located on the same side of the haul road. National Piping's proposal was reviewed and Juanitta Clem stated that she will discuss this with EMCON and will get back with Baker and National Piping.

Change Order Request - Juanitta Clem expressed her dissatisfaction with the Change Order request and stated that she finds it ridiculous to design a replacement header line and not connect the existing wells to the new header line. Juanitta Clem stated that it is hard to believe that the cost of connecting each well to the header line is over \$1000. Juanitta Clem stated that ETM estimated the cost of connecting all seven wells to the header line at less than \$5000. Jeff Marshall stated he has a cost breakdown that he can review with Juanitta Clem. Jeff Marshall stated that it will take 1 hour per tie in and that the cost is mainly due to labor that includes the loader, tractor, welder, etc. The total cost was calculated to be \$998 per well plus a 10% mark-up by Baker. Jeff Marshall stated that Juanitta Clem may send a letter to Baker indicating that she does not agree with the cost of connecting the wells and Baker will forward the letter to National Piping. Although a Change Order request has been submitted, Jeff Marshall stated that National Piping has not stopped connecting the existing wells to the replacement header line. Neil Rushing asked Juanitta Clem whether she feels that the engineering directions are present in the specifications and the drawings. Juanitta Clem replied that since the gas system expansion was

designed by EMCON, she had to ask Tom Bilgri whether it is a legitimate Change Order request. Juanitta Clem stated that the response from EMCON was that there was nothing that specifically states that the wells will be connected. The Change Order request was discussed further and Juanitta Clem stated that Baker must include a deduct in the Change Order for well depth that was not installed. Jeff Marshall stated that he believes that National Piping's response to the "deduct" is that the materials for the wells may be on site and have been slotted. Juanitta Clem stated that she believes that it is fair to pay for the materials on site that cannot be returned. William Davidson stated that he does not believe that there is extra pipe on site. Juanitta Clem added that extra materials must be verified before it can be invoiced.

Haul Road Crossing (East of T-25) – Juanitta Clem stated that Baker may cross the existing downcomer pipe or where the future downcomer pipe will be located to get the header line across the haul road. Juanitta Clem stated that if Baker decides to install the header pipe where the future downcomer will be located, it must be installed to a depth that will accommodate the future downcomer. William Davidson stated that EMCON does not have any preference.

Jeff Marshall stated that National Piping expressed their concern to Baker regarding their additional expense incurred to tie-in the northernmost replacement header line. Jeff Marshall stated that the cost was for the additional piping (approximately 100 LF). William Davidson stated that at one of the meetings, Mike Daniels stated that he would prefer additional piping rather than excavate a 30-foot excavation for the tie-in. Jeff Marshall stated that the actual tie-in was approximately 13 feet deep. Juanitta Clem stated that this project is a lump sum project and not a time and materials project. Juanitta Clem stated that everyone was informed at the Pre-Bid Conference that the survey was not new and opportunities were given to review the site. Juanitta Clem stated that Baker needs to make sure their sub-contractor understands that the project is a lump sum project.

III. INCREMENTAL CLOSURE

Test Strip – Juanitta Clem requested the status of the test strip. Jeff Marshall replied that TRLF started replacing the initial cover. Baker plans to roll the initial cover this week. Jeff Marshall stated that the test strip may not be conducted before the Christmas break. Juanitta Clem stated that if by chance, Baker decides to construct the test strip, adequate notice must be provided to ETM so they coordinate the survey schedule.

Clay Borrow Pit – LAW is close to having all the data for the borrow pit pre-qualification. Jim Horton stated that the Clay Pre-Qualification form must be signed by Baker. Jim Horton stated that the clay pit will not be monitored on a full-time basis. Juanitta Clem agreed that all of the clay testing is done on site and not at the pit. Jim Horton added that the pit will be visited by LAW periodically. Juanitta Clem stated that William Davidson will occasionally visit the clay pit as well.

Letter to DEP – Juanitta Clem provided a copy of a letter from ETM to DEP regarding the final waste placement and the construction schedule for the incremental closure.

Jeff Marshall provided a copy of the construction schedule for January 2002.

The next meeting is scheduled for January 8 at 2:00 P.M.

cc

Attendees
Chris Pearson
Greg Mathes
Jimmy Purvis

Michael Daniels
Tom Bilgri



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Scott A Wild P.E. PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr. P.E. VP
Bryan R Stewart VP

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

DATE: December 11, 2001
2:00 P M – 3:30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Jimmy Purvis	Trail Ridge Landfill, Inc (TRLF)
	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	Mike Daniels	National Piping
	Lee Barnett	National Piping
	Ken Habofslty	National Piping
	Jim Horton	LAW Engineering (LAW)
	Johnny Teague	LAW
	Cliff Cosby	LAW
	Juanitta Clem	England, Thims & Miller, Inc (ETM)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Well Drilling – National Piping will continue with well installation. Mike Daniels stated that there are seven (7) gas extraction wells remaining to be installed. The wells that have been installed to date do not have wellheads at this time. (Note: The shop drawings for the proposed wellhead (LANDTEC) and the bentonite mat, requested on November 26, 2001, have not been submitted.)

Header Pipe Installation – National Piping will begin trenching and header placement this week, weather permitting. Baker's survey crew will stake out the header line location. M. Daniels plan to start header placement at the tie-in points. If the design slope of 3% cannot be achieved due to field conditions, M. Daniels asked if a minimum slope of 2% is acceptable. J. Clem stated that the survey information must be reviewed first to determine if there are any areas where the design slope cannot be achieved. J. Clem requested that the survey information be submitted to ETM as soon as possible. Field adjustments of the header pipes from its plan location (to meet the design slope) must not be performed without approval.

II. LANDFILL GAS SYSTEM EXPANSION

Pipe Bedding Material – J. Clem stated that she was informed that National Piping was considering using the material from Maxville borrow pit and asked National Piping whether or not the required density will be obtained with this material. J. Clem stated that due to the nature of the material, she is concerned that the required density may not be readily achieved. M. Daniels stated that it will be difficult to achieve the required density on any material that is placed on solid waste. J. Clem stated that compaction of the pipe bedding material was achieved in the previous project. M. Daniels asked John Teague if he can assist National Piping after the meeting to test the material using a sample from the stockpile at the top of the landfill. J. Teague replied that he will be available to assist National Piping. J. Clem reiterated her concern regarding the proposed sand bedding material. National Piping is scheduled to begin trenching tomorrow and will require J. Teague to be on site on a full-time basis. M. Daniels stated that once the trenching equipment arrives on site, they will proceed with trenching. Jim Horton stated that J. Teague will anticipate coming to the landfill tomorrow. William Davidson stated that when the proposed bedding material is dry, it is workable, however, when the material is wet, it takes a long time for the material to dry. J. Clem asked if there is a backup source for the bedding material. M. Daniels stated that they do not have an alternate source at this time. J. Marshall stated that Baker has a pit that he will use for the underdrain sand which would be a backup source for the bedding material.

J. Clem stated that ETM has not heard from the DEP regarding the four (4) wells with aggregate material that did not meet the FDOT No. 3 specification. She stated that a permit modification may be required by the DEP.

Change Order for Well Connections – J. Clem stated that a Change Order has been submitted by Baker for the connection of the existing wells to the new header line. J. Clem stated that she thought the connection of the existing wells was included in the Bid Proposal. Mike Daniels replied that the connection of the existing wells to the new header line was not shown on the construction drawings and the construction drawings take precedence over the project specifications. J. Clem stated that ETM reviewed the well schedule and determined that the supplemental wells were constructed shallower than originally designed which will warrant a deduct. M. Daniels added that he still has seven (7) wells left to be installed. M. Daniels stated that the Pre-Construction Minutes indicated that the existing header lines will remain in place. J. Clem replied that in response to a question at the Pre-Bid Meeting, it was explained that the existing header line did not require removal. Since the existing header line was about 40' to 50' deep from existing grade, the header line must remain in place. Jeff Marshall suggested that it be acknowledged that there is a valid Change Order request and it will be dealt with towards the end of the project. Neil Rushing stated that a decision cannot be made today regarding the Change Order request. J. Clem stated that she will review the request and will get back with Baker.

Well T-2R – M. Daniels stated that Well T-2R will be located along the northern side slope and if they proceed with connecting the well to the new header line, condensate will flow back into the well. M. Daniels and Lee Barnett suggested remote well heads so condensate will flow into the header line. Juanitta Clem stated that this will be discussed with EMCON. (Note: Subsequent to the meeting, National Piping was reminded that replacement Well T-2R must be functioning by January 1, 2002 as discussed at the November 26 meeting.)

Juanitta Clem stated that all header pipes that will be constructed within the closure areas will be constructed above the clay layer (which means that the clay layer may have to be adjusted to accommodate the header).

Aggregate Testing – M Daniels asked the reason for testing the aggregate at the site since the aggregate has already been tested at the source. J Clem stated that since there is no chain of custody, the aggregate must be sampled on site. Testing of the remaining aggregate was discussed further. J Clem requested that Baker coordinate with LAW sampling of the aggregate to avoid delay. Jim Horton requested that adequate notice be provided to J. Teague. M. Daniels stated that approximately 100 tons (approx 50 CY) of aggregate is expected to be delivered.

III. INCREMENTAL CLOSURE

Weather Delays – J Marshall asked J Clem to explain weather delays. J Clem explained that both the average monthly rainfall and the average number of days with rainfall events greater than ½" must be exceeded before a weather delay is allowed. For December, J Clem explained that the average monthly rainfall is 2.80" and the average number of days with rainfall events greater than ½" is 2 days. J. Clem stated that Sundays do not count since they are not normal workdays. However, if it rains on a Sunday and impacts Monday, then Monday will count. When requesting a contract time extension, Baker must also provide a description of how the weather delayed progress of work. All request for contract time extensions must be submitted by Baker to ETM and ETM will submit the request to the City and DEP. J Clem asked Baker to maintain a rainfall log on a daily basis and compare it with W Davidson's log. The rainfall log must include the work that was impacted. W Davidson stated that he normally reads his gauge at 8:00 A.M.

J Clem stated that ETM has received letters (dated November 30, December 6 and 10) from Baker requesting clarification regarding the initial cover, density requirements on the initial cover and final grade of topsoil (settlement after certification).

Initial Cover and Density – In response to Baker's letters dated November 30 and December 6, J Clem stated that she requested LAW perform field density testing of the existing initial cover on the western side slopes and the results were sporadic. With these results, J Clem stated that there is no alternative but for TRLF to remove and replace approximately 6" of the initial cover. Jimmy Purvis stated that they tried compacting an area with a roller and the density results were still sporadic after 10 passes with the roller. J Clem stated that Greg Mathes will be back tomorrow and she will discuss this with him. J Clem requested Baker delineate a test strip location immediately and TRLF will proceed with the initial cover replacement in that area. TRLF agreed to remove and replace the initial cover so Baker can get started with the test strip. Baker agreed to construct the test strip on Side Slope Unit 22, near the northern limits. Jim Horton reminded Baker that the density for the project will be based upon the results of the test strip. J Marshall asked whether the contract time for the incremental closure may be extended. J Clem stated that she notified the DEP regarding the start of the incremental closure and that she will review the notification.

Final Grade of Topsoil – In response to Baker's letter dated December 6 regarding the topsoil, J Clem explained that the top of the initial cover will be as-built, the thickness of both layers of the clay will be verified and the top soil will be checked for thickness and as-built. If settlement occurs after the initial cover has been as-built and all the thickness have been verified, J Clem explained that in the past, the DEP was informed of the settlement and the closure was accepted. J Clem explained that the uppermost side slope units may have settlements since the waste has been recently placed.

Clay Tie-in – J Marshall stated that the existing final cover at the western slopes (uppermost side slope unit) has settled considerably at the tie-in and may result in a "belly" after closure construction. J Clem referred Baker to the tie-in detail shown on Drawing No. 10 of the construction plans. J Clem explained that there will be a 10' transitional area between the

existing final cover and the current closure. For the western side slope, the 10' transitional area will be 10' south of the clay tie-in. J. Purvis requested they review the tie-in in the field after the meeting. J. Purvis requested the depth of the existing gas header pipe within the areas with final cover. J. Clem replied that all existing gas header pipes are located above the clay layer and that all gas header pipes and laterals that will be constructed within the closure areas will be constructed above the clay layer.

Clay Pre-Qualification – LAW reviewed the results of the clay with Baker and it was determined where the clay will be excavated within the pit.

The next meeting is scheduled for December 18, 2001 at 2 00 P M

cc: Attendees
Chris Pearson
Greg Mathes
Tom Bilgri



TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

Principals

James E England PE CEO
Douglas C Miller PE President
N Hugh Mathews, PE Exec VP
Joseph A Tarver Exec VP
Juanitta Bader Clem PE VP
Scott A Wild PE PSM VP
Samuel R Crissinger CPA VP
Robert A Mizell Jr PE VP
Bryan R Stewart VP

DATE: December 4, 2001
2 00 P M. – 3 30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Jimmy Purvis	Trail Ridge Landfill, Inc (TRLF)
	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	Mike Daniels	National Piping
	Lee Barnett	National Piping
	Johnny Teague	LAW Engineering (LAW)
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Well Drilling – National Piping will continue with well installation

Header Pipe Installation – National Piping will begin trenching and header placement on December 7, 2001

II. LANDFILL GAS SYSTEM EXPANSION

Backfill Material – Francis Dayao stated that ETM has not heard from the DEP regarding the four (4) wells with aggregate material that did not meet the FDOT No 3 specification

Revised Well Schedule – F Dayao handed out copies of the revised well schedule for the supplemental wells

Initial Cover – William Davidson stated that LAW will be performing density tests on the initial cover on the western side slopes Jeff Marshall stated that he wanted to discuss his concerns with Juanitta Clem regarding the initial cover and the settlements of the clay and topsoil that may occur after the project has been certified

Aggregate – F Dayao stated that National Piping is screening the aggregate and requested a sample of the screened material be taken as soon as possible for gradation testing F Dayao asked whether LAW will have the gradation test result ready by tomorrow morning J. Teague replied that he does not know what the lab is working on at this time and he cannot tell for sure if

the result will be ready by tomorrow morning M. Daniels stated that there is approximately 260 tons of aggregate on site and that 40% of the material will be lost from screening Approximately 50 - 60 tons of aggregate has been placed in the holes according to Michael Daniels.

Clay Pre-Qualification – J Teague stated that LAW is testing the clay sample Results should be ready by next week

III. INCREMENTAL CLOSURE

Eastern Side Slopes – W Davidson stated that TRLF may finish grading the initial cover in the next couple of days J Marshall stated that once the initial cover is ready for review, he will start performing thickness checks J Marshall stated that he cannot accept the initial cover until the issue regarding the initial cover has been resolved W Davidson stated that he was informed that TRLF will be using clean material (sand) on the eastern slopes.

Western Side Slopes – W Davidson stated that he will review the area that has settled with F. Dayao after the meeting W Davidson stated that this area is where the final cover will have to be reconstructed due to construction of the header pipes W Davidson stated that he had reviewed the tie-in with Jimmy Purvis and that J Purvis wanted the clay tie-in to be leveled

Density Testing – W Davidson stated that J Teague will be performing density testing on the initial cover on the western side slopes

Header Line Tie-in – W Davidson stated that M Daniels was considering starting at the tie-in Jimmy Purvis stated that in the past, the contractor started at the high point and not at the low point Jimmy Purvis stated that if you start at the tie-in, you may have some problems when you get to the top area where the pipe may end above the existing ground M Daniels stated that the tie-in points are fixed points and cannot be adjusted M Daniels stated that the location of the high points will be determined once the stakes has been set

F Dayao asked if everything is clear on the header line tie-in for the supplemental wells (i.e., T-1U) M Daniels replied that he had submitted a change order to Baker to tie-in the existing wells to the new header line W Davidson stated that he thought that the tie-in of the existing wells to the new header line was discussed at the Pre-Bid Conference J Marshall stated that he had the impression that the wells will be abandoned W Davidson stated that the wells are still functioning and will remain functional and only the header line will be abandoned in place W Davidson stated that he believes this has been discussed at the other meetings M Daniels stated that the connection of the existing wells to the new header line was not shown on the construction drawings and the plans take precedence over the project specifications

Connections – M Daniels asked whether flanged connections or electrofusion connections are acceptable methods for connecting the pipes at the tie-in where space for the equipment may be limited F Dayao replied that ETM will discuss this with EMCON

Compaction of Sand Bedding Material – W Davidson stated that density testing of the bedding material will proceed per the specifications W Davidson asked National Piping their source for the sand bedding material M Daniels replied that he had discussed with Jimmy Purvis the possibility of getting the sand bedding material from TRLF's pit J Purvis explained that he needs to discuss this with Greg Mathes Neil Rushing requested J Purvis to get an answer as soon as possible to avoid any delay W Davidson explained that the material has a lot of fines and when it gets wet, the material becomes a problem W Davidson stated that the sand comes out of the pit wet and National Piping may have difficulty working with the material J. Purvis

stated that he will get an answer as soon as possible and will get back with M Daniels Neil Rushing stated that he will get an answer from the City by tomorrow.

Header Pipe Connection along Haul Road – W. Davidson stated that all parties must agree on how the connection between the 8” and the 10” pipes will be conducted (due to the existing downcomer and rip rap) prior to the actual tie-in W Davidson stated that he will also discuss this with J Clem W Davidson stated that if the 8” line will go over the existing downcomer, cover will be an issue W Davidson stated that he does not want this to become a problem when it comes time to extend the downcomers

Downcomer D-2 – W Davidson stated that Downcomer D-2 will be extended to Terrace T-4 and will have side drains at Terrace T-4 and asked National Piping if they are aware of this. M. Daniels agreed

Underdrains – Baker requested clarification regarding the underdrain F Dayao stated that Side Slope Units 1 and 21 will not have the 6” underdrain. However, Units 2 and 22 will have the 6” underdrain. W Davidson showed the location of the underdrains as shown on Sheet 2 of the construction drawings.

Revised Schedule of Values – J Marshall stated that a Revised Schedule of Values will be submitted.

Pollution Prevention Plan – W Davidson asked Baker if this is an issue since National Piping does not want to sign the Contractor’s Certification J Marshall replied that this is not an issue.

Fabricated Fittings – M Daniels explained that anything bigger than an 8” pipe needs to be fabricated (fittings) and asked if fabrication is acceptable. F Dayao replied that he will contact T. Bilgri and get back with M Daniels

F Dayao asked who is the Safety Monitor National Piping stated that Lee Barnett is the Safety Monitor for the landfill gas system construction F Dayao requested that open well holes must be protected at all times to prevent a fire since some of the open holes are close to the active working area National Piping took note F Dayao reminded National Piping that shop drawings for the Landtec wellhead and bentonite mat have not been submitted M Daniels asked whether the bentonite mat will be placed in the temporary wells W Davidson stated that all wells that will be installed will have the bentonite mat

M Daniels stated that National Piping is required to verify whether there is at least 2’ of cover on areas where the header pipes will be located M Daniels stated that it is a lot quicker to excavate soil material rather than solid waste and that they plan on saving the excavated soil material that can be used for backfill J Purvis stated that there is a minimum of 18” of cover in the general areas where the gas system will be constructed W Davidson stated at least a 4’ (minimum) trench will be excavated for the header lines

Sounding Cable – M Daniels asked the specification for the sounding cable F Dayao replied that the cable must be a 10 gauge insulated copper wire.

The next meeting is scheduled for December 11, 2001 at 2 00 P M

cc

Attendees
Chris Pearson
Greg Mathes
Juanitta Clem

Jim Horton
Tom Bilgri



England-Thimms & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

TRAIL RIDGE LANDFILL INCREMENTAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION CONSTRUCTION MEETING MINUTES

Principals

James E. England, P.E., CEO
Douglas C. Miller, P.E., President
N. Hugh Mathews, P.E., Exec. VP
Joseph A. Tarver, Exec. VP
Juanitta Bader Clem, P.E., VP
Scott A. Wild, P.E., PSM, VP

DATE: November 26, 2001
1 00 P M – 2 30 P M

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
ET&M Project No E00-117-04

ATTENDEES:	Greg Mathes	Trail Ridge Landfill, Inc (TRLF)
	Neil Rushing	City of Jacksonville
	Jeff Marshall	R B Baker Construction (Baker)
	John Solich	Baker
	Mike Daniels	National Piping
	Steve Martin	National Piping
	Lee Barnett	National Piping
	Angela Krueger	EMCON/OWT
	Jim Horton	LAW Engineering (LAW)
	Cliff Cosby	LAW
	Bill Davidson	ETM
	Francis Dayao	ETM

I. WEEKLY SCHEDULE

Construction Schedule – Jeff Marshall and Michael Daniels provided ETM with the construction schedule for the closure and landfill gas system expansion

Mobilization – Based upon the project schedule, Baker will complete their mobilization by December 2

Well Installation – National Piping is scheduled to start well installation on November 27, 2001

Preliminary Survey – Baker's survey crew is currently setting stakes for well locations. The survey will take approximately 2 to 3 days.

Borrow-Pit Pre-qualification – The testing is scheduled for tomorrow

Test Strip – Construction of the test strip is scheduled to begin on December 9

Construction Trailer – Jeff Marshall stated that he should have the quotes for the construction trailer by 3 00 P M. Francis Dayao requested Baker provide the quotes to Greg Mathes.

(Subsequent to the meeting, it was decided that the construction trailer will not be purchased at this time and that Baker will proceed with providing a trailer per the contract.)

II. LANDFILL GAS SYSTEM EXPANSION

Steve Martin stated that National Piping would like to utilize a LANDTEC Pre-manufactured wellhead for the project. Angie Krueger stated the LANDTEC is acceptable since it meets the NSPS requirement and that it will be easier to install. Angie Krueger requested Steve Martin fax the shop drawing to EMCON and ETM for review. Francis Dayao requested National Piping send ETM an original shop drawing for the LANDTEC. Francis Dayao asked how the LANDTEC compare with the wellhead shown on the construction plans. Steve Martin replied that the standard LANDTEC is utilized nationwide, is more superior than the WMI standard and it makes monitoring a lot easier. Greg Mathes asked what monitoring equipment will be required for the LANDTEC. Steve Martin replied that the monitoring equipment is just the standard equipment and that no special monitoring equipment will be required.

Materials – Bentonite and HDPE pipes have been delivered to the site. Greg Mathes asked whether the pipes are pre-slotted. Bill Davidson replied that the pipes are not pre-slotted and the slots are being cut on site.

Well Schedule - Bill Davidson stated that the way he interprets the well schedule is that the depth of the slotted pipe and the solid pipe refers to the lengths of the pipes. He stated that if the depth of the solid pipe as shown on the schedule is 20 ft, it means that the length of the solid pipe is 20 ft and if the depth of the slotted pipe is 80 ft, it means that the length of the slotted pipe is 80 ft. Angie Krueger and Steve Martin agreed that Bill's interpretation is how they interpret the well schedule.

Remote Wells – Francis Dayao stated that the Well Schedule does not include the remote wells on the eastern and western slopes. Francis stated that the location of the remote wells are per plan (aligned with the riser pipes) and the distance of the wells from the header line is per the detail shown on the construction plans. Angie Krueger stated that these wells may be moved. William Davidson stated that if possible, the remote wells be located outside the terraces due to maintenance concerns.

Well Abandonment – Francis Dayao asked Angie Krueger whether a well must be abandoned if an obstruction was encountered say at 85% of the well's design depth. Angie Krueger stated that she has discussed with Tom Bilgri and they both agreed that 85% of the design well depth is acceptable and will not require well abandonment. Angie Krueger added that National Piping or ETM can always call EMCON when there is doubt or question regarding well abandonment.

Well Relocation – If a well has to be abandoned and relocated, Angie Krueger stated that the new location of the well can only be 10 ft. to 15 ft. from the well's original design location.

Depth of Well – William Davidson asked whether the distance from the bottom of the well from the top of the liner (as indicated on the Well Schedule) will be adjusted if the existing ground elevation is much higher than the elevation shown on the Well Schedule. Angie Krueger replied that the distance from the bottom of the well to the top of the liner should not be changed even if the well has to be extended. She stated that the elevations were estimated based on the aerial topography done on February 2001 and ground elevations have changed since then.

Well Log - William Davidson reviewed the well log requirements and asked if daily well logs will be provided to ETM. Steve Martin replied that they normally provide the well logs as part of the as-built. Steve added that the well driller keeps a daily (hand-written) log for the wells and

the well logs are submitted to National Piping William Davidson requested that a copy of the well log be provided to him daily National Piping acknowledged. William Davidson asked whether three (3) separate logs (reports) will be provided to ETM per the specifications Angie Krueger replied that there will only be one well log that will be provided and a final report will be provided by National Piping with the as-built

Design Slopes for Headers and Laterals – Francis Dayao asked if there is a minimum acceptable slope should the Contractor not be able to meet the design slope due to field conditions A. Krueger replied that the 3% design slope must be maintained for the permanent wells. However, for the temporary wells, the design slope may be reduced to 2% Steve Martin asked whether the design slope is much more important than the cover on top of the pipes S Martin stated that the tie-in points are fixed points and that adjustments may have to be made on the header pipes to achieve the design slopes for the temporary wells S Martin asked whether it is possible to raise the pipe (to achieve the desired slope) to about a foot from the surface and mound cover material above the pipe to protect the pipe from being damaged S Martin stated that the tie-in points from the drawings appear to be 4'-6' from the elevations shown on the plans William Davidson stated that he thought it was deeper and that deeper trenches with relaxed slopes may have to be constructed W Davidson stated that he is concerned with construction safety when it comes to deeper trenches The slope requirements were further discussed and it was agreed that minimum cover will be maintained to the crest and down to the tie-in

Safety Monitor – National Piping's supervisor (currently Lee Barnett) is the designated Safety Monitor

Asbestos Handling – Francis Dayao stressed that asbestos handling must be done in accordance with the specifications and the Safety Plan submitted to ETM

Well Drilling – National Piping will start drilling tomorrow

Replacement Well – Greg Mathes stated that existing Well T-2 must be replaced by February 1, 2002 and Greg wants the replacement done as part of the expansion. A Krueger stated that T-2U will be installed as part of the expansion and that this well should replace Well T-2U The well identification will be changed to Well T-2R

William Davidson asked whether the landfill gas system expansion has to be operating or operational by February 10, 2002 Greg Mathes and Neil Rushing replied that the system must be operational The landfill gas system expansion within the closure areas does not have to be operational at that time

Jeff Marshall asked whether the headers and laterals within the closure areas will be installed into the clay and down into the refuse areas William Davidson stated that the existing clay liner will be penetrated only at the leachate riser tie-in The headers and laterals will be installed above the clay layer as shown on the construction drawings

Pressure Testing – William Davidson asked whether the caps (for pressure testing) can be located outside the closure areas A Krueger did not have any objection With regards to the new valves that will be located within the closure areas, A Krueger stated that these valves may be relocated outside the closure areas for ease of construction and maintenance. The valves will be installed above the clay liner The formula for the pressure testing was discussed and it was agreed no additional information such as temperature correction factor is needed. The test pressure is 10 psi

Bedding Material – William Davidson asked EMCON to clarify the testing of the bedding (granular material) A. Krueger stated that EMCON does not normally require the bedding to be tested and that the density test requirement was added by ETM Compaction and testing of the bedding material was briefly discussed Francis Dayao stated that testing of the bedding material will still be conducted as required in the specifications

Survey – William Davidson suggested that it may be best to determine the ground elevations where the header lines will be located (for the supplemental lines) to give Baker an idea as to how deep the cuts are going to be. Jeff Marshall stated that they may have to lay the slopes back for trenches with cuts deeper than 4'

Cover over open trenches – William Davidson stated that all exposed wastes and trenches must be covered by the end of the workday Greg Mathes stated that he will look into the possibility of using tarps to cover the working areas

Working Schedule – Steve Martin asked the landfill's operating hours Greg Mathes stated that the landfill closes at 1 00 p.m. on Saturdays and is closed on Sundays. National Piping must coordinate their work schedule with TRLF if they plan on working after the landfill has closed

Pipe Welding – William Davidson asked how National Piping plans to weld the pipes Lee Barnett replied that he will weld the pipe in 200-ft sections near the trenches

Valves – W Davidson asked EMCON to clarify the type of valves that will be utilized. A. Krueger stated that all valves are underground valves The 4" gate valve shown on Detail 2/G5 will have a riser and the wheel will be installed the same way as the underground control valves.

Supplemental Wells – W Davidson asked whether the existing wells such as T-1 will be abandoned A. Krueger replied that these well will not be abandoned since the wells are still functioning and that the new wells will be installed near the existing wells to withdraw gas from the upper portions of the landfill. W Davidson asked how the new wells will be connected to the existing system. A Krueger replied that she will have to call Tom Bilgri and Tom can explain how these pipes will be connected. Tom Bilgri was contacted and he explained that the existing wells will remain in place and the new wells (i.e., T-1U) will be constructed to withdraw gas from the upper waste zone According to Tom, the existing wells will have new laterals (sub-headers) just like the new wells and will be connected to the new header line and the existing laterals will be abandoned in place. Tom Bilgri explained that he had discussed this with Juanita Clem and this was explained at the Pre-Bid meeting A Krueger stated that the current Well Schedule shows the supplemental wells to be almost as deep as the existing wells. A Krueger stated that she will revise the Well Schedule and will provide the schedule to National Piping and ETM. Greg Mathes stated that Well T-2 is not functioning and asked Tom whether Well T-2U (the replacement well) must be redrilled to Well T-2's original design depth Tom stated that it is good practice to redrill the well to its full length Greg Mathes asked Tom when T-2 is abandoned and T-2U has been installed to replace T-2, can T-2U be connected to the new header line Tom Bilgri stated that it will be connected to the new 6" header line

III. INCREMENTAL CLOSURE

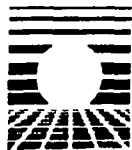
Initial Cover Acceptance – Since the initial cover is not ready at this time, Francis Dayao requested a letter from Baker stating the initial cover will not be accepted at this time

Clay Pre-Qualification – Clay pre-qualification testing has been coordinated with LAW and is scheduled for this week. Currently, Baker is considering using the Gaskin Farm from the previous construction

Contract Time Remaining – Landfill Gas System Expansion (outside closure areas). 76 days
Incremental Closure and remaining landfill gas system 165 days.

The next meeting is scheduled for December 4, 2001 at 2.00 P M

cc: Attendees
Chris Pearson
Juanitta Clem
Jimmy Purvis
Johnny Teague
Tom Bilgri



England-Thims & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

Principals

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N. Hugh Mathews, P.E., Exec. V.P.
Joseph A. Tarver, Exec. V.P.
Juanitta Bader Clem, P.E., V.P.
Scott A. Wild, P.E., P.S.M., V.P.

MEETING MINUTES

DATE: November 12, 2001

PLACE: Trail Ridge Landfill

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
Pre-Construction Meeting
ET&M Project No. E00-117-04

ATTENDEES: Greg Mathes, Trail Ridge Landfill, Inc. (TRLF)
Jimmy Purvis, TRLF
Robert Feely, R.B. Baker Construction Inc. (Baker)
Jeff Marshall (Baker)
John Solich, Baker
Bobby Townsend, Baker
Jim Horton, LAW Engineering (LAW)
John Teague, LAW
Cliff Cosby, LAW
Tom Smith, Robert M. Angas Associates, Inc. (Angas)
Juanitta Clem, England, Thims & Miller, Inc. (ETM)
William Davidson, ETM
Francis Dayao, ETM

I. Introduction

Juanitta Clem introduced Greg Mathes, General Manager of Trail Ridge Landfill, Inc. (TRLF), William Davidson and Francis Dayao with England, Thims & Miller, Inc. (ETM), Jim Horton and John Teague with LAW Engineering and Tom Smith with Angas. William Davidson will be the overall full-time Quality Assurance/Quality Control (QA/QC) Monitor and John Teague will be assisting as a QA/QC monitor for the soil. Angas will be performing the as-built for the closure. Juanitta Clem briefly reviewed the key items that were discussed at the November 1st meeting and handed out the agenda for today's meeting.

II. Communications

Juanitta Clem stated that all communications for the subcontractors should go through Baker. Juanitta Clem stated that weekly construction progress meetings will be held throughout the duration of the Project and suggested the meeting be held every Tuesday at 2:00 p.m. at Trail Ridge. (Note, it is highly recommended that the Contractor and subcontractor be represented at the weekly meeting.) Juanitta Clem stated that it may not be practical to meet next Tuesday. Jeff Marshall agreed and stated that he will contact National Piping and will get back with Juanitta Clem regarding the schedule for the next meeting. Juanitta Clem stated that EMCON (design engineer for the landfill gas system expansion) cannot make it to the meeting and suggested that a meeting be scheduled either on November 26 or 27, with both EMCON and

National Piping present (Note, subsequent to the meeting, it was decided that the initial construction meeting will be held on November 26, 2001 at 1 00 p m at the Trail Ridge Landfill office)

III Safety Issues

Juanitta Clem stated that this is a non-smoking area and hard hats will be required Juanitta Clem stated that Baker must sign in at the office every morning when Baker is on site Juanitta Clem asked TRLF if Jeff Marshall can sign for Baker and the sub-contractor(s) Greg Mathes had no objections Juanitta Clem stated that Baker's crew as well as the subcontractors must attend the mandatory Waste Management Safety Training Jimmy Purvis stated that the training is approximately an hour long and will cover the safety procedures on site TRLF will coordinate the training schedule with Baker Multiple training sessions may be scheduled depending on the number of attendees Juanitta Clem reminded Baker that a copy of Baker's Safety Plan must be submitted as soon as possible Robert Feely asked whether Baker can submit a generic Safety Plan Juanitta Clem stated that she prefers a more project-specific safety plan since asbestos may be encountered during construction of the landfill gas system expansion

Robert Feely introduced Bobby Townsend, Research Engineer and John Solich, Area Construction Manager, both with Baker Robert Feely stated that Jeff Marshall will be responsible for most of the contract-related work

IV Equipment and Material Storage

As in the previous project, Juanitta Clem stated that the construction trailer will be located northeast of the Operations Building With regards to equipment and material storage, the top area of the landfill may be utilized for storage However, Baker must coordinate the location of the storage area with Jimmy Purvis All material delivery trucks must access the site through the main gate and must use the far most side of the scale house Greg Mathes stated that delivery trucks must untarp at the top area to avoid traffic near the scale house William Davidson cautioned Baker regarding the speed limit at the landfill Baker took note

V Contract Issues

Juanitta Clem stated that she received a letter from Baker regarding missing copies of Appendices E, G and H and provided Robert Feely with copies of the Appendices

Robert Feely stated that Baker does not have a contract with National Piping at this time due to some issues relating to the contract Greg Mathes asked the issues involved. Robert Feely replied that it is primarily the delay in providing the Notice to Proceed and that National Piping claims that their schedule has been impacted by 12 days (National Piping expected that a Notice to Proceed was going to be issued back in November 1, 2001) Greg Mathes stated that this matter should be between Baker and National Piping and that he was prepared to issue the Notice to Proceed today Juanitta Clem stated that she spoke with Ashley Burnsed with Baker and had the impression that Ashley Burnsed thought that the entire landfill gas system expansion must be complete by February 10, 2002 This was discuss further and Juanitta Clem suggested that it may be best to contact Ashley Burnsed after the meeting and explain the completion schedule for the landfill gas system expansion and incremental closure

Juanitta Clem stated that the insurance and bonds must be established as soon as possible Robert Feely took note.

Pay Requests - Juanitta Clem stated that she received a letter from Brandon Forest regarding the Schedule of Values and that a revised Schedule of Values will not be provided. (Note, during the November 1st meeting, Juanitta Clem requested the Schedule of Values be revised since most of the items were shown as "Lump Sum" items which makes it difficult to review and quantify.) Juanitta Clem stated that if this is the case, ETM will assign their own Schedule of Values which may be more conservative Robert Feely stated that a revised Schedule of Values will be provided Greg Mathes asked if Robert Feely knew the nature of the letter Robert Feely replied that he does not know and that he will discuss this with Brandon Forest

VI Prevention, Control and Abatement of Erosion and Water Pollution Prevention

Juanitta Clem stated that the Contractor's Certification (Pollution Prevention) must be signed by Baker and National Piping and provided to ETM as soon as possible Juanitta Clem reminded Baker that the pollution and erosion control measures must be in place within 14 days from the Notice to Proceed and must be maintained until final acceptance of the Project Juanitta Clem stated that Baker must maintain the stormwater pond at all times to ensure that stormwater from the construction site and existing landfill is treated to meet surface water quality standards (29 NTU above background). Testing of the pond will be required when there is a pond discharge. Robert Feely asked whether the pond has been tested William Davidson stated that there was no discharge during the third construction increment However, William Davidson stated that during the third construction increment, he tested the background and found the background to be 0 NTU's

VII Shop Drawings

Juanitta Clem stated that approved shop drawings are required prior to purchase Eight (8) sets of approved shop drawings shall be required and any shop drawings required for return to the Contractor shall be submitted in addition to the eight sets

VIII Quality Assurance and Quality Control Plan

Borrow Pit Pre-Qualification - Robert Feely stated that samples were taken at the sand borrow pit and lab results should be available either tomorrow or Wednesday. Two proposed clay borrow pits will be tested today Jeff Marshall stated that Baker will need approximately 7,500 to 8,000 cubic yards of clay Juanitta Clem stated that LAW Engineering, if requested, can assist Baker with the clay pre-qualification.

Juanitta Clem reviewed the requirements for the top soil and stated that the top soil requirements are not as difficult compared with the clay The borrow pit for the top soil will only be tested once unless a new source will be utilized

Clay Test Strip - Juanitta Clem explained that the clay density will be based upon the clay test strip that will be constructed and the minimum density is 80% of Standard Proctor The test frequency will be doubled since the total closure area is less than 5 acres Juanitta Clem stressed that should Baker decide to construct the clay layer without the approved test results, then it will be at their own risk Juanitta Clem stated that based on previous projects, the turnaround time for the permeability testing has been fairly quick

Initial Cover - Juanitta Clem stated that the initial cover shall be compacted to 90% Modified Proctor. Jeff Marshall asked whether they can do a 90% of Standard Proctor. Juanitta Clem replied that it will depend on the soil that Baker will utilize. If the soil will have 30% or greater passing the No. 200 Sieve, then the Standard Proctor may be considered.

Jim Horton asked the type of soil that TRLF currently use for initial cover. John Teague replied that it is mostly sand. Jim Horton stated that it may be best to go ahead and find out the type of material they have at the borrow pit. William Davidson stated that it is mostly brown sand and a great amount of white sand. John Teague added that the material has a high fines content, approximately 11.3%.

Juanitta Clem stated that it is the responsibility of TRLF to bring the initial cover to grade (not density). The density requirement will be Baker's responsibility.

Jim Horton suggested to take proctors as soon as possible. Jeff Marshall will review the initial cover.

IX. Surveying

Juanitta Clem stated that there are a lot of survey control points outside the perimeter ditch. Juanitta Clem suggested that Baker's surveyor meet with Angas prior to any survey work. Jeff Marshall agreed. J. Clem explained that the tolerance for the subgrade is -0.10 ft. The clay layer will not be as-built. However, thickness checks will be performed. The top soil will have a tolerance of +/- 0.10 ft and will be as-built and the constructed thickness will be checked. The drainage system will have a tolerance of +/- 0.10 ft (at the downcomer invert).

As-Built - Tom Smith stated that Angas will need a minimum 24-hour notice for any survey work. Juanitta Clem stated that Baker can call Angas directly at (904) 642-8550 or coordinate it with William Davidson.

X. Schedule

Juanitta Clem stated that the project schedule has been discussed several times and that February 10, 2002 is the deadline for the gas system. J. Clem asked Baker if a Project Schedule has been prepared. Jeff Marshall replied that he will have the revised Project Schedule at the meeting that will be scheduled either November 26 or 27, 2001.

Weather Delays - J. Clem stated that the conditions regarding weather delays is per the Project Specifications. Request for time extensions must be submitted on a monthly basis (since this is what DEP requires). J. Clem explained the conditions when a time extension will be granted. J. Clem stated that Sunday is not considered a normal work day. J. Clem stated that all request for time extensions must include documentation of how weather conditions delayed progress of work.

J. Clem stated that William Davidson has a rain gauge and that he normally logs the amount of rainfall daily (for ETM). J. Clem stated that since there are 2 completion schedules (gas expansion and closure), it may be best to maintain 2 logbooks.

XI Plans and Specifications

J Clem provided copies of the construction drawings and specifications to Baker, TRLF and LAW Engineering

cc: Chris Pearson



Principals

James E England, P.E., CEO
Douglas C. Miller, P.E., President
N. Hugh Mathews, P.E., Exec. V.P.
Joseph A. Tarver, Exec. V.P.
Juanitta Bader Clem, P.E., V.P.
Scott A. Wild, P.E., P.S.M., V.P.

MEETING MINUTES

DATE: November 1, 2001

PLACE: Trail Ridge Landfill

REFERENCE: Trail Ridge Landfill
Incremental Closure and Landfill Gas System Expansion
Bid Review Meeting
ET&M Project No. E00-117-04

ATTENDEES: Greg Mathes, Trail Ridge Landfill, Inc. (TRLF)
Neil Rushing, City of Jacksonville
Robert Feely, R. B. Baker Construction Inc. (Baker)
Brandon Forrest (Baker)
Hoynes Bacon (Baker)
Scott Newman (Baker)
Jeff Marshall (Baker)
Juanitta Clem, England, Thims & Miller, Inc. (ETM)
William Davidson, ETM
Francis Dayao, ETM

I Introduction

Juanitta Clem introduced Greg Mathes, General Manager of Trail Ridge Landfill, Inc. and Neil Rushing with the City of Jacksonville. Trail Ridge Landfill, Inc. is the landfill operator and permittee and the City of Jacksonville is the owner of the landfill. Baker will contract with Trail Ridge Landfill, Inc. for the construction and Trail Ridge Landfill, Inc. will in turn contract with the City of Jacksonville. Juanitta Clem stated that the construction drawings for the incremental closure were prepared by ETM and the landfill gas system expansion plans were prepared by EMCON/OWT.

II Bid Proposal

Prevention, Control and Abatement of Erosion and Water Pollution - Juanitta Clem stated that although Baker's lump sum price for pollution control was relatively higher than the other bidders, the price appeared acceptable.

On-Site Construction Trailers - Juanitta Clem stated that Baker should plan to have the construction trailers at the site for six months. Juanitta Clem explained that Baker would be responsible for providing the utilities, sewage pump-out, telephone, fax machines and so forth. Greg Mathes asked Baker if they know the cost to lease the trailer with an option to purchase. Hoynes Bacon replied that he does not know the cost but Baker will check into it and get back.

with Greg Mathes. Hoynes Bacon stated that Baker is planning to have a 10' x 40' trailer for the project and asked Greg Mathes if that size is acceptable for purchase. Greg Mathes replied that size is fine. Greg Mathes explained that it makes sense to purchase a trailer and have it permanently on site. Greg Mathes stated that the City may consider a Change Order for the difference between the cost for Baker to lease the trailer and the purchase price. Neil Rushing stated that he will discuss this with his supervisor, Chris Pearson.

Mobilization/Demobilization - Juanitta Clem stated that Baker's Mobilization/Demobilization cost appeared higher than the other Bidders and asked what items were included. Hoynes Bacon explained that the cost includes mobilization/demobilization of equipment, preliminary surveying and checking of the initial cover, supervision and surveying. Hoynes Bacon added that the equipment would be coming from their Georgia facilities, which will result in additional expenses. Hoynes Bacon stated that he could provide a more detailed breakdown of the cost, if requested. Juanitta Clem stated that a breakdown of the items is not necessary and with the initial cover work included, the bid price appears acceptable.

Performance and Payment Bonds - Juanitta Clem stated that the cost of \$7,300 is low and asked if the bid price includes both bonds. Hoynes Bacon agreed that the price is low and Baker realized that they must obtain both bonds. They may need to move some monies from mobilization/demobilization to cover the bonds but no change is required.

Borrow Pit Pre-Qualification and Clay Test Strip - Juanitta Clem stated that Baker's costs for these items are acceptable.

Juanitta Clem asked Baker if they have located a clay borrow pit for the Project. Hoynes Bacon replied that they are considering two borrow pits. A pit currently leased by American Aggregate is being tested to determine if it can meet the project specifications. If these test results are acceptable, this pit will be used for the project. The borrow pit used for the last expansion is considered a secondary pit. Juanitta Clem requested that ETM be informed of the results on the first pit when they become available. Juanitta Clem expressed concern that the clay pit from the previous project may not meet the project specifications. Juanitta Clem stated that based upon a review of the permeability test results from the previous project, the pit may have a 25% failure rate for this project.

Juanitta Clem stated that she did not have any major concerns regarding Baker's bid but she wanted to make sure that nothing was left out. Greg Mathes asked when the City would be prepared to issue their Notice to Proceed. Neil Rushing stated that he is currently working on the contract and the contract may be issued by December 1, 2001.

Project Schedule - Juanitta Clem stated that there will be two project completion dates. The landfill gas system expansion must be substantially complete and operable by February 10, 2002 and the incremental closure must be complete six months after the Notice to Proceed has been issued. Juanitta Clem stated that the deadline for the landfill gas system expansion is permit-driven and cannot be modified.

Juanitta Clem asked Baker if there would be any impact if a Notice to Proceed was given for the landfill gas system expansion immediately and the Notice to Proceed for the closure was given thirty (30) days later. Hoynes Bacon replied that Baker will still need people to supervise the

construction of the landfill gas system expansion and some equipment may need to be mobilized. Therefore, Baker may have some additional costs. Hoynes Bacon stated that they may have to discuss this internally and get back with a response. Bob Feely stated that a letter of intent for the closure work may be necessary if the work is split.

Greg Mathes asked how long will it take Baker to physically mobilize to the site, assuming a Notice to Proceed was issued today. Hoynes Bacon replied he does not have a definite answer and that it will take them at least two weeks. However, Baker will do everything possible to get the project started to avoid delays and liquidated damages.

Juanitta Clem explained that Trail Ridge Landfill, Inc. would be taking a risk if a contract was executed between Trail Ridge Landfill, Inc. and Baker without a contract with the City. Neil Rushing explained that funds have already been set aside for the project and that he is awaiting signatures on the contract.

Juanitta Clem stated that Baker's bid for the final cover was low compared with the other Bids. Hoynes Bacon explained that the cost of reworking the initial cover has been included in the Mobilization/Demobilization cost. Juanitta Clem stated that reworking of the initial cover includes clearing any vegetation, compacting the initial cover and adding additional material if necessary after compaction. The density requirement for the initial cover is 90% of modified proctor. Hoynes Bacon stated that the cost of final cover includes 12" of clay, 24" of top soil cover, grassing with over-seeding and the 6" underdrain.

Jeff Marshall asked whether density tests have been performed on the initial cover. Juanitta Clem replied that density testing has not been performed on the initial cover. However, density testing has been required on all the other closure projects at the site and the density was achieved. Juanitta Clem explained that there is one difference between the previous closures and the upcoming closure. Mulch has been mixed with the soil for initial cover which could cause problems. However, all areas with the mulch mix will require additional fill to meet the design grades and TRLF will utilize strictly soil (without mulch added). The grade tolerance for the initial cover is a negative 0.10 feet. Juanitta Clem stated that settlement may occur after the clay layer and top soil have been placed. During the last project, the Department of Environmental Protection (DEP) was notified regarding the settlement and DEP agreed to accept the closure construction. Juanitta Clem stated that the initial cover will be checked for thickness and as-built, the thickness of each clay layer will be checked per the Quality Assurance/Quality Control (QA/QC) Plan, the thickness of the top soil will be checked per the QA/QC Plan, and finally the top of the final cover will be as-built. The clay layer will not be as-built. The grade tolerance for the final cover is plus or minus 0.10 feet.

Juanitta Clem stated that TRLF will be doing additional grading on the western side slopes. She stressed that once Baker has accepted the initial cover, Baker will be responsible for maintaining the initial cover. If there is any erosion or settlement of the initial cover after acceptance, Baker will have to correct it. TRLF must coordinate their work schedule with Baker on the initial cover.

Juanitta Clem reviewed the testing requirements for the clay layer including the testing frequency. She explained that both layers of clay would be tested independently with the frequency doubled due to the size of the closure areas (being less than five acres in total area).

Juanitta Clem stated that the Contractor may place a second lift of clay prior to obtaining acceptable test results at his own risk. Based on previous projects, Juanitta Clem stated that Law Engineering will do their best to sample and obtain results back as quickly as possible.

Jeff Marshall asked about the density requirement for the clay. Juanitta Clem explained that the density requirement for the clay will be established based upon the results of the clay test strip. The minimum density that must be met is 80% of Standard Proctor. Once an acceptable test strip has been constructed, the remaining clay layer will be constructed using the methods utilized to construct the clay test strip.

Juanitta Clem stated that the top soil will be tested for pH and organic content once per material source.

Juanitta Clem stated that on the eastern slopes where the Contractor will have to tie-in final cover to existing final cover across a terrace, settlement has occurred (as much as 1.5') and that the clay tie-in will have to be field-fit. Juanitta Clem stated that this will result in a steeper slope than normal and that the clay layer will have to be adjusted to match the existing clay layer.

Downcomer D-19 - Juanitta Clem stated that downcomer D-19 has been extended which will conflict with the gas header pipe. Juanitta stated that the extension does not have a soil cover at this time and that the gas trench will go underneath the extension. The downcomer extension will be covered by TRLF after the gas system is complete.

Greg Mathes stated that an access ramp will be constructed by TRLF between temporary gas wells T-26 and T-29. Therefore, the gas header pipe will have to be encased at this location. TRLF will provide HDPE pipe to encase the header pipe. Baker took note.

Juanitta Clem stated that on the west side, there is an existing ADS pipe stub-out and the connection between the 30" HDPE downcomer pipe and the ADS pipe will be as shown on the plan details.

Well Abandonment - Juanitta Clem stated that should an obstruction be encountered during the drilling process, Baker must notify ETM so a determination can be made as to whether the well must be abandoned. Juanitta Clem stated that Baker or the subcontractor must not assume that a well will be abandoned once an obstruction is encountered.

Jeff Marshall asked for the distance between the bottom of the well and the top of liner system. Juanitta Clem replied that the distance is approximately ten feet. Baker must have good control during drilling operations to ensure that the bottom liner will not be penetrated. William Davidson stated that the topographical survey was taken in February of 2001 and therefore, the existing elevations have changed.

Surveying - Juanitta Clem stated that a surveying error occurred during the last project which resulted in wells being drilled at the wrong location. To avoid this, Juanitta Clem stated that it is best for Baker's surveyors to meet with Robert M. Angas Associates, Inc. (Angas) at the start of the project. Control points have been established by Angas around the perimeter road.

Angas could establish additional control points to assist Baker, if necessary (Please note that due to waste settlement, Angas will not establish control points on the top of the landfill)

Asbestos - Juanitta Clem stated that during all previous projects, asbestos was not encountered. However, this does not mean that asbestos will not be encountered during this project. Juanitta Clem requested Baker provided a Safety Plan as soon as possible which includes asbestos handling procedures. Juanitta Clem reviewed Section 02130 of the Project Specifications regarding asbestos handling. She pointed out that item n on page 02130-5 gives the Contractor an alternative to sampling and testing the waste for asbestos which is to assume that the waste contains asbestos and to handle and dispose of the waste accordingly

Schedule of Values - Hoynes Bacon provided a draft Schedule of Values. Juanitta Clem reviewed the schedule and requested that the items dealing with the clay layer, the top soil and grassing be provided on a unit price basis (SF or SY) rather than lump sum. Unit prices for the gas wells, header and laterals, landfill gas well abandonment, replacement of headers and laterals was also requested. Hoynes Bacon acknowledged and stated that a revised schedule of values will be provided.

cc: Attendees
Chris Pearson, City of Jacksonville
Jim Horton, Law Engineering
Les Reynolds, Robert M. Angas Associates Inc

8. Record of Daily Observations

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: December 12, 2001

A representative of Law Engineering and Environmental Services, Inc was on site on December 12, 2001, to observe earthwork and perform soil testing as needed.

Gas Collection System

National Piping and Construction placed and compacted fill for the header pipe subgrade from approximately 75' west to 175' east of Well T-20. Density tests 1 – 3 were performed and the 6" gas header line was installed. Please see the density reports for additional information.

Two loads of aggregate arrived for the gas wells and was sampled for laboratory testing. National Piping was notified that the aggregate failed to meet the gradation requirements for a No. 3 aggregate. Additionally, two more loads of aggregate were delivered to the site.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


John Teague


Reviewed By: James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

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Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: December 13, 2001

A representative of Law Engineering and Environmental Services, Inc was on site on December 13, 2001, to observe earthwork and perform soil testing as needed

Gas Collection System


National Piping and Construction placed and compacted fill alongside the 6" gas header pipe from approximately 75' west to 175' east of Well T-20. Fill was also placed and compacted for the 6" gas header line subgrade from approximately 175' to 250' east of Well T-20 and from 75' to 225' west of well T-20. Density tests 4 through 8, 4A through 7A, 5B and 6B were performed today. Please see the density reports for additional information.

One load of aggregate arrived that appeared to have a lot of pea-sized aggregate and National Piping was notified of this. After dumping this load, the truck was reloaded with a load of the aggregate that failed to meet the gradation requirements and sent it back to the supplier.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


John Teague


Reviewed By: James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
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Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: December 14, 2001

A representative of Law Engineering and Environmental Services, Inc was on site on December 14, 2001, to observe earthwork and perform soil testing as needed.

Gas Collection System

National Piping and Construction placed and compacted pipe subgrade for 6" gas header line from approximately 225' west of Well T"-20 to the western tie-in. Density tests 9 through 12, and 9A were then performed. Please see the density reports for additional information.

Two loads of the aggregate stockpiled on the site were hauled back to the supplier and replaced with loads that had been screened by the supplier.

The new loads were mixed with the remaining loads of aggregate on site. Then, the aggregate was sampled for laboratory testing (Sample No. 9) of gradation.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

James J. Gallup
Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: December 15, 2001

A representative of Law Engineering and Environmental Services, Inc was on site on December 12, 2001, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed and compacted fill alongside the 6" gas header pipe, from approximately 75' west of Well T-20 to the west tie-in. Density tests 13 through 17 were performed. Please see the density reports for additional information.

Aggregate was placed in the wells, after receiving notification on December 14, 2001, that aggregate Sample No 9 met the No 3 aggregate gradation requirements.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: December 17, 2001

A representative of Law Engineering and Environmental Services, Inc was on site on December 13, 2001, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction removed waste, then placed and began compacting fill for the 6" gas header pipe subgrade, between Well T-20 to the east tie-in

The remaining load of No 3 aggregate arrived and was placed in Well T-24.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

James J. Gallup
Reviewed By James J Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: December 18, 2001

A representative of Law Engineering and Environmental Services, Inc was on site on December 18, 2001, to observe earthwork and perform soil testing as needed

Gas Collection System

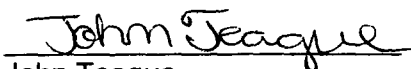
National Piping and Construction finished compacting the fill for the 6" gas header pipe subgrade from approximately Well T-21 to the east tie-in. A density test was performed, the pipe was installed, fill was placed and compacted alongside the pipe from approximately 175' to 275' east of Well T-20. Density test 19 failed and therefore the area of the test will have to be recompacted.

Waste was removed and fill was placed for the 6" gas header line subgrade from approximately 100' east to 800' west of Well T-1 to the western tie-in. This pipe subgrade was then compacted and tested for density from approximately 50' east to 225' west of Well T-1.

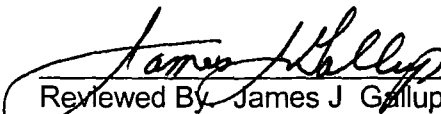
Density tests 18 through 22 were performed. Please see the density reports for additional information.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague

BY ds WITH PERMISSION


Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: December 19, 2001

A representative of Law Engineering and Environmental Services, Inc was on site on December 19, 2001, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction compacted the fill for the 6" gas header pipe subgrade from approximately 225' west of Well T-1 to the western tie-in and from 50' to 200' east of Well T-1

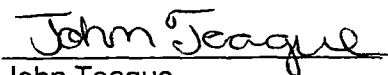
~~Density tests were performed on the subgrade and the Contractor began installing the pipe in the trench~~

The Contractor placed fill alongside the 6" gas header pipe from approximately 275' east of Well T-20 to the eastern tie-in, and compacted the fill alongside the pipe from approximately 175' east of Well T-20 to the east tie-in

Density tests 23 through 30, and 19A were performed Please see the density reports for additional information

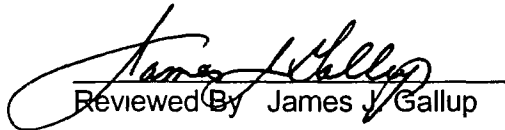
Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.



John Teague

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: December 20, 2001

A representative of Law Engineering and Environmental Services, Inc was on site on December 20, 2001, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed and compacted fill alongside the 6" gas header pipe from Well T-1 to the eastern tie-in and from Well T-1 to the western tie-in

Density tests 31 through 39 were then performed Please see the density reports for additional information

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

James J. Gallup
Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 2, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 2, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction had not returned to the site from Christmas holidays, but was is route

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

James J. Gallup
Reviewed By James J Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 3, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 3, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction began removing waste from the highest point in the header line, west of Well T-28 towards Well T-29, in preparation to begin placing fill for the 6" gas header line subgrade

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague

John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 4, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 4, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction continued removing waste, then placed and compacted fill for the 6" gas header line subgrade from approximately 350' east to 325' west of Well T-28

Density tests 40 through 46 were performed on the header pipe subgrade Please see the density reports for additional information

Side Slope Closure

R B Baker Construction, Inc began hauling topsoil on site and stockpiling it A sample of the topsoil was taken for laboratory testing of pH and organic content

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 5, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 5, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed and compacted fill for 6" gas header pipe subgrade, then density tests were performed on pipe subgrade, from approximately 325' to 760' west of Well T-28

After the pipe was installed in the trench, fill was placed alongside the 6" gas header pipe, compacted and tested for density from approximately 350' east to 760' west of Well T-28

Density tests 47 through 61 were performed Please see the density reports for additional information

Respectfully Submitted.

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

James J. Gallup
Reviewed By James J. Gallup

FY ds WITH PERMITS ON

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 7, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 7, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

After removing waste, National Piping and Construction placed and compacted fill for the 8" gas header pipe subgrade, from approximately 120' west to 575' east of Well T-32 and for lateral to Well T-31


Density tests 62 through 69 were then performed on the header pipe subgrade. Please see the density reports for additional information


Side Slope Closure

R B Baker Construction, Inc. continued hauling topsoil to the site and stockpiling it.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


John Teague


Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 8, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 8, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed and compacted fill for the 8" gas header pipe subgrade from approximately 575' to 630' east of Well T-32 and for the lateral to Well T-30, then density tests were performed. Fill was then placed alongside the pipe, compacted and tested for density from approximately 80' west to 575' east of Well T-32

Density tests 70 through 77 were performed Please see the density reports for additional information

Side Slope Closure

R B Baker Construction, Inc continued stockpiling topsoil on site.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 9, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on December 13, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction compacted fill alongside the gas header pipe lateral to Wells T-31 and T-30, then density tests were performed on fill

Waste was removed, then fill was placed, compacted and tested for density for 8" gas header pipe from approximately 120' west of Well T-32 to 180' West of Well T-33

Density tests 78 through 82 were performed today Please see the density reports for additional information


Side Slope Closure

R B Baker Construction, Inc began hauling clay from the approved borrow pit today and stockpiling it on site The laborer's removed roots from the clay as it was being stockpiled LAW also visited the clay pit to observe the area that was being excavated


Baker also continued hauling topsoil to the site and stockpiling it.

Respectfully Submitted.

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 10, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 10, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed and compacted fill alongside the 8" gas header pipe from approximately 80' to 410' west of Well T-32, then density tests were performed. After testing, National Piping began placing waste on top of the pipe from approximately 75' east to 125' west of Well T-33. Bill Davidson was notified and he notified National Piping that the waste would have to be removed and fill placed on the top of the pipe per the plan detail.

Waste was removed, then fill was placed, compacted, and tested for density for the 6" gas header pipe subgrade from approximately 200' east to 80' west of Well T-23.

Density tests 83 through 89, 84A, 85A, and 88A were performed on the header pipe subgrade and backfill. Please see the density reports for additional information.

Side Slope Closure

R B Baker Construction, Inc continued to stockpile topsoil and clay on the site. Laborers picked roots from the clay as it was being stockpiled.

Baker also began grading the initial cover on Side Slope Unit 22, in preparation for the clay test strip.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague
BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 11, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 11, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction removed the waste that they had placed on top of the 8" gas header pipe from approximately 75' east to 125' west of Well T-33 and then placed fill on top of the pipe

Fill was placed, compacted and tested for density for the subgrade of the 6" gas header line from approximately 80' to 475' west of Well T-23, after waste was removed

Side Slope Closure

R B Baker Construction, Inc continued to haul clay and topsoil to the site and stockpile it. Laborers are removing roots from the clay material

Side Slope Unit 22 was graded, compacted, and tested for density of the initial cover for the northern 150' of the slope, in the preparation of the clay test strip construction

Density tests 90 through 95 were performed. Please see the density reports for additional information

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague
BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 12, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 12, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed fill along the 6" gas header line from approximately 190' east to 425' west of Well T-23. Fill was then compacted and tested for density.

Waste was removed, then fill was placed, compacted and tested for the 10" gas header pipe subgrade from approximately 5' to 160' south of Valve V-13

National Piping also removed the waste in the area of the landfill access roadway in preparation to install the 6" gas header pipe and road casing from Well T-25 that ties into the 10" header pipe

Density tests 96 through 103 were performed. Please see density report for additional information

Side Slope Closure

R B Baker Construction, Inc had an operator on site using a bulldozer to mix the clay stockpile until late morning

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 13, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 13, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed and compacted fill for the 6" gas header pipe subgrade in the area of the landfill access road crossing from approximately 800' to 850' west of Well T-28, then subgrade was tested (Density Test 104) Contractor installed 6" gas header line in the casing, along with 160' of 10" gas header which ties in south of valve V-13. After installation of the pipe and roadway casing, the contractor repaired the landfill access road over the 6" pipe.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 14, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 14, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction started removing waste in the area for the 10" gas header line, starting about 160' south of Valve V-13 and proceeding south until mid-morning. They then decided to shut down for the day because it had been raining lightly all morning.

Side Slope Closure

R. B Baker Construction, Inc. hauled clay and topsoil to the site until about mid-day. Operations were suspended due to the wet conditions caused by the rain.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague

John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 15, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 15, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction removed waste from Well T-36 to approximately 425' west of Well T-36, placed fill in the bottom of the excavation and then started compacting the fill for the 8" gas header pipe subgrade.

Side Slope Closure

R B Baker Construction, Inc suspended all operations due to wet site conditions from the rain the day before

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 16, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 16, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction removed waste and placed and compacted the fill for the 8" gas header pipe subgrade. Density tests were performed on the 8" gas header pipe subgrade from approximately 425' west of Well T-36 to T-35. The pipe subgrade failed to meet the required 90% compaction from approximately 140' west of Well T-36 to Well T-35 due to high moisture content. National Piping will let this area dry then recompact the subgrade.

Density tests 105 through 110 were performed today. Please see the density reports for additional information.

Side Slope Closure

R B Baker Construction, Inc. hauled clay and topsoil to the site and stockpiled it. Laborers removed roots from stockpiles.

Baker tried to rework the subgrade on Side Slope Unit 22 in the area of the test strip, but the area is still wet.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 17, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 17, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction recompacted the subgrade for 8" gas header pipe then retested the area from approximately 140' west of Well T-36 to Well T-35 and the lateral to Well T-37. The remainder of the pipe was installed, the fill was placed along the 8" gas header pipe, compacted, and tested for density from approximately 410' west to 210' east of Well T-36 and the lateral to Well T-37

National Piping also removed the wet subgrade under the 10" gas header pipe from the flange at Valve V-13 to approximately 50' south, then replaced and recompacted the subgrade. A density test was performed on this reworked subgrade. Fill was placed along the 10" gas header pipe from approximately 20' to 160' south of Valve V-13 and was compacted. A density test was performed on fill along the pipe with a result of only 81% compaction. National Pipe was notified of the low density and that the lift was 15" to 16" thick. The Contractor agreed to remove the excess fill to where lift is only 8" to 10" thick and then recompact the lift.

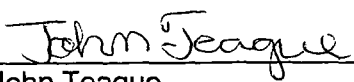
Side Slope Closure

R B Baker Construction, Inc continued to haul topsoil to the site and stockpile it, but hauling of clay was suspended due to wet roads at the clay pit.

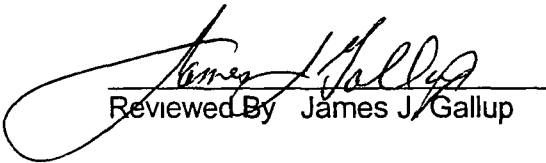
Baker also continued to attempt to dry the subgrade in the test strip area.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 18, 2002

A representative of Law Engineering and Environmental Services, Inc. was on site on January 18, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed approximately 8" aggregate under the first 15' of the 10" gas header pipe south of the flange at Valve V-13. The aggregate was placed and compacted for the pipe bedding in this area due to water seeping in at the low end of the excavation. Excess fill, that was over the pipe, was removed from approximately 20' to 160' south of Valve V-13. Fill along the pipe was recompacted and tested as Density test 122A, then was recompacted and retested as Density test 122B before it reached the required 90% compaction.

After the 10" gas header pipe had been backfilled to approximately 160' south of Valve V-13, the Contractor began removing the waste from this point in a southward direction to continue the header pipe installation.

Side Slope Closure

R B Baker Construction, Inc. continued to haul topsoil to the site and stockpile it. The hauling of clays had not yet resumed due to wet conditions at the clay pit.

Baker continued to push wet material up the slopes to dry the subgrade on Units 21, 22 and 23, so that the construction of the clay test strip could begin.

Additionally, the Contractor began mixing the clay on the surface of the clay stock pile, using the tractor and discs.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 19, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on December 13, 2001, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction continued to remove the waste to install the 10" gas header pipe, then placed fill in the bottom of the excavation from approximately 160' to 350' south of Valve V-13. Subgrade was then compacted, the pipe was installed, fill was placed around the pipe and was compacted. LAW didn't enter the trench to perform density tests on compacted fill due to what they considered to be unsafe condition. LAW did observe backfill and compaction operations to make sure the Contractor is making the effort to compact the fill.

Side Slope Closure

R B Baker Construction, Inc continued to mix clay on the surface of the clay stockpile using the tractor and discs.

Baker also used a track hoe to remove the wet subgrade from the terrace swales and place it on the slope as a means of drying the material.

Respectfully Submitted:

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague
BY ds WITH PERMISSION

James J. Gallup
Reviewed By. James J. Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 21, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 21, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction arrived on site, but after a couple of rounds of rain showers decided to cancel work for the day.

Side Slope Closure

R B Baker Construction, Inc hauled topsoil to the site and stockpiled it until the site became to wet to work

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague
BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 22, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 22, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

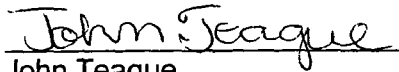
National Piping and Construction was unable to do trench work due to wet site conditions.

Side Slope Closure

R B Baker Construction, Inc was unable to work due to wet site conditions. - - -

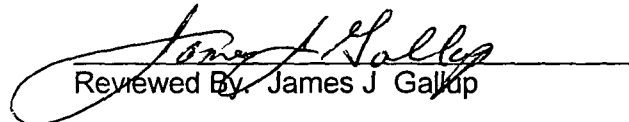
Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.



John Teague

BY ds WITH PERMISSION



Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 23, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 23, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction removed the wet fill on the 10" gas header pipe from approximately 270' - 350' south of Valve V-13, then continued to remove the waste in a southern direction, in preparation for the pipe installation

Side Slope Closure

R B Baker Construction, Inc tried to get on the slopes to rework the subgrade, but the slopes were too wet and the equipment was sliding

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague

John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 24, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 24, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction removed the remaining waste on the 10" gas header pipe, south of Valve V-13. Fill was then placed, compacted and tested for density on the pipe subgrade from approximately 270' to 640' south of Valve V-13.

Waste was removed for the 8" gas header pipe, then fill was placed for the pipe subgrade, compacted and tested for density from approximately Well T-35 to the tie-in in to the 10" pipe.

The landfill access road was excavated for the 8" gas header pipe coming from Well T-34 and tying into the 10" pipe. Fill was placed in the road crossing, then compacted and tested for density.

After installing the 8" gas header pipe and road casing for the 8" pipe from Well T-34, National Piping backfilled this area and over the 10" pipe area of the temporary construction access road without properly compacting the backfill.

Density testing 123 through 127 and 127A were performed. Please see the density reports for additional information.

Side Slope Closure

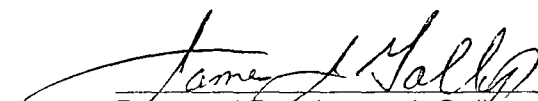
R B Baker Construction, Inc hauled clay to the site and continued to stockpile it. They also mixed the surface of the northern clay stockpile, using the tractor and discs.

Baker also used the track hoe to excavate the wet subgrade from the terrace swales and place it back on the side slopes as a means of drying the material.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 25, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 25, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction placed and compacted fill beside the 10" gas header pipe from approximately 270' to 585' and from 620' to 640' south of Valve V-13, and along the 8" gas header pipe from approximately 210' east of Well T-36 to the 10" pipe. Density tests 128 through 131, 129A and 130A were then performed. Please see density reports for additional information.

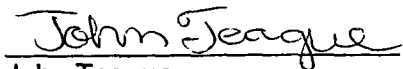
Side Slope Closure

R. B. Baker Construction, Inc stockpiled clay until it began to rain and hauling was stopped.

Contractor also spread the wet material on the side slopes as a means to dry the material, until it started to rain. Baker then shut down for the day.

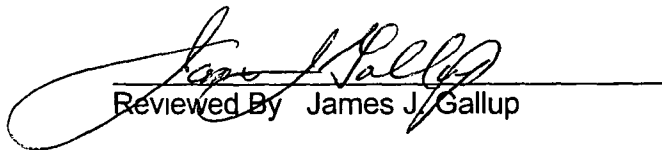
Respectfully Submitted:

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.



John Teague

WESLEY J. HARRISON


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 28, 2002

A representative of Law Engineering and Environmental Services, Inc. was on site on December 28, 2001, to observe earthwork and perform soil testing as needed.

Gas Collection System

National Piping and Construction worked on capping the header pipe in preparation for pressure testing and installed well heads

Side Slope Closure

R. B. Baker Construction, Inc. was unable to work on the subgrade of Side Slope Units 21, 22, and 23, due to wet conditions

Additionally, hauling and stockpiling of clay and topsoil was suspended until after lunch. The hauling and stockpiling of topsoil resumed until it began raining again

Respectfully Submitted.

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

17 d5 11.1.02

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 29, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 29, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

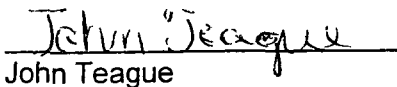
National Piping and Construction removed garbage and washed in sand for the 8-inch gas header pipe from approximately 180' to 420' west of well T-33. Fill was then placed, compacted and tested for density (Test Nos 132 through 134) in this area. Please see the density reports for additional information. Test No 134 failed to meet the required 90 percent compaction due to the high moisture content and pipe was not placed at the time in this wet area from approximately 355' to 420' west of well T-33.

Side Slope Closure

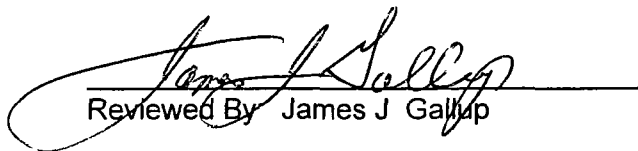
R B Baker Construction, Inc. did not work today due to wet conditions from yesterday's rain.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


John Teague

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: January 30, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 30, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction removed garbage and then fill was placed, compacted and tested for density for the subgrade of the 6-inch gas header pipe from approximately 200' east of well T-23 to the tie-in with the 10-inch gas header pipe to the east. After the pipe was installed, fill was placed, compacted and tested for density from approximately 190' east of T-23 toward the tie-in at the 10-inch gas header pipe.

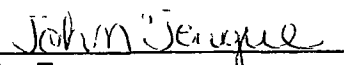
Density test 134 was retested as test 134A. This area has gotten wetter due to water around excavation seeping into the trench. Subgrade was then removed and No. 57 stone was placed and tamped for the pipe bedding in this area, from approximately 355' to 420' west of well T-33. Density tests 135 through 137 and 134A were performed today. Please see density reports for additional information.

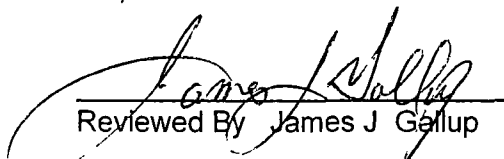
Side Slope Closure

R B Baker Construction, Inc removed some of the wet material from the terrace swales onto the slopes to dry, but said the area is still too wet to work on Side Slopes Units 21, 22, and 23.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague


Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: January 31, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on January 31, 2002, to observe earthwork and perform soil testing as needed

Gas Collection System

National Piping and Construction installed the remaining 8-inch gas header pipe and valve and then fill was placed along side the pipe, compacted and tested for density from approximately 410' to 680' west of well T-32 Please see density report for additional information on Test Nos 138 through 140

Side Slope Closure

R B Baker Construction, Inc did not begin working on the initial cover for Side Slope Units 22 and 23 until late in the day because they said the slopes were too wet and slippery to work earlier

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: February 4, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 4, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure

R B Baker Construction, Inc hauled and stockpiled clay and topsoil on the site today. The clay stockpile was mixed using the tractor and discs. The initial cover subgrade was regraded and compacted on Side Slope Unit 22 north of downcomer D-2. Density tests were performed on the reworked area, but did not meet the required 90 percent compaction. The subgrade was recompacted then retested. Please see density reports for additional information.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 5, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 5, 2001, to observe earthwork and perform soil testing as needed

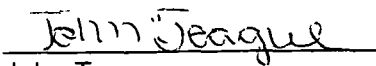
Side Slope Closures

R B Baker Construction, Inc continued to haul clay to the site and stockpile it. They also mixed the clay on the stockpile using the tractor and discs. The grading of the initial cover was completed on Side Slope Unit 22 north of downcomer D-2 and then the Contractor placed the 1st lift of clay from approximately 101+05E to 101+75E between 90+80N to 89+40N. The Contractor tried to compact the 1st lift of clay on the test strip between 101+05E to 101+75E and from 90+00N to 90+50N, using the dozer. After Jeff Marshall (R B Baker) observed this operation, he decided to roll the test strip using the flat drum roller. Density tests were then performed at 5 locations on the test strip and samples were taken at these locations for laboratory testing of permeability (P-1 through P-5), percent fines, and Atterberg limits. Please see density reports for additional information.

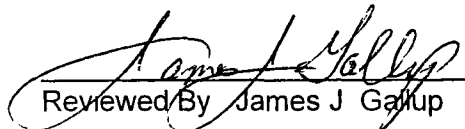
A second planned test strip, using the pads foot roller, was canceled due to mechanical problems with the roller.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: February 6, 2002

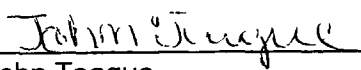
A representative of Law Engineering and Environmental Services, Inc was on site on February 6, 2001, to observe earthwork and perform soil testing as needed

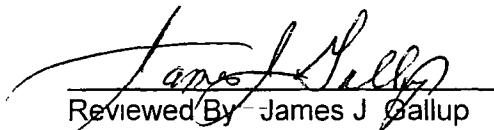
Side Slope Closures

R B Baker Construction, Inc continued to haul clay to the site and stockpile it. The mixing of the clay stockpiles, using the tractor and discs also continued. The clay stockpiles were rolled at the end of the day to seal and prevent the anticipated rain from saturating the clay. The Contractor also rough-graded the initial cover on Side Slope Unit 23 and on unit 22 south of downcomer D-2 and then rolled the initial cover to try to protect it from potential rain.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague


Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 7, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 7, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc did not work on the slopes today because of a continuous light rain
R B Baker hauled and stockpiled a few loads of topsoil in the afternoon after rain ceased

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 8, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 8, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc hauled clay to the site and stockpiled it. The clay was mixed in the stockpiles, using the tractor and discs. R B Baker continued the grading of subgrade south of downcomer D-2, after the slopes had dried.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 11, 2002

A representative of Law Engineering and Environmental Services, Inc. was on-site on February 11, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc. continued to haul clay to the site and stockpile it. They also mixed the clay on the stockpile, using the tractor and discs. The grading of the initial cover on side slope Unit 22 south of downcomer D-2 continued today. Additional thickness checks were performed on the 1st lift of clay in the area of the test strip and were found to be as thick as 13-1/2". The Contractor began trimming the clay from the test strip.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

ET ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 12, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 12, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc continued grading the initial cover of Side Slope Units 21 through 23. The thickness of the 1st lift of clay on the test strip area was rechecked and found to be as much as 9-1/2" thick in some areas and trimming continued until thickness checks showed 6 to 7-1/2" of clay thickness. Clay was recompactd using the smooth drum roller, and then density tests C-5A and C-7A were performed on the trimmed clay layer at the same locations as original permeability samples P-3 and P-5. Please see the density reports for additional information. New permeability samples P-3A and P-5A were obtained for laboratory testing of the bottom 6 inches of clay test strip. After the resampling, the 1st lift of clay test strip, R B Baker used the sheeps foot roller to texture the clay layer and then wet down the clay in preparation to start placing the 2nd lift of clay on the test strip tomorrow.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague

John Teague

DISCLOSURE

James J. Gallup
Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 13, 2002

A representative of Law Engineering and Environmental Services, Inc was on-site on February 13, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc placed the 2nd lift of clay from approximately 101+05E to 101+75E between 90+80N to 89+40N. As the Contractor began to use the smooth drum roller on the 2nd lift of the clay test strip, it began to sprinkle. The Contractor was only able to seal the top of the clay before it became too slick to work. Holes were dug in the 2nd lift clay in the area of the test strip, between 101+05E to 101+75E from 90+00N to 90+50N, by the Contractor to check clay thickness and found that the clay layer was only 9 to 11 inches thick in the northeast corner of the test strip. Additionally, the clay in the top lift appeared to be poorly compacted. Jeff Marshall (R B Baker) determined that it would be recompact before density tests and permeability samples were taken on the 2nd lift of the clay test strip.

Grading of the initial cover continued today on Side Slope Units 21, 22 and 23. R B Baker also began uncovering the west clay anchor berm for tie-in.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague

John Teague

BY ds WITH PERMISSION

James J. Gallup

Reviewed By James J. Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: February 14, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 14, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc continued to uncover the west clay anchor berm for the tie-in from Side Slope Unit 21 The Contractor also continued to grade the initial cover of Side Slope Units 21 to 23

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Teague

John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 15, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 15, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

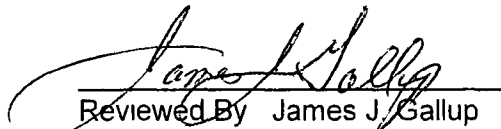
R B Baker Construction, Inc continued the grading of initial cover on Side Slope Units 21, 22 and 23. The Contractor removed the top couple inches of clay in the northeast corner of the test strip so they could bond additional clay where the 2nd lift was thin. After the additional clay was added to this area, the 2nd lift of clay on the test strip between 101+05E to 101+75E from 90+00N to 90+50N was recompact. Density tests C-8 through C-12 were then performed and samples were taken for laboratory testing of permeability (P-6 through P-10), percent fines and Atterberg limits. Additionally, density test C-5B was performed on the 1st lift clay of the test strip in the area of failing permeability P-3A. Clay was resampled at this location for retesting as permeability P-3B since the area had previously been reworked using the sheeps foot roller, prior to placement of the 2nd lift of clay. Please see density reports for additional information.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 16, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 16, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc continued to grade the initial cover on Side Slope Units 21 through 23 and began compacting the initial cover Density tests C-13 through C-18 were performed on the initial cover Please see density reports for additional information The Contractor also resumed uncovering the existing clay at the north tie-in for Side Slope Units 21 through 23

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 18, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 18, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc continued to grade and compact the initial cover of Side Slope Units 21 through 23. Failing density test C-18 on the initial cover was retested and passed as test C-18A. Please see density reports for additional information. R B Baker also continued uncovering the existing clay at the north tie-in for Side Slope Units 21 through 23.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague


John Teague

BY ds WITH PERMISSION

James J. Gallup

Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: February 19, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 19, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closures

R B Baker Construction, Inc continued to grade and compact the initial cover on Side Slope Unit 23 and density test C-19 was performed on the initial cover The Contractor excavated Terraces 2 and 3 for the 6-inch gas header pipe at 88+10N The excavation was then backfilled in 6 to 8-inch lifts, compacted and tested for density Please see density reports for additional information R B Baker also cleaned the dirt off the existing west anchor berm for the clay tie-in from Side Slope Unit 21

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague

John Teague

BY ds WITH PERMISSION

James J. Gallup

Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 20, 2002

A representative of Law Engineering and Environmental Services, Inc. was on site on February 4, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure


R B Baker Construction, Inc. continued to grade the initial cover on Side Slope Unit 23. Clay was placed on the initial cover for the first lift of clay on Side Slopes Unit 21 from approximately 86+90N to 90+98N, on Unit 22 from 86+90N to 89+30N and on Unit 23 from 86+90N to 90+85N, except for area approximately 15 feet on either side of Downcomer D-2. ETM and LAW both expressed concerns to Jeff Marshall (R B Baker) about the clay being placed in very windy conditions and sand blowing into the clay. Jeff was also notified that the various piles and tracks in the initial cover may create problems with the clay thickness. Jeff indicated that he was not concerned with the sand blowing into the clay because they would use the tractor and discs to mix the clay in place. The Contractor began to disc the clay but the tractor threw a track shortly after beginning so mixing stopped until the equipment could be repaired. Clay placement continued until after dark.

Jeff was also notified that there was an area on the west anchor berm (approximately 5 to 10 feet on either side of the 6-inch gas header line at 88+10N) that was unacceptable to place clay on because the track hoe had pushed topsoil into the top of the clay anchor berm and cap tie-in. Because the Contractor made no attempt to remove the topsoil so that the proper clay to clay tie-in could be made, the LAW representative dug out the topsoil so that the tie-in could be made in this area.

The Contractor also resumed hauling topsoil to the site and stockpiling it.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Teague

BY ds WITH PERMISSION


Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: February 21, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on February 21, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closure

R B Baker Construction, Inc continued to haul topsoil to the site and stockpile it. The Contractor excavated initial cover and waste at the location for Downcomer D-2 extension on side slopes Unit 21 through 23. Jeff Marshall (R B Baker) was reminded by LAW and Bill Davidson (ETM) that any clay placed for the clay layer at the downcomer couldn't be tested until successful completion of the test strip. The Contractor will place 12 inches of clay as initial cover to protect the excavation from potential rain on Friday.

It was also brought to Jeff's attention, in the presence of Bill Davidson, that it would be hard to make the proper clay tie-in to the anchor berm under the existing Downcomer D-2 without lifting the pipe so that clay could be adequately compacted. The existing clay under the pipe is several feet back from the end of the pipe and packing the clay in from the side will not result in a solid clay section under the existing pipe. Additionally, Jeff was notified that any alternate method of making the tie-in would require the engineer's approval and the exposed existing clay layer beside the pipe needed to have the sand and topsoil removed from the face before placing clay to existing clay for the tie-in.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Teague
John Teague

BY JS WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 6, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on March 6, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closure

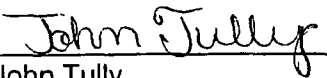
R B Baker Construction, Inc cleared off washed material (caused by the rain) from Units 21 through 23 They also cleaned dirt at tie-ins and verified the first clay layer depths randomly across Units 21 through 23

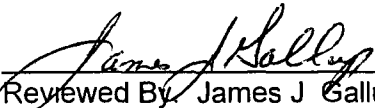
Underdrain Sand

A sample of underdrain sand was collected for grain size and density testing

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By: James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 7, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on March 7, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closure

R B Baker Construction, Inc put a second clay layer at the Downcomer D-2 location. The pad roller and flat roller were used to compact the area in Downcomer D-2. Three compaction tests were performed, after an initial failed test. Please see density reports for additional information. Three permeability samples were collected (P18 through P20). The second clay layer was placed in the area north of the downcomer and rolled with the pad roller.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully

John Tully

BY ds WITH PERMISSION

James J. Gallup

Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 8, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on March 8, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closure

R B Baker Construction, Inc continued rolling the second lift of the clay layer on Units 21 through 23 north of Downcomer D-2. Clay was placed and rolled for the area south of Downcomer D-2. After random thickness checks on Downcomer D-2 and in the area north of Downcomer D-2. The Contractor decided to shave some of the clay from the second layer. LAW reported that the underdrain sand brought in on March 6 was suitable for use.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J. Gallup

File ds 11/11/2001

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: March 11, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on March 11, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closure

R B Baker Construction, Inc continued rolling the second lift of the clay layer south of Downcomer D-2 Thickness checks, density tests, permeability tests and index checks were performed on the area Please see density reports for additional information

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully
BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 12, 2002

A representative of Law Engineering and Environmental Services, Inc. was on site on March 12, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closure

R B Baker Construction, Inc. determined that the first lift of the clay layer on Units 1 and 2 did not meet the minimum 6-inch thickness. Additional clay was hauled in and placed to ensure proper thickness. Prior to placing additional clay, the Contractor scarified the in-place clay to provide a homogeneous layer. No work was performed on Units 3 and 4.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully

John Tully

BY ds WITH PERMISSION

James J. Gallup

Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: March 13, 2002

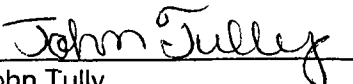
A representative of Law Engineering and Environmental Services, Inc was on site on March 13, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closure

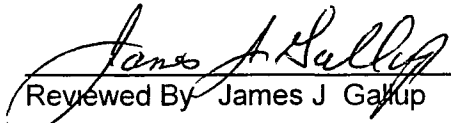
R B Baker Construction, Inc determined that the Side Slope Units were too slick to work due to overnight rainfall

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J Galup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: March 14, 2002

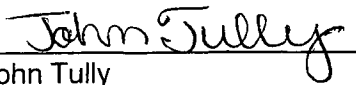
A representative of Law Engineering and Environmental Services, Inc was on site on March 14, 2001, to observe earthwork and perform soil testing as needed

Side Slope Closure

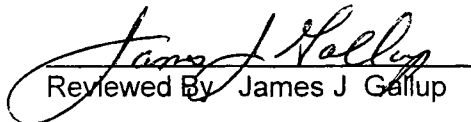
R B Baker Construction, Inc finished preparing the first lift of clay for Units 1 through 4 One permeability test was performed on Unit 1 and one index test was performed on Unit 2 Unit 3 subgrade was low throughout and additional soil was hauled in A second sample of topsoil material was taken and transported to the LAW lab for a pH test

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

by John Tully DATE OF EMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT. Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 15, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on March 15, 2002, to observe earthwork and perform soil testing as needed

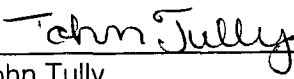
Side Slope Closure (Units 1 - 4)

R B Baker Construction, Inc continued grading and filling the Unit 3 subgrade. Compaction tests and thickness checks were taken at two locations

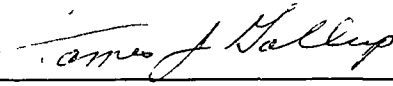
R B Baker Construction, Inc began preparing the Unit 4 subgrade

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC



John Tully



Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

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Jacksonville, FL 32207
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Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO. 40562-1-4214
DATE: March 16, 2002

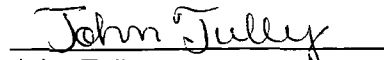
A representative of Law Engineering and Environmental Services, Inc was on site on March 16, 2002, to observe earthwork and perform soil testing as needed


Side Slope Closure (Units 1 - 4)

R B Baker Construction, Inc continued preparing the Unit 4 subgrade Two density and thickness checks were performed The subgrade for the downcomer area and remaining portion of Unit 4 is being prepared

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE: March 18, 2002

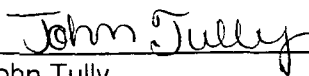
A representative of Law Engineering and Environmental Services, Inc was on site on March 18, 2002, to observe earthwork and perform soil testing as needed

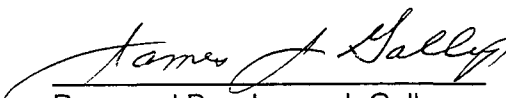
Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc began working the Units 3 and 4 subgrade Two density and thickness checks were performed on the subgrade of Unit 4, south of the downcomer See density test reports for additional information

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO • 40562-1-4214
DATE • March 19, 2002

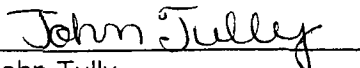
A representative of Law Engineering and Environmental Services, Inc was on site on March 19, 2002, to observe earthwork and perform soil testing as needed

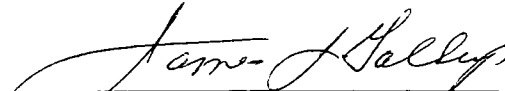
Side Slope Closure (Units 1 – 4)

R B Baker Construction, Inc continued to work on the Units 3 and 4 subgrade Underdrain sand was sampled for third test The first lift of clay is being brought in from off-site for Units 3 and 4

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703



Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT. Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE. March 20, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on March 20, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 - 4)

R B Baker Construction, Inc prepared the first clay lift on Unit 3 One permeability and one index test with densities and thickness checks were performed Unit 4 was prepared for permeability and density testing R B Baker Construction, Inc was informed of the rain forecast for tomorrow and were asked to take preventative measures to keep soils from washing onto the clay

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO . 40562-1-4214
DATE: March 21, 2002

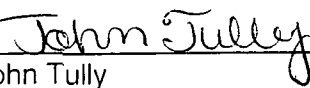
A representative of Law Engineering and Environmental Services, Inc was on site on March 21, 2002, to observe earthwork and perform soil testing as needed

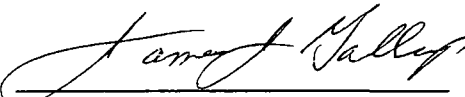
Side Slope Closure (Units 21 – 23)

R B Baker Construction, Inc worked on Units 21 through 23 on the west side It began to rain at 9 30 a m and work was stopped Samples 4 and 5 of underdrain sand were transported to the lab for permeability testing

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: March 22, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on March 22, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc continued grading Unit 4 north of Downcomer D-2

Side Slope Closure (Units 21 through 23)

Depth checks were taken on the terrace and swale of Unit 23. The terrace had depths ranging from 12 inches to 13-1/2 inches. The swale depths ranged from 4-1/2 to 10 inches, requiring additional clay. R B Baker Construction worked downcomer transition areas.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J. Gallup

BY JS WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 23, 2002

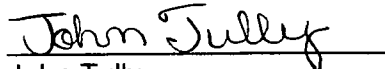
A representative of Law Engineering and Environmental Services, Inc was on site on March 7, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

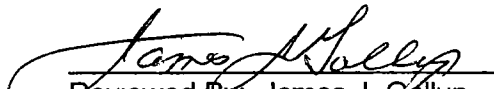
R B Baker Construction, Inc worked the 2nd lift of clay on Units 1 and 2. An index and permeability test were taken as well as two densities. See density test reports for additional information.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


John Tully

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: March 25, 2002

--A representative of Law Engineering and Environmental Services, Inc. was on-site on March 25, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

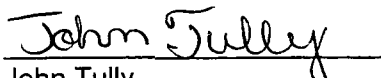
R B Baker Construction, Inc. worked the 2nd lift of clay on Units 3 and 4. A permeability sample and two index samples were taken. Five thickness checks and three density tests were performed. See density test reports for additional information.

Side Slope Closure (Units 21 through 23)

The downcomer area was rolled along the edges only.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


John Tully


Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 26, 2002

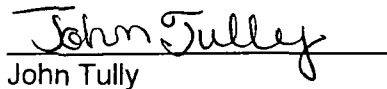
A representative of Law Engineering and Environmental Services, Inc was on site on March 26, 2002, to observe earthwork and perform soil testing as needed

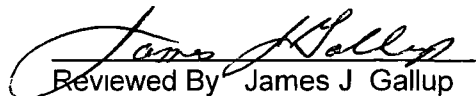
Side Slope Closure (Units 21 through 23)

Underdrains and sand are in-place in the swales Clay has been added to the top swale of Unit 23 to meet the required thickness Placement of top soil was began on the south of Units 21 through 23 A test placement of the downcomer was performed

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


John Tully


Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 27, 2002

A representative of Law Engineering and Environmental Services, Inc. was on site on March 27, 2002, to observe earthwork and perform soil testing as needed

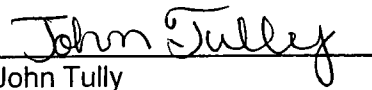
Side Slope Closure (Units 21 through 23)

R B Baker Construction, Inc. continued placement of top soil at the south end of Units 21 through 23. Roots and twigs were removed.

The top swale of Unit 23 was reworked to meet thickness requirements. Thickness ranged from 12-1/2 to 13 inches in swale. ETM verified the minimum 1 percent grade of swale.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member

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Jacksonville, FL 32207
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Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 28, 2002

A representative of Law Engineering and Environmental Services, Inc. was on site on March 28, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 21 through 23)

R B Baker Construction, Inc. continued top soil placement north of the downcomer

Side Slope Closure (Units 1 through 4)

One density, thickness and permeability test were performed. No work was performed north of downcomer. Temporary downcomer was removed. See density test report for additional information.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: March 29, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on March 29, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 21 through 23)

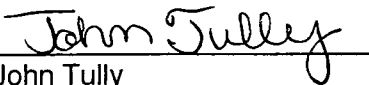
R B Baker Construction, Inc continued to place top soil north of downcomer

Side Slope Closure (Units 1 through 4)

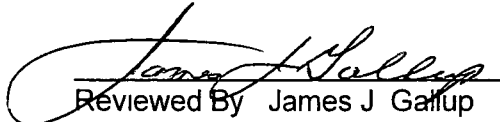
ISCO Piping Company worked tie-in on swales above Units 1 and 2 Underdrain sand was placed on underdrain pipe to prevent soil contamination

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

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Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: April 1, 2002

---A representative of Law Engineering and Environmental Services, Inc was on-site on April 1, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc worked Unit 4 to expose clay tie-in at Terrace 3 ISCO Piping Company removed the temporary downcomer pipe from Unit 4

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Tully

John Tully

BY ds WITH PERMISSION

James J. Gallup

Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO.: 40562-1-4214

PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: April 2, 2002

A representative of Law Engineering and Environmental Services, Inc was on-site on April 2, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

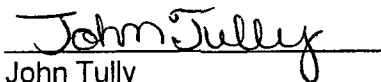
R B Baker Construction, Inc, in conjunction with TRLF, began waste removal to bring the unit to proper grade for closure. No clay is being disturbed in previous closures. Additional clay was brought in from source pit.

Side Slope Closure (Units 21 through 23)

ISCO Piping Company worked on fittings for Downcomer D-2

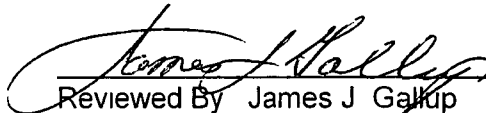
Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC




John Tully

BY ds WITH PERMISSION



Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

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Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 3, 2002

A representative of Law Engineering and Environmental Services, Inc. was on site on April 3, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc., in conjunction with TRLF, continued waste removal to bring the unit to proper grade for closure

Side Slope Closure (Units 21 through 23)

ISCO Piping Company and R B Baker continued work on Downcomer D-2

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully
BY JS WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 4, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 4, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 21 through 23)

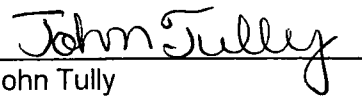
ISCO Piping Company continued work on Downcomer D-2 LAW representative observed holes dug into clay and verified that subgrade was not exposed

Side Slope Closure (Unit 4)

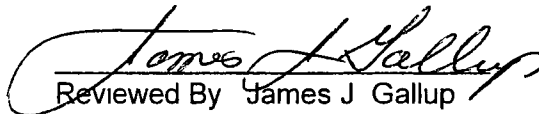
R B Baker Construction, Inc, in conjunction with TRLF, continued waste removal from Unit 4 Subgrade was brought in and graded with a dozer

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 5, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 5, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc filled the subgrade on Unit 4 and finished grading the slope

Side Slope Closure (Units 21 through 23)

~~R B Baker and ISCO Piping Company~~ filled holes with clay No additional tests were requested because subgrade was not reached

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Tully

John Tully

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO . 40562-1-4214
DATE April 8, 2002

A representative of Law Engineering and Environmental Services, Inc was on-site on April 8, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc worked on the subgrade in Unit 4 north of the downcomer Tie-in to Unit 3 was exposed only at downcomer

Side Slope Closure (Units 21 through 23)

ISCO Piping Company continued to assemble Downcomer D-2

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703



Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE. April 9, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 9, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc is preparing the subgrade to Unit 4 Transition area south of downcomer is also being graded

Side Slope Closure (Units 21 through 23)

ISCO Piping Company continued to assemble Downcomer D-2

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

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Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc

JOB NO . 40562-1-4214

PROJECT. Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: April 10, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 10, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

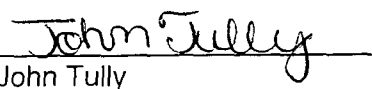
R B Baker Construction, Inc placed clay on to Unit 4 over the terrace and across the transition area to Downcomer D-24 The subgrade in Downcomer D-24 was tested for compaction

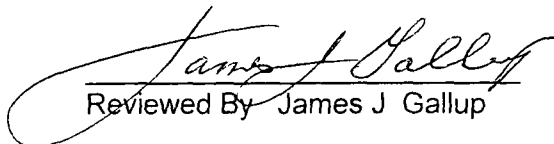
Side Slope Closure (Units 21 through 23)

ISCO Piping Company, in conjunction with R B Baker Construction, Inc , made a trough north of Downcomer D-2 to connect the 6-inch underdrain to the downcomer The subgrade and two lifts of clay were tested for compaction See field density test reports for additional information

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT. Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE: April 11, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 11, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 21 through 23)

ISCO Piping Company, in conjunction with R B Baker Construction, Inc , continued work on Downcomer D-2

- No work was performed on Units 1 through 4 due to wet clay

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE: April 12, 2002

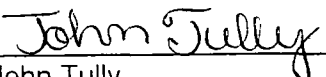
A representative of Law Engineering and Environmental Services, Inc was on site on April 12, 2002, to observe earthwork and perform soil testing as needed

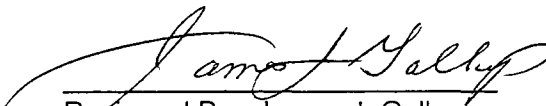
Side Slope Closure (Units 1 through 4)

ISCO Piping Company continued work on Downcomer D-2 Topsoil was brought in to make a roadway access R B Baker Construction, Inc was notified that roots and branches exceeding 3/8-inch diameter throughout the soil depth must be removed

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

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Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT. Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

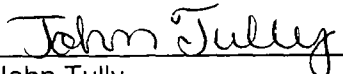
JOB NO. 40562-1-4214
DATE. April 13, 2002

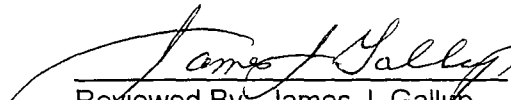
A representative of Law Engineering and Environmental Services, Inc was not on site on April 13, 2002, to observe earthwork and perform soil testing as needed

Due to wet condition, the Contractor suspended work

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE April 15, 2002

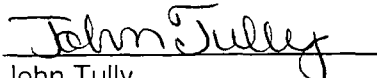
A representative of Law Engineering and Environmental Services, Inc was on site on April 15, 2002, to observe earthwork and perform soil testing as needed


Side Slope Closure (Units 21 through 23)

R B Baker Construction, Inc began encasing Downcomer D-2 in clay At Unit 23, the downcomer was encased on both sides with a 2-foot lift After consulting with England-Thims and Miller, Inc , it was decided that the encasement across Units 21 and 22 would be performed in 1-foot lifts Topsoil was placed over Downcomer D-2 at Unit 23

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE April 16, 2002

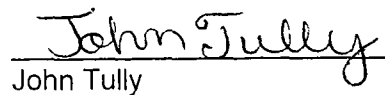
A representative of Law Engineering and Environmental Services, Inc was on-site on April 16, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 21 through 23)

R B Baker Construction, Inc continued enclosure of Downcomer D-2 The final layer of clay encasement was placed in Units 21 and 22 Topsoil was placed in Units 22 and 21 over Downcomer D-2

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE April 17, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 17, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 21 through 23)

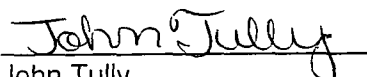
R B Baker Construction, Inc continued final cover of Downcomer D-2 at the top of Unit 23

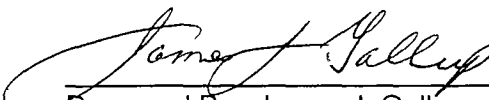
Side Slope Closure (Units 1 through 4)

The first lift of Downcomer D-24 is almost 80 percent prepared. The area at the bottom of Unit 4 had silt over it and some clay had washed out. After consulting with England-Thims and Miller, Inc, the required tests were performed. LAW will observe completion of the first lift prior to placement of the second lift.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO. 40562-1-4214
DATE April 18, 2002

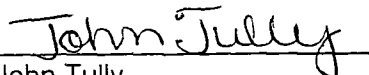
A representative of Law Engineering and Environmental Services, Inc was on site on April 18, 2002, to observe earthwork and perform soil testing as needed

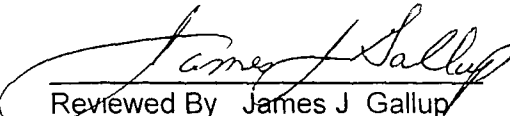
Side Slope Closure (Units 1 through 4)

The swales in Units 1 through 4 are being graded for underdrain. The grading for every 10 feet is being maintained until just before the transition to the settled units. Underdrain Sample No. 6 was taken to LAW for testing.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE: April 19, 2002

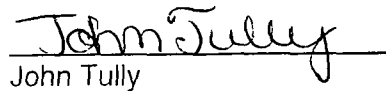
A representative of Law Engineering and Environmental Services, Inc was on site on April 19, 2002, to observe earthwork and perform soil testing as needed

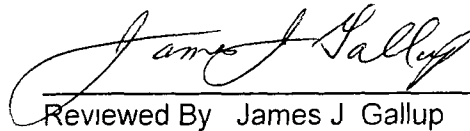
Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc continued grading swales in Units 1 through 4 No work was performed on Downcomer D-24 or north of the downcomer


Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT. England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO : 40562-1-4214
DATE: April 20, 2002

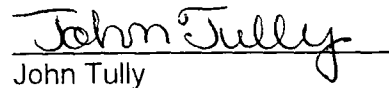
A representative of Law Engineering and Environmental Services, Inc was on site on April 20, 2002, to observe earthwork-and-perform soil testing as needed

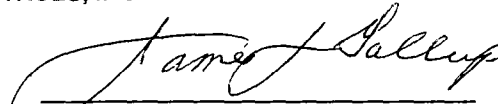
Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc began placing underdrain pipe and cover sand The swales were made with a backhoe and no attempt was made to smooth rough spots A few rises in the swale were identified and corrected by R B Baker Construction, Inc


Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 22, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 22, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc began placing topsoil in Units 1 through 4 south of Downcomer D-24 Topsoil placement was completed on Units 1 through 3

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J Gallup

BY JS WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 23, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 23, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Units 1 through 4)

R B Baker Construction, Inc continued to work topsoil on Units 1 through 3 Grading and tie-in to existing closure areas was performed Roots and twigs were removed from the topsoil

Respectfully Submitted


LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Tully
John Tully

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 24, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 24, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc cleaned off the first lift of clay at Downcomer D-24 on Unit 4. Second lift was placed and tested. Sample was taken for permeability testing.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By: James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 25, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 25, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc worked the northern 100' section to prepare the subgrade for clay placement. The clay tie-in to the existing closure was exposed on the northern end and on the east side (at the terrace) for 100 feet

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 26, 2002

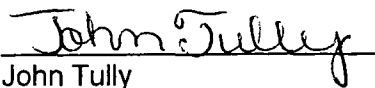
A representative of Law Engineering and Environmental Services, Inc was on site on April 26, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

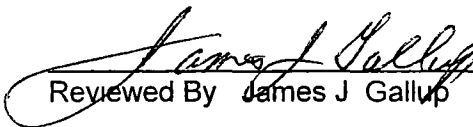
R B Baker Construction, Inc continued subgrade preparation After as-builts were conducted on the subgrade, R B Baker began placement of the first 100 feet of the first lift of clay

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 27, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 27, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc rolled the first lift of clay with the sheep's foot pad roller and smooth drum roller. One thickness test, one permeability test and one density test were performed

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

John Tully

John Tully

BY ds WITH PERMISSION

James J. Gallup

Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.: 40562-1-4214
DATE: April 29, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 29, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc worked the second 100-foot section in Unit 4 to prepare the subgrade. A decision was made by Baker's superintendent to finish preparing the subgrade of the remaining 225 feet.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
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Report of Daily Observation

CLIENT. England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO : 40562-1-4214
DATE April 30, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on April 30, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc continued working the side slope closure of Unit 4 Two subgrade density compaction tests were performed Please see the density reports for additional information

The first lift of clay was placed on the remaining portion of Unit 4

Respectfully Submitted


LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT: England-Thims and Miller, Inc
PROJECT: Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO 40562-1-4214
DATE May 1, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 1, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc completed the first lift of clay All tests and thicknesses were performed Two index samples were taken to the LAW laboratories for testing

Terrace crossing for the gas header was cut and replaced with clay in lifts of approximately 8" each Densities were performed on the subgrade and seven lifts Please see the density reports for additional information

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue

Jacksonville, FL 32207

(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc

JOB NO 40562-1-4214

PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE May 2, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 2, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc placed the second lift of clay on Unit 4 and worked on Downcomer D-24

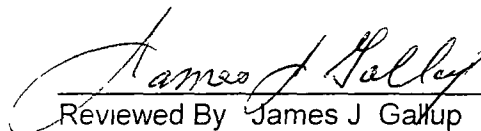
R B Baker Construction, Inc completed the second lift of clay Five thickness checks, three densities, two indexes, and one permeability test were performed Please see the density reports for additional information Samples were taken to the LAW laboratories for testing

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO : 40562-1-4214
DATE: May 3, 2002


A representative of Law Engineering and Environmental Services, Inc was on site on May 3, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc completed the work on the second lift of Unit 4 All samples were taken to the LAW laboratories for testing

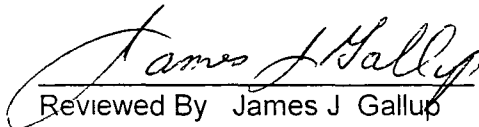
Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC



John Tully

BY ds WITH PERMISSION



Reviewed By James J Gallup

LAW

LAWGIBB Group Member

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Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT. England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO. 40562-1-4214
DATE May 6, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 6, 2002, to observe earthwork and perform soil testing as needed

Side Slope Closure (Unit 4)

R B Baker Construction, Inc decided to re-work Unit 4 after being informed of a possible failure of a permeability test. Only the first reading was taken and based on that information, Jeff Marshall of R B Baker Construction, Inc decided to rework the layer and repeat the test. Samples were then taken to the LAW laboratories for testing. Please see the density reports for additional information.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

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Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

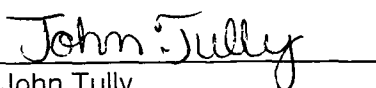
JOB NO 40562-1-4214
DATE May 7, 2002

A representative of Law-Engineering and Environmental Services, Inc was on site on May 7, 2002, to observe earthwork and perform soil testing as needed

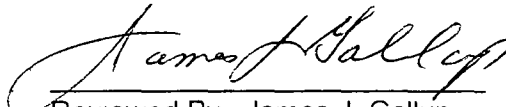
R B Baker Construction, Inc worked with Plastic Fusion Company on Units 21 through 23 to make the trenches in the vegetative cover layer for the gas header pipes

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO.. 40562-1-4214
DATE May 8, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 8, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc continued to work on Units 21 through 23 Two trenches were cut in the vegetative cover for the gas system

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J Gallup

LAW

LAWGIBB Group Member

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc

JOB NO • 40562-1-4214

PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE • May 9, 2002

A representative of Law Engineering and Environmental Services, Inc was on-site on May 9, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc worked with Plastic Fusion Company to assemble the gas header lines. Depths of the trenches were checked to insure that all areas exceeded 12" in depth

Respectfully Submitted


LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

BY ds I-TO PERMITS

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

3901 Carmichael Avenue
Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT. Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO. 40562-1-4214
DATE. May 10, 2002

A representative of Law-Engineering and Environmental Services, Inc was on site on May 10, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc continued with Plastic Fusion Company to install the gas system in Units 21 through 23 Work also began on underdrain installation in Unit 4

Respectfully Submitted


LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J. Gallup

BY ds WITH PERMISSION

LAW

LAWGIBB Group Member 

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Jacksonville, FL 32207
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Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

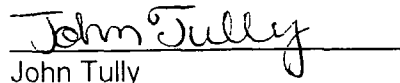
JOB NO.. 40562-1-4214
DATE May 11, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 11, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc cut through a terrace south of Unit 23 for the gas header line. The subgrade and seven lifts of clay were placed and tested. All of the affected clay liner was replaced to exceed the 12" thickness.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J. Gallup

LAW

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Report of Daily Observation

CLIENT: England-Thims and Miller, Inc

JOB NO: 40562-1-4214

PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

DATE: May 13, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 13, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc continued to work on west side with Plastic Fusion Company to install the gas header line Only observation was needed with no testing being performed

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J. Gallup

BY ds WITH PERMISSION

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Report of Daily Observation

CLIENT. England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO. 40562-1-4214
DATE May 14, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 14, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc continued to work on the west side with Plastic Fusion Company to install the gas header line Only observation was needed and no testing

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
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Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO. 40562-1-4214
DATE May 15, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 15, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc excavated the Unit 4 clay liner to create the gas header trench and replaced the clay in the lifts through the trench. Testing on subgrade and each lift was performed every 100' along the of gas header trench. Please see the density reports for additional information.

Respectfully Submitted


LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

James J. Gallup
Reviewed By James J. Gallup

BY ds WITH PERMISSION

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Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

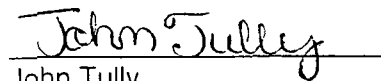
JOB NO : 40562-1-4214
DATE. May 16, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 16, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc prepared the gas header trench in the clay layer The thickness checks along bottom and sides were verified every 30 feet of gas line, per the request of Bill Davidson of England-Thims and Miller, Inc

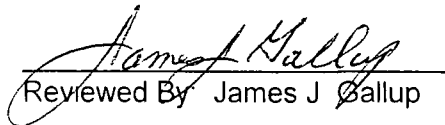
Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC




John Tully

BY JS WITH PERMISSION


Reviewed By James J Ballup

LAW

LAWGIBB Group Member 

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Report of Daily Observation

CLIENT. England-Thims and Miller, Inc
PROJECT. Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO. 40562-1-4214
DATE. May 17, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on May 17, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc , along with Plastic Fusion Company, installed a 6" gas line through the Unit 4 terrace crossing Thickness checks were performed to verify the 12-inch minimum thickness

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC

John Tully
John Tully

BY ds WITH PERMISSION

James J. Gallup
Reviewed By James J. Gallup

LAW

LAWGIBB Group Member 

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Jacksonville, FL 32207
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Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO : 40562-1-4214
DATE May 20, 2002

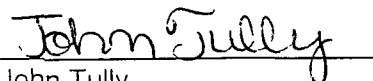
A representative of Law Engineering and Environmental Services, Inc was on site on May 20, 2002, to observe earthwork and perform soil testing as needed

R B Baker Construction, Inc , along with Plastic Fusion Company, backfilled the gas header lines near Unit 23 Density tests were performed Please see the density reports for additional information

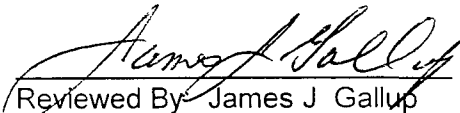
The subgrade for the gas header line near Unit 4 was tested, but needed to be re-worked and a new subgrade test will be required

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J Gallup

LAW

LAWGIBB Group Member 

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Jacksonville, FL 32207
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Report of Daily Observation

CLIENT England-Thims and Miller, Inc
PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion

JOB NO : 40562-1-4214
DATE June 5, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on June 5, 2002, to observe earthwork and perform soil testing as needed

LAW arrived on site for topsoil (vegetative cover) thickness checks. The R B Baker Construction, Inc representative said Units 1 through 4 were ready for depth checks.

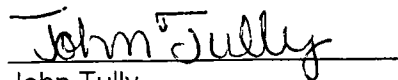
The north end of Unit 4 was insufficient (6" shallow). R B Baker Construction, Inc was informed and agreed to add additional soil. A depth check, further south, but north of downcomer, met specifications.

The grading north of downcomer was not finished and that new tests north of the downcomer would be required.

All depth checks were completed, except north of the downcomer in Unit 4.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC



John Tully

BY ds WITH PERMISSION


Reviewed By: James J. Gallup

LAW

LAWGIBB Group Member 

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Jacksonville, FL 32207
(904) 396-5173 • (904) 396-5703

Report of Daily Observation

CLIENT England-Thims and Miller, Inc

JOB NO 40562-1-4214

PROJECT Trail Ridge Landfill - Increment Closure and
Landfill Gas System Expansion


DATE June 6, 2002

A representative of Law Engineering and Environmental Services, Inc was on site on June 6, 2002, to observe earthwork and perform soil testing as needed

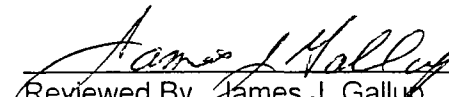
LAW arrived on site for topsoil thickness checks. Completed thickness checks were conducted north of the downcomer in Unit 4. Two additional tests were performed north of the inlet in Unit 4.

Respectfully Submitted

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC


John Tully

BY ds WITH PERMISSION


Reviewed By James J. Gallup

Appendix A
Report of Field Density Tests

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone: 904-396-5173

Report Date: 2/7/02

CLIENT: England, Thims & Miller, Inc
PROJECT: Trail Ridge Landfill Increment Closure

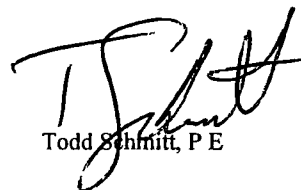
JOB NO.: 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
01/11/2002	C-2	10.4	114.9	0004	125.8	9.1	91	90	3	Finished subgrade
Location: Side slope unit 22, initial cover at approx Sta 101+60E and 90+55N Comments:										
01/11/2002	C-1	9.5	113.5	0004	125.8	9.1	90	90	3	Finished subgrade
Location: Side slope unit 22, initial cover at approx Sta 101+20E and 90+05N Comments:										
02/04/2002	C-2B	13.0	114.0	0004	125.8	9.1	91	90	3	Finished subgrade
Location: Retest of C-2A Comments:										
02/04/2002	C-1B	9.6	113.5	0004	125.8	9.1	90	90	3	Finished subgrade
Location: Retest of C-1A Comments:										
02/04/2002	C-2A	13.9	110.7	0004	125.8	9.1	88 <<	90	3	Finished subgrade
Location: Retest of C-2 Comments:										
02/04/2002	C-1A	9.1	107.5	0004	125.8	9.1	85 <<	90	3	Finished subgrade
Location: Retest of C-1 Comments:										

REMARKS

Performed in General Accordance With 3 - ASTM D2922
<< Denotes Less Than Specified Compaction

RESPECTFULLY SUBMITTED:


Todd Schmitt, P.E.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone: 904-396-5173

Report Date: 3/13/02

CLIENT. England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO. 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
02/05/2002	3-C	24.4	97.4	CL-4	108.4	16.1	90	88	1	1st lift clay
Location Clay test strip - side slope Unit 22 @ approx Sta 101+25E and 90+45N Comments										
02/05/2002	4-C	22.0	101.6	CL-4	108.4	16.1	94	88	1	1st lift clay
Location Clay test strip - side slope Unit 22 @ approx Sta 101+60E and 90+35N Comments										
02/05/2002	5-C	23.3	99.8	CL-4	108.4	16.1	92	88	1	1st lift clay
Location Clay test strip - side slope Unit 22 @ approx Sta 101+40E and 90+20N Comments										
02/05/2002	6-C	25.8	96.1	CL-4	108.4	16.1	89	88	1	1st lift clay
Location Clay test strip - side slope Unit 22 @ approx Sta 101+25E and 90+10N Comments										
02/05/2002	7-C	23.4	98.7	CL-4	108.4	16.1	91	88	1	1st lift clay
Location Clay test strip - side slope Unit 22 @ approx Sta 101+55E and 90+05N Comments										
02/12/2002	5A-C	22.4	97.3	CL-4	108.4	16.1	90	88	1	1st lift clay
Location Retest of 5-C (after clay had been cut down to proper thickness) Comments										
02/12/2002	7A-C	22.4	100.7	CL-4	108.4	16.1	93	88	1	1st lift clay
Location Retest of 7-C (after clay had been cut down to proper thickness) Comments										
02/15/2002	5B-C	24.2	98.8	CL-4	108.4	16.1	91	88	1	1st lift clay
Location Retest of 5A-C Comments										
02/15/2002	8-C	22.5	100.4	CL-4	108.4	16.1	93	88	1	2nd lift clay
Location Side slope Unit 22 @ approx Sta 101+30E and 90+40N Comments										
02/15/2002	9-C	22.3	100.6	CL-4	108.4	16.1	93	88	1	2nd lift clay
Location Side slope Unit 22 @ approx Sta 101+60E and 90+40N Comments										
02/15/2002	10-C	23.5	98.9	CL-4	108.4	16.1	91	88	1	2nd lift clay
Location Side slope Unit 22 @ approx Sta 101+45E and 90+25N Comments										
02/15/2002	11-C	24.5	96.6	CL-4	108.4	16.1	89	88	1	2nd clay lift
Location Side slope Unit 22 @ approx Sta 101+25E and 90+05N Comments										
02/15/2002	12-C	24.5	95.9	CL-4	108.4	16.1	88	88	1	2nd lift clay
Location Side slope Unit 22 @ approx Sta 101+60E and 90+10N Comments										

Note: 3-C is the same as C-3, typical.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date: 3/13/02

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
02/16/2002	13-C	8.1	113.0	0004	125.8	9.1	90	90	3	Finished subgrade
Location Side slope Unit 22 initial cover @ approx Sta 101+40E and 88+90N Comments										
02/16/2002	14-C	8.5	114.7	0004	125.8	9.1	91	90	3	Finished subgrade
Location Side slope Unit 22 initial cover @ approx Sta 101+50E and 87+40N Comments										
02/16/2002	15-C	7.5	112.9	0004	125.8	9.1	90	90	3	Finished subgrade
Location Side slope Unit 23 initial cover @ approx Sta 102+20E and 87+10N Comments										
02/16/2002	16-C	6.8	114.5	0004	125.8	9.1	91	90	3	Finished subgrade
Location Side slope Unit 23 initial cover @ approx Sta 101+95E and 88+45N Comments										
02/16/2002	17-C	8.9	113.0	0004	125.8	9.1	90	90	3	Finished subgrade
Location Side slope Unit 21 initial cover @ approx Sta 101+85E and 87+90N Comments										
02/16/2002	18-C	14.3	106.1	0004	125.8	9.1	84 <<	90	3	Finished subgrade
Location Side slope Unit 21 initial cover @ approx Sta 100+90E and 89+60N Comments										
02/18/2002	18A-C	9.8	113.5	0004	125.8	9.1	90	90	3	Finished subgrade
Location Retest of 18-C Comments										
02/19/2002	19-C	9.4	110.1	0002	112.9	11.9	98	90	3	Finished subgrade
Location Side slope Unit 23 initial cover @ approx Sta 102+45E and 90+80N Comments										
02/19/2002	20-C	19.6	101.2	CL-4	108.4	16.1	93	90	3	Finished subgrade
Location 6" gas header crossing on west slope thru terrace T-2 @ approx Sta 88+10N Comments										
02/19/2002	21-C	22.3	98.9	CL-4	108.4	16.1	91	88	3	1st lift clay
Location 6" gas header crossing on west slope thru terrace T-2 @ approx Sta 88+10N Comments										
02/19/2002	22-C	23.6	96.6	CL-4	108.4	16.1	89	88	3	2nd lift clay
Location 6" gas header crossing on west slope thru terrace T-2 @ approx Sta 88+10N Comments										
02/19/2002	23-C	22.5	99.5	CL-4	108.4	16.1	92	88	3	3rd lift clay
Location 6" gas header crossing west slope thru terrace T-2 @ approx Sta 88+10N Comments										
02/19/2002	24-C	22.3	100.0	CL-4	108.4	16.1	92	88	3	4th lift clay
Location 6" gas header crossing west slope thru terrace T-2 @ approx Sta 88+10N Comments										

Note: 3-C is the same as C-3, typical.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date 3/13/02

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
02/19/2002	25-C	21.9	99.4	CL-4	108.4	16.1	92	88	3	5th lift clay
Location 6" gas header crossing west slope thru terrace T-2 @ approx Sta 88+10N Comments										
02/19/2002	26-C	23.0	95.4	CL-4	108.4	16.1	88	88	3	6th lift clay
Location 6" gas header crossing west slope thru terrace T-2 @ approx Sta 88+10N Comments										
02/19/2002	27-C	19.5	100.1	CL-4	108.4	16.1	92	90	3	Finished subgrade
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	28-C	24.6	96.3	CL-4	108.4	16.1	89	88	3	1st lift clay
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	29-C	23.2	95.4	CL-4	108.4	16.1	88	88	3	2nd lift clay
Location 6" header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	30-C	20.3	100.1	CL-4	108.4	16.1	92	88	3	3rd lift clay
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	31-C	23.0	95.6	CL-4	108.4	16.1	88	88	3	4th lift clay
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	32-C	23.6	97.8	CL-4	108.4	16.1	90	88	3	5th lift clay
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	33-C	24.4	95.5	CL-4	108.4	16.1	88	88	3	6th lift clay
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	34-C	24.2	97.7	CL-4	108.4	16.1	90	88	3	7th lift clay
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	35-C	22.2	97.3	CL-4	108.4	16.1	90	88	3	8th lift clay
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/19/2002	36-C	20.3	101.5	CL-4	108.4	16.1	94	88	3	9th lift clay
Location 6" gas header crossing, west slope thru terrace T-3 @ approx Sta 88+10N Comments										
02/22/2002	10A-C	25.0	100.2	CL-4	108.4	16.1	92	88	3	2nd lift clay
Location Retest of 10-C Comments										

Note: 3-C is the same as C-3, typical.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
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Report Date 3/13/02

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
02/22/2002	37-C	23.1	98.1	CL-4	108.4	16.1	91	90	3	1st lift subgrade
Location Downcomer D-2 @ approx Sta 100+90E and 88+67N Comments										
02/22/2002	38-C	23.6	98.4	CL-4	108.4	16.1	91	90	3	1st lift subgrade
Location Downcomer D-2 @ approx Sta 101+65E and 88+67N Comments										
02/22/2002	39-C	22.1	97.3	CL-4	108.4	16.1	90	90	3	1st lift subgrade
Location Downcomer D-2 @ approx Sta 102+40E and 88+67N Comments										
02/22/2002	40-C	23.4	98.9	CL-4	108.4	16.1	91	90	3	Finished subgrade
Location Downcomer D-2 @ approx Sta 101+65E and 88+67N Comments										
02/22/2002	41-C	21.3	99.6	CL-4	108.4	16.1	92	90	3	Finished subgrade
Location Downcomer D-2 @ approx Sta 102+40E and 88+67N Comments										
02/26/2002	42-C	24.3	98.2	CL-4	108.4	16.1	91	90	3	Finished subgrade
Location Downcomer D-2 @ approx Sta 100+90E and 88+67N Comments										
02/27/2002	43-C	22.8	100.7	CL-4	108.4	16.1	93	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 100+95E and 88+67N Comments										
02/27/2002	44-C	22.2	101.5	CL-4	108.4	16.1	94	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 101+65E and 88+67N Comments										
02/27/2002	45-C	22.9	98.5	CL-4	108.4	16.1	91	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 102+40E and 88+67N Comments										
02/27/2002	46-C	23.3	98.5	CL-4	108.4	16.1	91	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 100+79E and 89+74N Comments										
02/27/2002	47-C	23.6	95.6	CL-4	108.4	16.1	88	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 100+90E and 88+12N Comments										
02/27/2002	48-C	25.5	97.9	CL-4	108.4	16.1	90	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 101+28E and 87+61N Comments										
02/27/2002	49-C	23.4	97.5	CL-4	108.4	16.1	90	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 101+55E and 88+34N Comments										

Note: 3-C is the same as C-3, typical.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone. 904-396-5173

Report Date 3/13/02

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
02/27/2002	50-C	21.8	101.7	CL-4	108.4	16.1	94	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 101+99E and 88+15N Comments										
02/27/2002	51-C	20.5	101.5	CL-4	108.4	16.1	94	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 102+17E and 89+83N Comments										
02/27/2002	52-C	23.3	97.0	CL-4	108.4	16.1	89	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 102+40E and 90+55N Comments										
02/27/2002	53-C	18.9	97.6	CL-4	108.4	16.1	90	88	3	1st lift clay
Location Downcomer D-2 @ approx Sta 101+46E and 90+90N Comments										
03/01/2002	54A-C	10.0	113.2	0004	125.8	9.1	90	90	3	Finished subgrade
Location Retest of 54-C Comments										
03/01/2002	54-C	11.7	106.9	0004	125.8	9.1	85 <<	90	3	Finished subgrade
Location Side slope unit 1 @ approx Sta 126+05E and 87+15N Comments										
03/01/2002	55-C	7.3	104.1	0005	119	10.1	87 <<	90	3	Finished subgrade
Location Side slope unit 1 @ approx Sta 125+35E and 87+75N Comments										
03/01/2002	55A-C	9.5	109.9	0005	119	10.1	92	90	3	Finished subgrade
Location Retest of 55-C Comments										
03/07/2002	57A-C	24.2	95.6	CL-4	108.4	16.1	88	88	3	2nd clay layer
Location Retest of 57-C Comments										
03/07/2002	57-C	29.5	92.1	CL-4	108.4	16.1	85 <<	88	3	2nd clay layer
Location Downcomer D-2 at approx Sta 88+67N and 101+00E Comments										
03/07/2002	58-C	25.0	98.4	CL-4	108.4	16.1	91	88	3	2nd clay layer
Location Downcomer D-2 at approx Sta 88+67N and 101+75E Comments										
03/07/2002	59-C	25.3	96.2	CL-4	108.4	16.1	89	88	3	2nd clay layer
Location Downcomer D-2 at approx Sta 88+67N and 102+50E Comments										
03/08/2002	60-C	25.4	96.0	CL-4	108.4	16.1	89	88	3	2nd lift clay
Location Unit 21 on side slope closure at approx Sta 90+58N and 100+87E Comments										

Note: 3-C is the same as C-3, typical.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date 3/13/02

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO 4056214214


TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
03/08/2002	61-C	23.7	99.1	CL-4	108.4	16.1	91	88	3	2nd lift clay
Location Unit 23 on side slope closure at approx Sta 90+16N and 102+19E										
Comments										

REMARKS

Performed in General Accordance With
1 - ASTM D2937
3 - ASTM D2922
<< Denotes Less Than Specified Compaction

Note: 3-C is the same as C-3, typical.

RESPECTFULLY SUBMITTED


Todd Schmitt, P.E.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date: 3/28/02

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO. 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
03/11/2002	62-C	24.1	97.5	CL-4	108.4	16.1	90	88	3	2nd clay layer
Location Unit 21 at approx Sta 89+23N and 100+90E Comments										
03/11/2002	63-C	24.6	99.9	CL-4	108.4	16.1	92	88	3	2nd clay layer
Location Unit 22 @ approx Sta 89+78N and 101+29E Comments										
03/11/2002	64-C	25.5	96.2	CL-4	108.4	16.1	89	88	3	2nd clay layer
Location Unit 21 @ approx Sta 87+94N and 100+92E Comments										
03/11/2002	65-C	23.5	99.0	CL-4	108.4	16.1	91	88	3	2nd clay layer
Location Unit 22 @ approx Sta 87+12N and 101+30E Comments										
03/11/2002	67-C	24.0	97.9	CL-4	108.4	16.1	90	88	3	2nd clay layer
Location Unit 23 at approx Sta 87+86N and 102+31E Comments										
03/14/2002	C-69	23.4	100.4	CL-4	108.4	16.1	93	88	3	1st lift clay
Location Unit 2 at approx Sta 87+05N and 125+56E Comments										
03/14/2002	C-68	20.4	104.2	CL-4	108.4	16.1	96	88	3	1st lift clay
Location Unit 1 at approx Sta 87+66N and 125+99E Comments										
03/15/2002	70-C	11.1	110.0	0005	119	10.1	92	90	3	Subgrade
Location Unit 3 at approx Sta 87+06N and 124+75E Comments										
03/15/2002	71-C	12.2	107.0	0005	119	10.1	90	90	3	Subgrade
Location Unit 3 at approx Sta 87+99N and 124+65E Comments										
03/18/2002	72-C	7.4	108.6	0005	119	10.1	91	90	3	Subgrade
Location Unit 4 at approx Sta 87+02N and 123+73E Comments										
03/18/2002	73-C	8.4	108.6	0005	119	10.1	91	90	3	Subgrade
Location Unit 4 at approx Sta 88+03N and 124+01E Comments										
03/20/2002	74-C	26.6	95.1	CL-4	108.4	16.1	88	88	3	1st lift clay
Location Unit 3 at approx Sta 87+18N and 124+51E Comments										
03/20/2002	75-C	25.0	98.8	CL-4	108.4	16.1	91	88	3	1st lift clay
Location Unit 3 at approx Sta 88+36N and 124+62E Comments										

Note: 3-C is the same as C-3, typical.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date. 3/28/02

CLIENT: England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO. 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
03/20/2002	76-C	28.8	95.4	CL-4	108.4	16.1	88	88	3	1st lift clay
Location Unit 4 at approx Sta 88+00N and 123+84E										
Comments										

REMARKS

Performed in General Accordance With
3 - ASTM D2922
<< Denotes Less Than Specified Compaction

RESPECTFULLY SUBMITTED:

Note: 3-C is the same as C-3, typical.


Todd Schmitt, P E

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone: 904-396-5173

Report Date: 4/10/02

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO : 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
03/23/2002	77-C	24.8	96.4	CL-4	108.4	16.1	89	88	3	2nd lift clay
Location Unit 1 @ approx Sta 86+95N and 126+11E Comments										
03/23/2002	78-C	22.8	98.0	CL-4	108.4	16.1	90	88	3	2nd lift clay
Location Unit 2 @ approx Sta 87+80N and 125+53E Comments										

REMARKS

Performed in General Accordance With
3 - ASTM D2922
<< Denotes Less Than Specified Compaction

RESPECTFULLY SUBMITTED:

Note: 3-C is the same as C-3, typical.


Todd Schmitt, P.E.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date: 4/16/02

CLIENT England, Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO. 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
03/25/2002	79-C	26.3	95.6	CL-4	108.4	16.1	88	88	3	2nd lift clay
Location Unit 3 @ approx Sta 87+07N and 124+73E Comments										
03/25/2002	80-C	26.2	95.4	CL-4	108.4	16.1	88	88	3	2nd lift clay
Location Unit 3 @ approx Sta 88+12N and 124+73E Comments										
03/25/2002	81-C	24.4	99.5	CL-4	108.4	16.1	92	88	3	2nd lift clay
Location Unit 4 @ approx Sta 87+33N and 124+00E Comments										
03/28/2002	82-C	20.0	102.1	CL-4	108.4	16.1	94	88	3	2nd lift clay
Location Unit 4 @ approx Sta 87+70N and 123+83E Comments										

REMARKS

Performed in General Accordance With
3 - ASTM D2922
<< Denotes Less Than Specified Compaction

RESPECTFULLY SUBMITTED

Note: 3-C is the same as C-3, typical.


Todd Schmitt, P.E.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone. 904-396-5173

Report Date: 5/1/02

CLIENT: England, Thims & Miller, Inc
PROJECT: Trail Ridge Landfill Increment Closure

JOB NO.: 4056214214

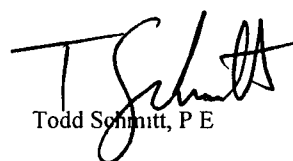
TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
04/10/2002	83-C	6.8	100.8	0002	112.9	11.9	89 <<	90	3	Subgrade
Location Downcomer D-24, Unit 4										
Comments										
04/10/2002	84-C	12.8	107.5	0005	119	10.1	90	90	3	Subgrade
Location Downcomer D-2 offshoot, north of line										
Comments										
04/10/2002	85-C	24.0	101.2	CL-4	108.4	16.1	93	88	3	1st lift clay
Location Downcomer D-2 offshoot, south of underdrain line excavation										
Comments										
04/10/2002	86-C	21.8	96.1	CL-4	108.4	16.1	89	88	3	2nd lift clay
Location Downcomer D-2 offshoot, south of underdrain line excavation										
Comments										
04/18/2002	87-C	28.2	95.4	CL-4	108.4	16.1	88	88	3	1st lift clay
Location Sta 88+80N and 123+90E in Downcomer D-24										
Comments										
04/24/2002	88-C	28.8	99.5	CL-4	108.4	16.1	92	88	3	2nd lift
Location Downcomer D-24										
Comments										
04/26/2002	89-C	8.8	106.7	0002	112.9	11.9	95	90	3	Subgrade
Location Sta 91+63N and 123+88E										
Comments										
04/27/2002	90-C	22.7	100.4	CL-4	108.4	16.1	93	88	3	1st lift
Location Unit 4 @ approx Sta 91+50N and 123+60E										
Comments										

REMARKS

Performed in General Accordance With
3 - ASTM D2922
<< Denotes Less Than Specified Compaction

RESPECTFULLY SUBMITTED.

Note: 3-C is the same as C-3, typical.


Todd Schmitt, P.E.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date. 6/25/02

CLIENT England Thims & Miller, Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
04/10/2002	82A-C	8.4	102.6	0002	112.9	11.9	91	90	3	Subgrade
Location Retest of # 82-C (Downcomer D-24)										
Comments										
04/10/2002	83-C	6.8	100.8	0002	112.9	11.9	89 <<	90	3	Subgrade
Location Downcomer D-24, Unit 4										
Comments										
04/10/2002	84-C	12.8	107.5	0005	119	10.1	90	90	3	Subgrade
Location Downcomer D-2 offshoot north of line										
Comments										
04/10/2002	85-C	24.0	101.2	CL-4	108.4	16.1	93	88	3	1st lift clay
Location Downcomer D-2 offshoot, south of underdrain line excavation										
Comments										
04/10/2002	86-C	21.8	96.1	CL-4	108.4	16.1	89	88	3	2nd lift clay
Location Downcomer D-2 offshoot south of underdrain line excavation										
Comments										
04/18/2002	87-C	28.2	95.4	CL-4	108.4	16.1	88	88	3	1st lift clay
Location Sta 88+80N and 123+90E in Downcomer D-24										
Comments										
04/24/2002	88-C	28.8	99.5	CL-4	108.4	16.1	92	88	3	2nd lift
Location Downcomer D-24										
Comments										
04/26/2002	89-C	8.8	106.7	0002	112.9	11.9	95	90	3	Subgrade
Location Sta 91+63N and 123+88E										
Comments										
04/27/2002	90-C	22.7	100.4	CL-4	108.4	16.1	93	88	3	1st lift
Location Unit 4 @ approx Sta 91+50N and 123+60E										
Comments										
04/30/2002	91-C	8.8	103.8	0002	112.9	11.9	92	90	3	Subgrade
Location Unit 4 @ Sta 89+51N and 123+77E										
Comments										
04/30/2002	92-C	12.1	104.5	0002	112.9	11.9	93	90	3	Subgrade
Location Unit 4 @ Sta 90+51N and 123+98E										
Comments										
05/01/2002	93-C	20.2	105.9	CL-4	108.4	16.1	98	88	3	1st lift clay
Location Unit 4 @ approx Sta 90+12N and 123+87E										
Comments										
05/01/2002	94-C	21.2	103.3	CL-4	108.4	16.1	95	88	3	1st lift clay
Location Unit 4 @ approx Sta 89+32N and 123+74E										
Comments										

Note: 3-C is the same as C-3, typical.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date 6/25/02

CLIENT England Thims & Miller Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
05/01/2002	95-C	22.0	99.6	CL-4	108.4	16.1	92	88	3	Subgrade
Location 6" gas HDR crossing on east slope Unit 4 @ Sta 90+24N and 123+56E Comments										
05/01/2002	96-C	21.9	100.7	CL-4	108.4	16.1	93	88	3	1st lift
Location 6" gas HDR crossing on east slope Unit 4 @ Sta 90+24N and 123+56E Comments										
05/01/2002	97-C	23.1	101.2	CL-4	108.4	16.1	93	88	3	2nd lift
Location 6" gas HDR crossing on east slope Unit 4 @ Sta 90+24N and 123+56E Comments										
05/01/2002	98-C	23.9	99.9	CL-4	108.4	16.1	92	88	3	3rd lift
Location 6" gas HDR crossing on east slope Unit 4 @ Sta 90+24N and 123+56E Comments										
05/01/2002	99-C	23.4	99.6	CL-4	108.4	16.1	92	88	3	4th lift
Location 6" gas HDR crossing on east slope Unit 4 @ Sta 90+24N and 123+56E Comments										
05/01/2002	100-C	22.9	100.6	CL-4	108.4	16.1	93	88	3	5th lift
Location 6" gas HDR crossing on east slope Unit 4 @ Sta 90+24N and 123+56E Comments										
05/01/2002	101-C	20.6	103.1	CL-4	108.4	16.1	95	88	3	6th lift
Location 6" gas HDR crossing on east slope Unit 4 @ Sta 90+24N and 123+56E Comments										
05/01/2002	102-C	24.1	100.1	CL-4	108.4	16.1	92	88	3	8th lift
Location 6" gas HDR crossing on east slope Unit 4 @ Sta 90+24N and 123+56E Comments										
05/02/2002	103-C	14.8	107.8	CL-4	108.4	16.1	99	88	3	2nd lift
Location Unit 4 @ approx Sta 91+57N and 124+04E Comments Depth = 13-1/2										
05/02/2002	104-C	19.9	100.1	CL-4	108.4	16.1	92	88	3	2nd lift
Location Unit 4 @ approx Sta 90+92N and 123+68E Comments Depth 14										
05/02/2002	105-C	18.0	103.9	CL-4	108.4	16.1	96	88	3	2nd lift
Location Unit 4 @ approx Sta 89+37N and 124+04E Comments Depth = 13										
05/06/2002	103A-C	17.4	105.1	CL-4	108.4	16.1	97	88	3	2nd lift
Location Retest of # 103-C Comments Depth = 14 Note Area was reworked and retested due to permeability failure										
05/06/2002	104A-C	23.2	101.1	CL-4	108.4	16.1	93	88	3	2nd lift
Location Retest of # 104-C Comments Depth = 14-1/2 Note Area was reworked and retested due to permeability failure										

Note: 3-C is the same as C-3, typical.

REPORT OF FIELD DENSITY TESTS



3901 Carmichael Avenue
Jacksonville, FL 32207
Phone 904-396-5173

Report Date 6/25/02

CLIENT: England Plums & Miller Inc
PROJECT Trail Ridge Landfill Increment Closure

JOB NO 4056214214

TEST DATE	TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	MAX DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
05/06/2002	105A-C	24.0	101.7	CL-4	108.4	16.1	94	88	3	2nd lift

Location Retest of # 105-C

Comments Depth = 14 Note Area was reworked and retested due to permeability failure

REMARKS

Performed in General Accordance With
3 - ASTM D2922

<< Denotes Less Than Specified Compaction

RESPECTFULLY SUBMITTED

Note: 3-C is the same as C-3, typical.

A handwritten signature in black ink, appearing to read 'T. Schmitt'.
Todd Schmitt P.E.

Appendix B
Record of Daily Rainfall

RAINFALL LOG
TRAIL RIDGE LANDFILL
NOVEMBER, 2001

AUG 7.5" /

DAY	DATE	TIME	RAINFALL (IN)	GAS SYSTEM	FINAL COVER
THU	11-1-01		0.00"		
FRI	11-2-01	<i>AM</i>	0.80"		
SAT	11-3-01		0.00		
SUN	11-4-01		0.00		
MON	11-5-01		0.00		
TUE	11-6-01		0.00		
WED	11-7-01		0.00		
THU	11-8-01		0.00		
FRI	11-9-01		0.00		
SAT	11-10-01		0.00		
SUN	11-11-01		0.00		
MON	11-12-01		0.00	<i>NOTICE TO PROCEED</i>	
TUE	11-13-01	<i>PM</i>			
WED	11-14-01	<i>ALL DAY</i>	1.75" ↓		
THU	11-15-01		0.00		
FRI	11-16-01		0.00		
SAT	11-17-01		0.00		
SUN	11-18-01		0.00		
MON	11-19-01		0.00		
TUE	11-20-01		0.00		
WED	11-21-01		0.00		
THU	11-22-01		0.00		
FRI	11-23-01		0.00		
SAT	11-24-01		0.00		
SUN	11-25-01		0.00		
MON	11-26-01		0.00		
TUE	11-27-01		0.00	<i>Begin wells</i>	
WED	11-28-01		0.00		
THU	11-29-01		0.00		
FRI	11-30-01		0.00		
			2.55"		
TOTAL RAINFALL			<i>AUG = 1.98"</i>	2.55"	+ 0.57"

William E. ...
 Signature

RAINFALL LOG
TRAIL RIDGE LANDFILL
DECEMBER, 2001

AUG > .5" (2)

DAY	DATE	TIME	RAINFALL (IN)	GAS SYSTEM	FINAL COVER
SAT	12-1-01		0.00"		
SUN	12-2-01		0.00"		
MON	12-3-01		0.00"		
TUE	12-4-01		0.00"		
WED	12-5-01		0.00"		
THU	12-6-01		0.00"		
FRI	12-7-01		0.00"		
SAT	12-8-01				
SUN	12-9-01		2.06" ↓		
MON	12-10-01		0.25"	SLOPES WET	
TUE	12-11-01		0.00"	SLOPES WET	
WED	12-12-01	PM	0.12"		
THU	12-13-01		0.00		
FRI	12-14-01		0.02"		
SAT	12-15-01		0.00"	COMPLETED well	
SUN	12-16-01		0.00"		
MON	12-17-01		0.00"		
TUE	12-18-01	2:00 AM	0.15"		
WED	12-19-01		0.00		
THU	12-20-01		0.00		
FRI	12-21-01		0.00		
SAT	12-22-01		0.00		
SUN	12-23-01		0.00		
MON	12-24-01		0.00		
TUE	12-25-01		0.00		
WED	12-26-01		0.00		
THU	12-27-01		0.00		
FRI	12-28-01		0.00		
SAT	12-29-01		0.00		
SUN	12-30-01		0.00		
MON	12-31-01		0.00		
TOTAL RAINFALL			2.58'	AUG = 2.71"	- 0.13"

William Taylor
Signature

RAINFALL LOG
TRAIL RIDGE LANDFILL
JANUARY, 2002

AUG > 5' (2)

DAY	DATE	TIME	RAINFALL (IN)	GAS SYSTEM	FINAL COVER
TUE	1-1-02	PM	TRACE	Holiday	
WED	1-2-02	All Day	0.28"	N.P. ENROUTE	Survey 21-23 IMP
THU	1-3-02		0.00		RD 21-23 IMP
FRI	1-4-02		0.00		RD 21-23 IMP
SAT	1-5-02		0.00		
SUN	1-6-02		0.16"		
MON	1-7-02		0.00		
TUE	1-8-02		0.00		
WED	1-9-02		0.00		
THU	1-10-02		0.00		
FRI	1-11-02		0.00		Final Cover Test Strip Complete
SAT	1-12-02		0.00		
SUN	1-13-02		0.25"		
MON	1-14-02	All Day	2.33"	10" impacted	UNITS 21-23 IMP
TUE	1-15-02		0.00		UNITS 21-23 IMP
WED	1-16-02		0.00		UNITS 21-23 IMP
THU	1-17-02		0.00		UNITS 21-23 IMP
FRI	1-18-02		0.00		UNITS 21-23 IMP
SAT	1-19-02		0.00		UNITS 21-23 IMP
SUN	1-20-02		0.00		-
MON	1-21-02	New Day 8:00 AM	1.57"	10" impacted	UNITS 21-23 IMP
TUE	1-22-02		0.00	10" impacted	UNITS 21-23 IMP
WED	1-23-02		0.00		UNITS 21-23 IMP
THU	1-24-02		0.00		UNITS 21-23 IMP
FRI	1-25-02	11:30 AM	0.62"		UNITS 21-23 IMP
SAT	1-26-02	Trace	0.00		UNITS 21-23 IMP
SUN	1-27-02		0.00		-
MON	1-28-02	3:30 PM	0.78"		UNITS 21-23 IMP
TUE	1-29-02		0.00		UNITS 21-23 IMP
WED	1-30-02		0.00		UNITS 21-23 IMP
THU	1-31-02		0.00		1/2 DAY UNITS 21-23
TOTAL RAINFALL			6.19"	AUG. 2.95"	+ 3.24"

William Fawcett
 Signature

RAINFALL LOG
TRAIL RIDGE LANDFILL
FEBRUARY, 2002

AUG > 5" (3)


DAY	DATE	TIME	RAINFALL (IN)	GAS SYSTEM	FINAL COVER
FRI	2-1-02		0.00 "		RECOVER DRY 21-23
SAT	2-2-02	8:00AM	TRSCC		RECOVER DRY 21-23
SUN	2-3-02		0.00		
MON	2-4-02		0.00		
TUE	2-5-02		0.00		placed clay test
WED	2-6-02		0.00		STRIP
THU	2-7-02	ALL DAY	0.31 "		UNITS 21-23 IMP
FRI	2-8-02		0.00		RECOVER 1/2 DAY
SAT	2-9-02		0.00		
SUN	2-10-02		0.00	END CONTRACT GAS	
MON	2-11-02		0.00		
TUE	2-12-02		0.00		
WED	2-13-02	2:16 PM / STEADY AM 2:00 PM	0.03 "		placed 2ND LIFT test
THU	2-14-02		0.00		
FRI	2-15-02		0.00		
SAT	2-16-02		0.00		
SUN	2-17-02		0.00		
MON	2-18-02		0.00		
TUE	2-19-02		0.00		
WED	2-20-02		0.00		
THU	2-21-02	9:00 AM	0.09 "		
FRI	2-22-02	6:30 PM	0.03		
SAT	2-23-02	ALL DAY	1.06 "		UNITS 21-23 IMP
SUN	2-24-02		0.00		
MON	2-25-02		0.00		
TUE	2-26-02		0.00		
WED	2-27-02		0.00		
THU	2-28-02		0.00		
TOTAL RAINFALL			1.52	AUG. = 3.19 "	-1.67

William T. Brown
 Signature

RAINFALL LOG
TRAIL RIDGE LANDFILL
MARCH, 2002

AUG 7.5" (2)

DAY	DATE	TIME	RAINFALL (IN)	GAS SYSTEM	FINAL COVER
FRI	3-1-02		0.00		
SAT	3-2-02	all day	0.00		All units impacted
SUN	3-3-02	all day	0.40"		
MON	3-4-02		0.00		All units imp.
TUE	3-5-02		0.00		All units imp
WED	3-6-02		0.00		Recovery day
THU	3-7-02		0.00		
FRI	3-8-02		0.00		
SAT	3-9-02		0.00		
SUN	3-10-02		0.00		
MON	3-11-02		0.00		
TUE	3-12-02	8:00 PM	0.40"		
WED	3-13-02	Trace AM	0.00		Clay imp? All units
THU	3-14-02		0.00		
FRI	3-15-02		0.00		
SAT	3-16-02		0.00		
SUN	3-17-02		0.00		
MON	3-18-02		0.00		
TUE	3-19-02		0.00		
WED	3-20-02		0.00		
THU	3-21-02	9:30 AM	0.40"		Clay imp All units
FRI	3-22-02		0.00		
SAT	3-23-02		0.00		
SUN	3-24-02		0.00		
MON	3-25-02		0.00		
TUE	3-26-02	5:30 PM	0.06"		NO IMPACT
WED	3-27-02		0.00		
THU	3-28-02		0.00		
FRI	3-29-02		0.00		
SAT	3-30-02		0.00		
SUN	3-31-02		0.00		
TOTAL RAINFALL			4.26"	AUG = 3.77"	+ 0.49"


 Signature

RAINFALL LOG
TRAIL RIDGE LANDFILL
APRIL, 2002

AUG 7.5" (2)

DAY	DATE	TIME	RAINFALL (IN)	GAS SYSTEM	FINAL COVER
MON	4-1-02		0.00		
TUE	4-2-02	P.M.			
WED	4-3-02	A.M.	0.48" ↓		MINIMAL IMPACT
THU	4-4-02		0.00		
FRI	4-5-02		0.00		
SAT	4-6-02		0.00		
SUN	4-7-02		0.00		
MON	4-8-02		0.00		
TUE	4-9-02		0.00		
WED	4-10-02	5:30 PM	0.33"		NO IMPACT
THU	4-11-02	2:30 PM	0.29"		CLAY + WITNESS 1-4 IMP
FRI	4-12-02	3:00 PM	2.70"	1/2 DEV	21-23 IMPACTED
SAT	4-13-02	A.M.	0.20"		ALL WORK IMP
SUN	4-14-02		0.00		
MON	4-15-02		0.00		
TUE	4-16-02		0.00		
WED	4-17-02		0.00		
THU	4-18-02		0.00		
FRI	4-19-02		0.00		
SAT	4-20-02		0.00		
SUN	4-21-02		0.00		
MON	4-22-02		0.00		
TUE	4-23-02		0.00		RECOVERY DEV T-3
WED	4-24-02		0.00		
THU	4-25-02		0.00		
FRI	4-26-02		0.00		
SAT	4-27-02		0.00		
SUN	4-28-02		0.00		
MON	4-29-02		0.00		
TUE	4-30-02	6:30 PM	0.05"		
WED	4-31-02				
TOTAL RAINFALL			4.05"	AUG 2.72	+ 1.33

Signature

William S. ...

RAINFALL LOG
TRAIL RIDGE LANDFILL
MAY, 2002

AVG. 7.5" (2)

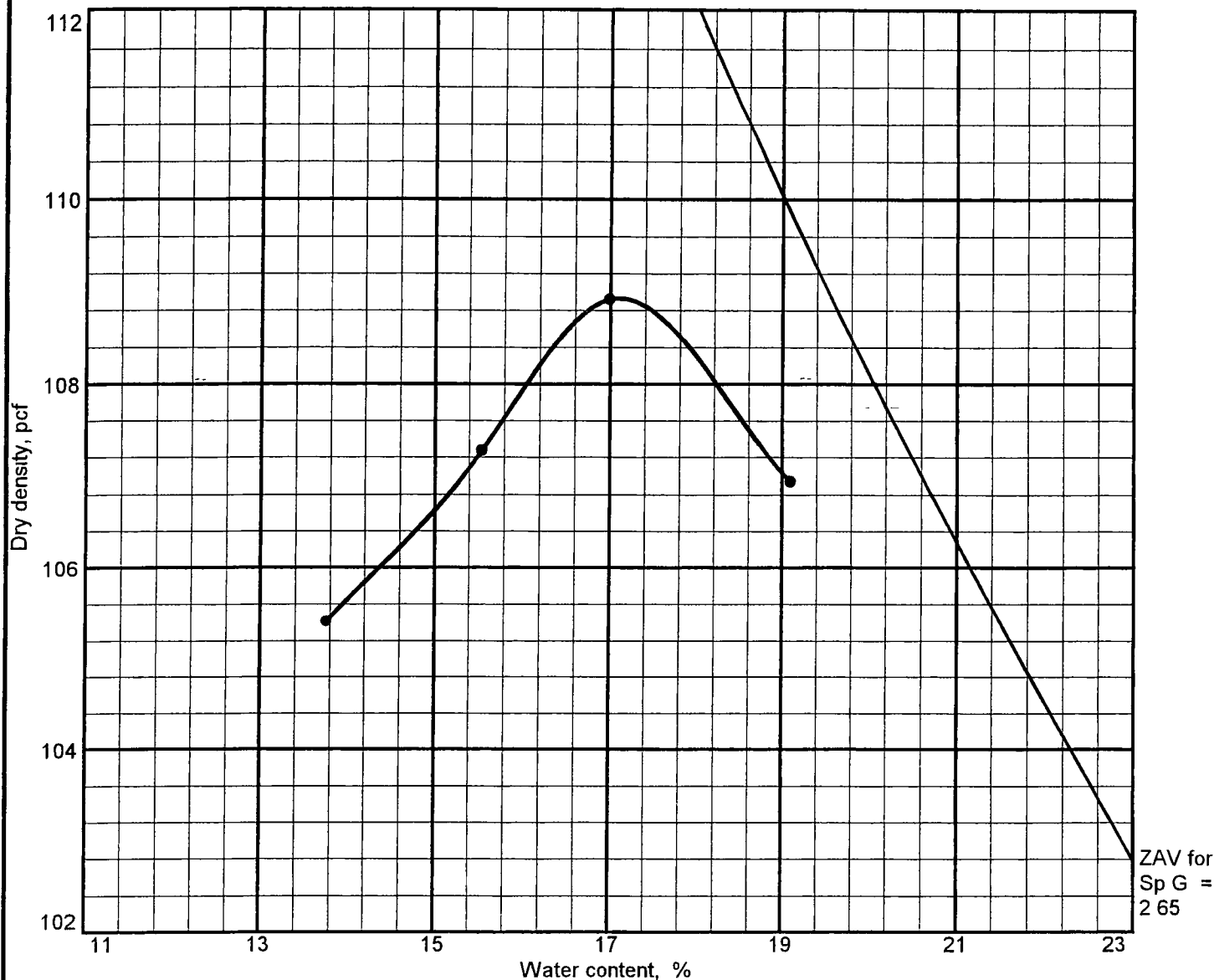
DAY	DATE	TIME	RAINFALL (IN)	GAS SYSTEM	FINAL COVER
WED	5-1-02		0.00		
THU	5-2-02		0.00		
FRI	5-3-02		0.00		
SAT	5-4-02		0.00		
SUN	5-5-02		0.00		
MON	5-6-02		0.00		
TUE	5-7-02		0.00		
WED	5-8-02		0.00		
THU	5-9-02		0.00		
FRI	5-10-02		0.00		
SAT	5-11-02		0.00		
SUN	5-12-02		0.00		
MON	5-13-02	2:00 PM	0.15"		
TUE	5-14-02		0.00		
WED	5-15-02		0.00		
THU	5-16-02		0.00		
FRI	5-17-02	6:00 PM			
SAT	5-18-02				
SUN	5-19-02		0.30"		
MON	5-20-02		0.00		
TUE	5-21-02		0.00		
WED	5-22-02		0.00		
THU	5-23-02		0.00		
FRI	5-24-02		0.00		
SAT	5-25-02		0.00		
SUN	5-26-02		0.00		
MON	5-27-02		0.00		
TUE	5-28-02		0.00		
WED	5-29-02	1:00 PM	TRACE		
THUR	5-30-02		0.00		
FRI	5-31-02	4:00 PM			
TOTAL RAINFALL			0.45"	AVG. 3.84"	- 3.39"

William Sabers
Signature

Appendix C

Proctor Test Reports / Grain Size Distribution Test Results

COMPACTION TEST REPORT



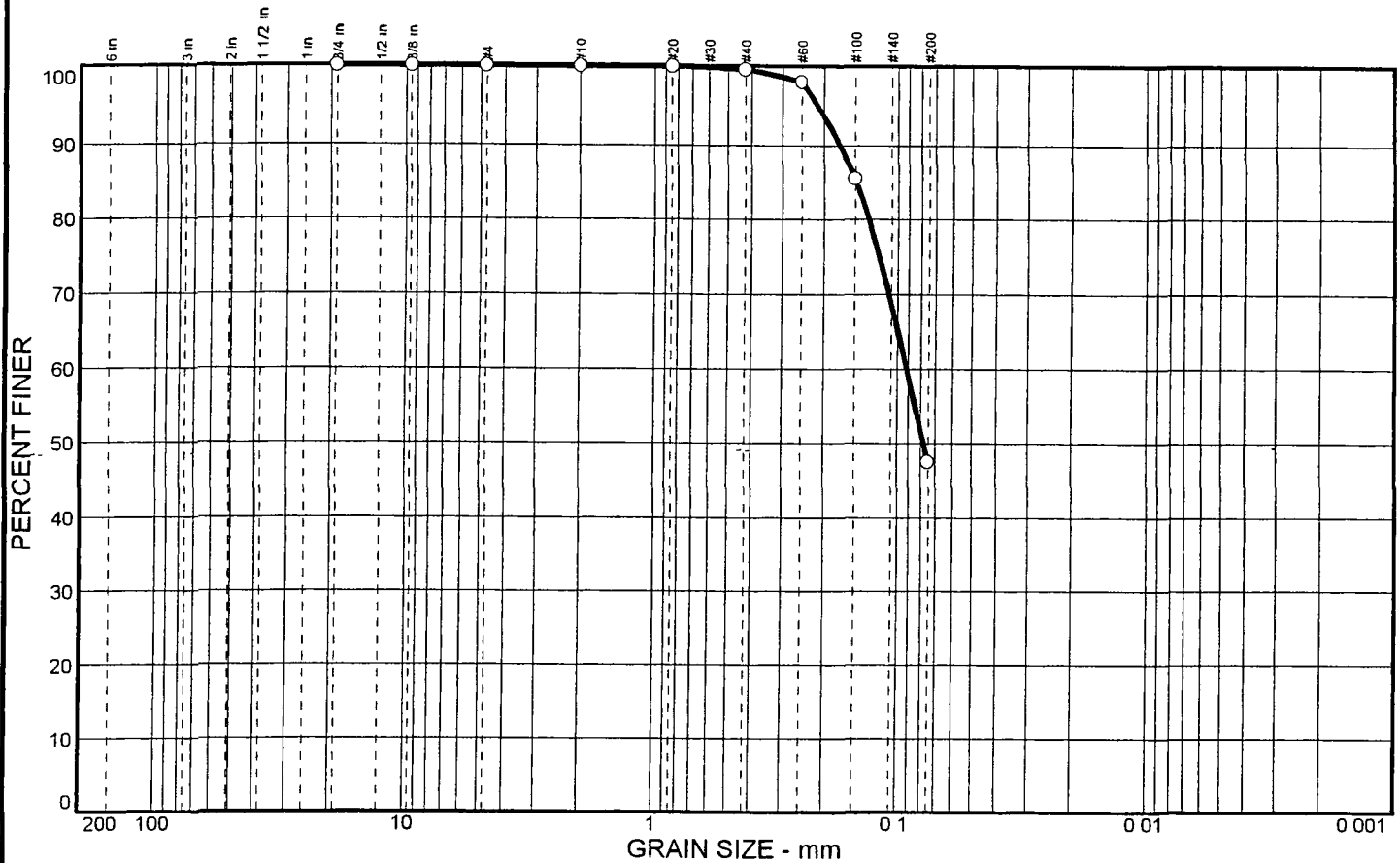
Test specification FDOT FM T-5-521 Modified

Elev/ Depth	Classification		Nat. Moist.	Sp G	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SC	A-7-6(21)			80		0.0	47.5

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 108.9 pcf Optimum moisture = 17.1 %		Gray, Orange and Brown Very Clayey Fine SAND
Project No. Client: England Thums & Miller Project: Trailridge Landfill Closure Construction Project No 40562-1-4214 ● Source Proposed Clay Liner Material Sample No.: CL-1		Remarks: Pit Sample 4-2 <div>Kirk A. McIntosh 12-17-01 Plate</div>
COMPACTION TEST REPORT Law Engineering and Environmental Services, Inc		

Kirk A. McIntosh, P.E.

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		52.5	47.5		SC	A-7-6(21)	22	80

SIEVE	PERCENT FINER		
inches size	○		
75	100.0		
375	100.0		
GRAIN SIZE			
D ₆₀	0.0915		
D ₃₀			
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE	PERCENT FINER		
number size	○		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.6		
#60	98.0		
#100	85.5		
#200	47.5		

SOIL DESCRIPTION
 ○ Gray Orange and Brown Very Clayey Fine SAND

REMARKS
 ○

○ Source Proposed Clay Liner Material

Sample No. CL-1

Kirk A. McIntosh

(2-17-0)

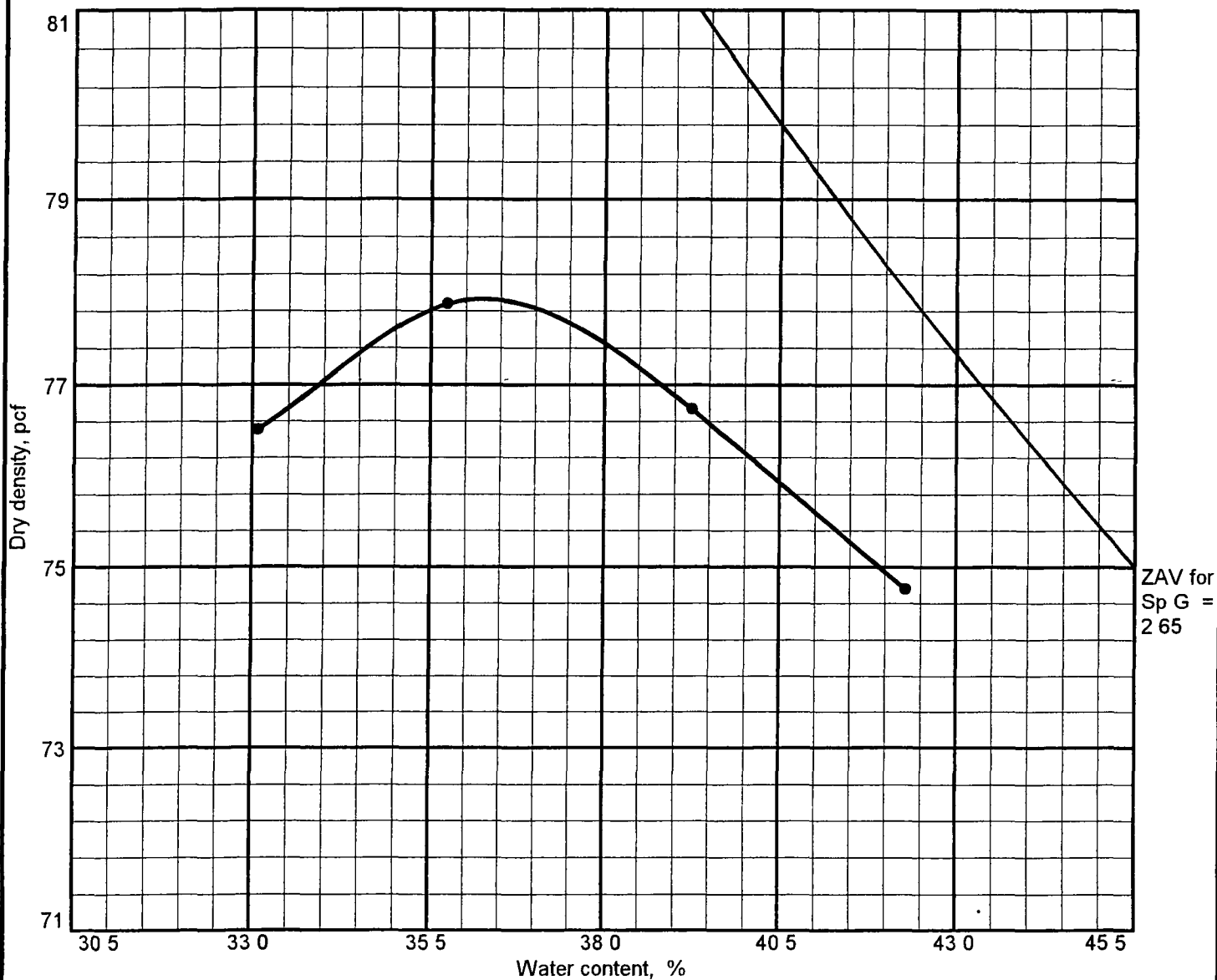
Law Engineering and Environmental Services, Inc.

Client England Thms & Miller
 Project Trailridge Landfill Closure Construction
 Project No. 40562-1-4214
 Project No.

Plate

Kirk A. McIntosh, P.E.

COMPACTION TEST REPORT



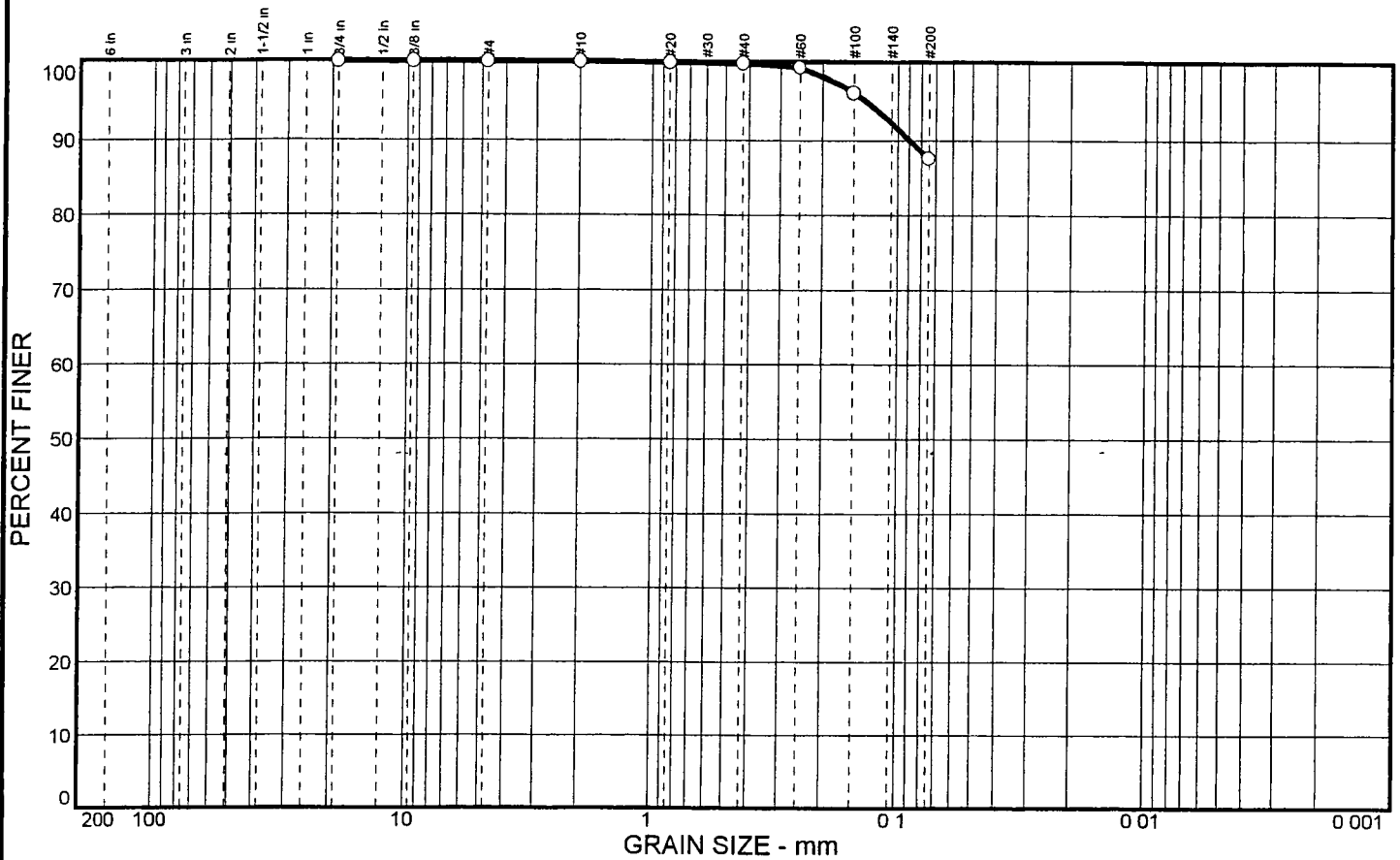
Test specification FDOT FM T-5-521 Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	CH	A-7-5(109)			144		0.0	87.5

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 77.9 pcf		Light Gray Sandy CLAY
Optimum moisture = 36.3 %		
Project No Client: England Thums & Miller Project: Trailridge Landfill Closure Construction Project No 40562-1-4214 ● Source. Proposed Clay Liner Material Sample No.: CL-2		Remarks: Test Pit No 5-2 <i>Kirk A. McIntosh</i> 12-17-01 Plate
COMPACTION TEST REPORT		
Law Engineering and Environmental Services, Inc		

Kirk A. McIntosh, P.E.

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		12.5	87.5		CH	A-7-5(109)	37	144

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ Light Gray Sandy CLAY
○	○			○				
75	100.0			#4	100.0			
375	100.0			#10	100.0			
				#20	99.9			
				#40	99.8			
				#60	99.3			
				#100	96.1			
				#200	87.5			
GRAIN SIZE								REMARKS ○ Pit Sample No. 5-2
D ₆₀								
D ₃₀								
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source Proposed Clay Liner Material

Sample No. CL-2

Kirk A. McInerney
(2-17-01)

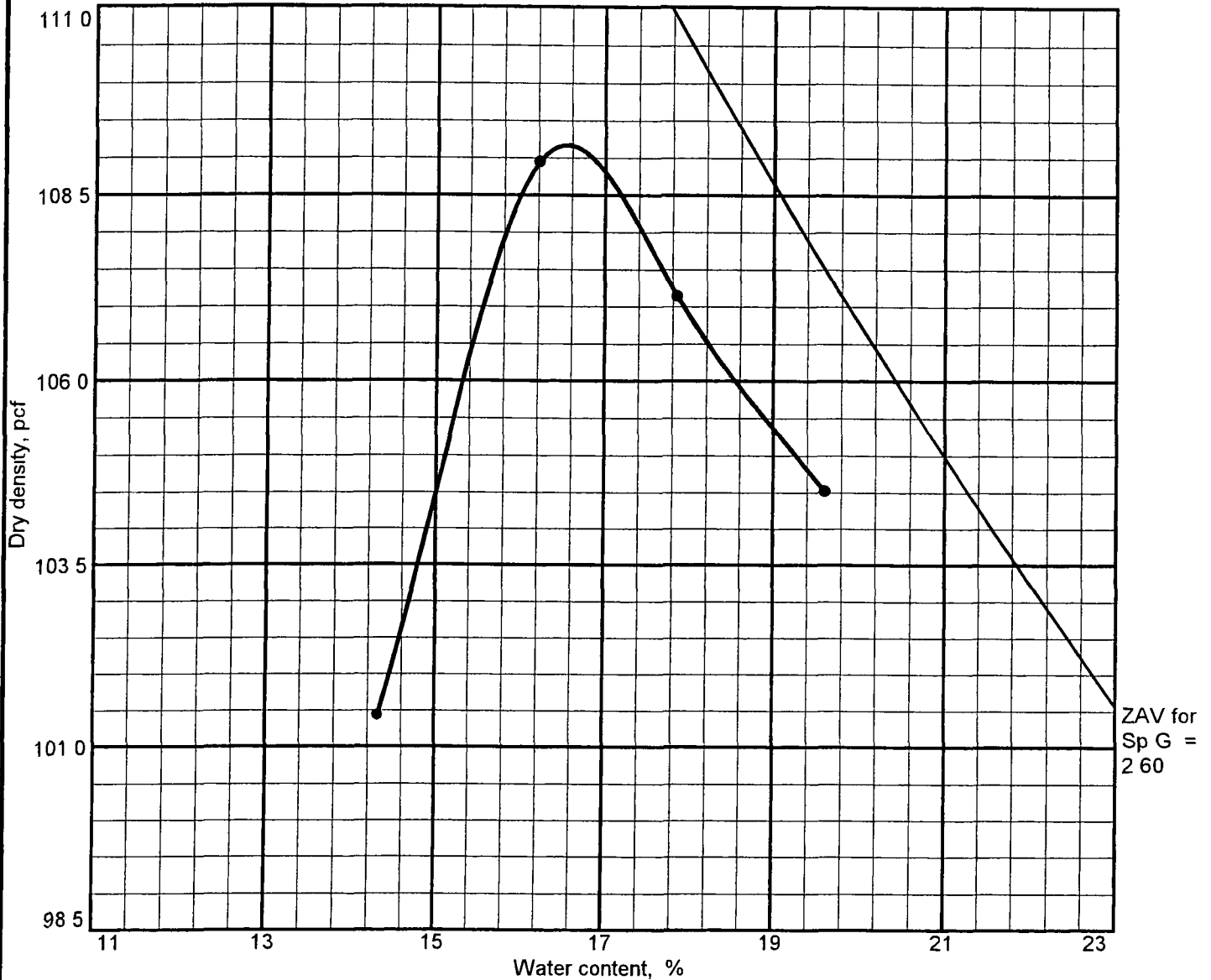
**Law Engineering and
Environmental Services, Inc.**

Client England Thims & Miller
Project Trailridge Landfill Closure Construction
Project No. 40562-1-4214
Project No.

Plate

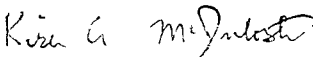
Kirk A. McInerney

COMPACTION TEST REPORT



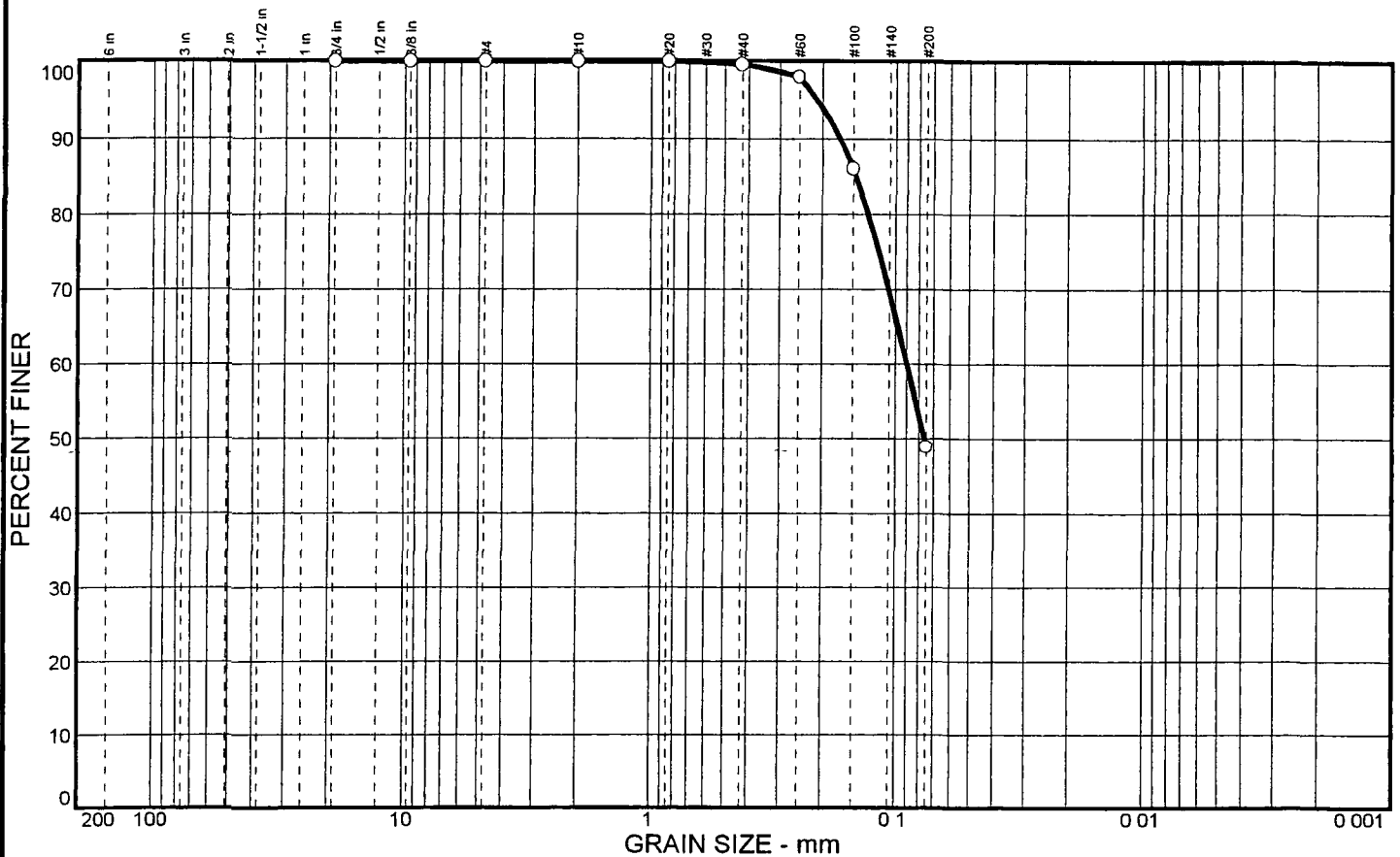
Test specification FDOT FM T-5-521 Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% >	% < No 200
	USCS	AASHTO						
	SC	A-4(0)					0.0	48.9

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 109.2 pcf Optimum moisture = 16.5 %	Brown Very Clayey Fine SAND
Client: England Thums & Miller Project. Trailridge Landfill Closure Construction Project No. 40562-1-4214 Source: Proposed Clay Liner Material Sample No.: CL-3	Remarks: Test Pit Sample 8-1  Plate 12-18-01
COMPACTION TEST REPORT Law Engineering and Environmental Services, Inc.	

Kirk A. McIntosh, P.E.

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		51.1	48.9		SC	A-4(0)		

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER		
	○				○		
75	100.0			#4	100.0		
375	100.0			#10	100.0		
				#20	100.0		
				#40	99.6		
				#60	98.0		
				#100	86.0		
				#200	48.9		
GRAIN SIZE							
D ₆₀	0.0898						
D ₃₀							
D ₁₀							
COEFFICIENTS							
C _c							
C _u							

SOIL DESCRIPTION
 ○ Brown Very Clayey Fine SAND

REMARKS
 ○ Pit Sample No. 8-1

○ Source Proposed Clay Liner Material

Sample No. CL-3

Karin A. McIntosh

(2-18-0)

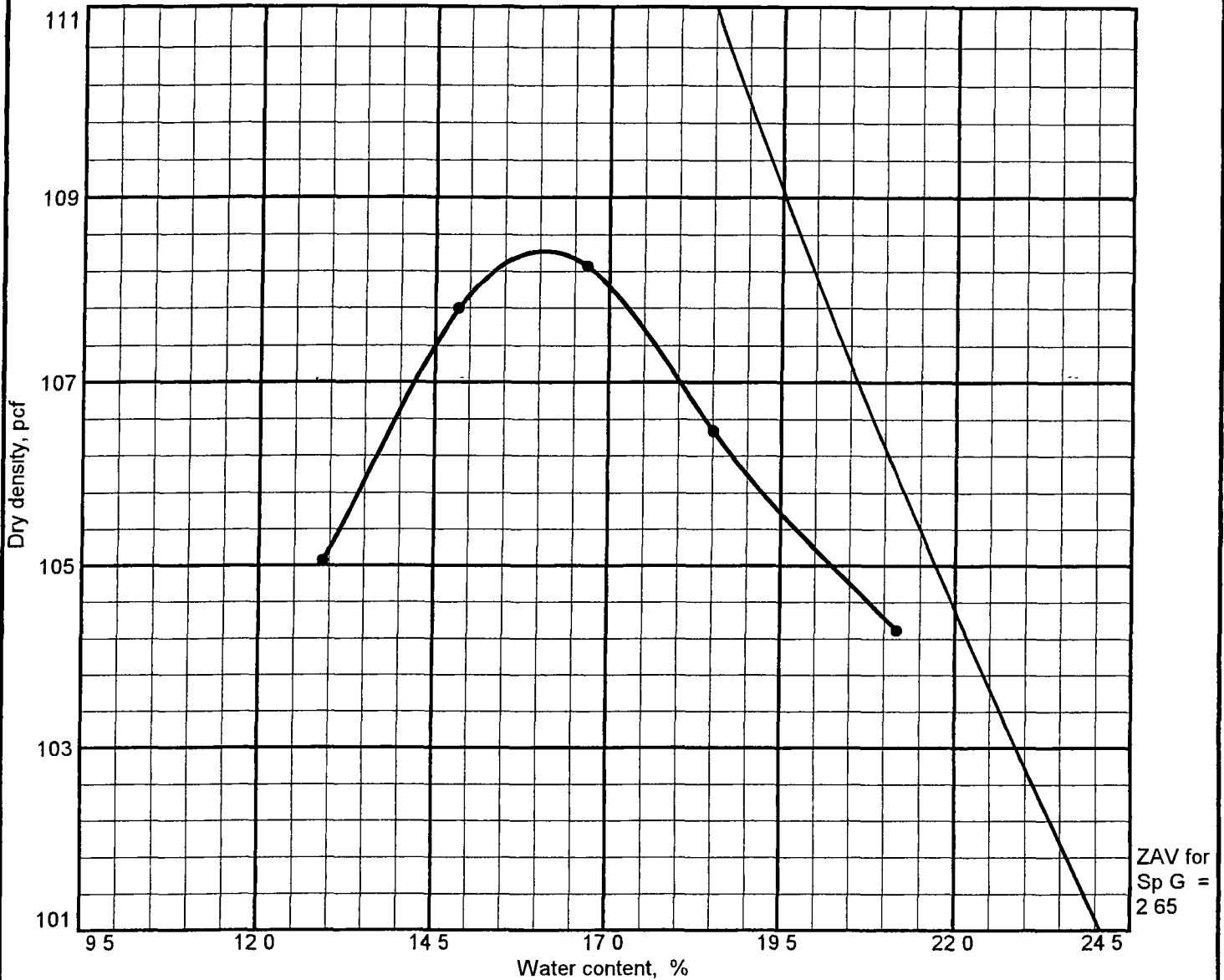
**Law Engineering and
Environmental Services, Inc.**

Client England Thims & Miller
 Project Trailridge Landfill Closure Construction
 Project No. 40562-1-4214
 Project No.

Plate

Karin A. McIntosh, P.E.

COMPACTION TEST REPORT



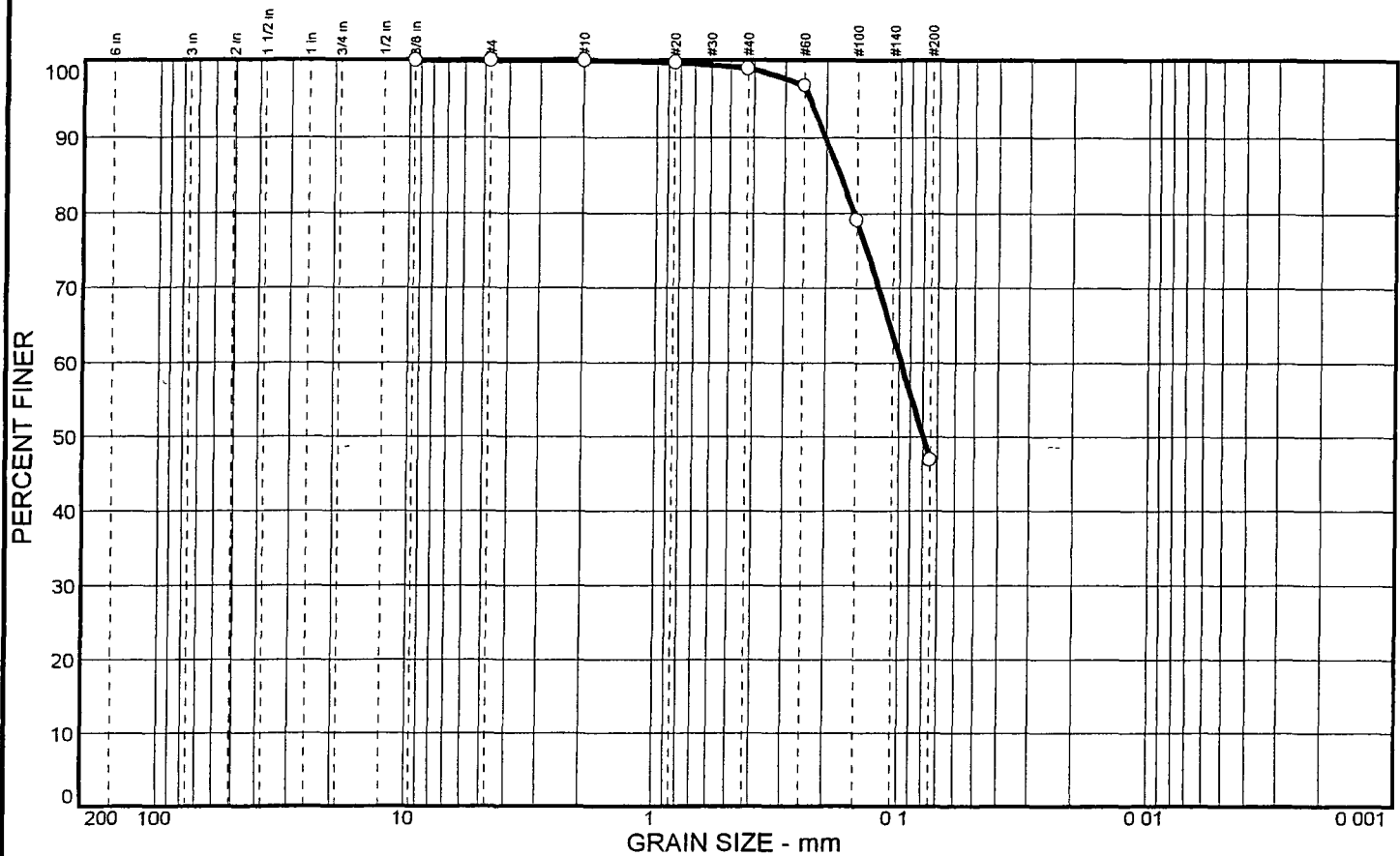
Test specification ASTM D 698-91 Procedure A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp G.	LL	PI	% > No.4	% < No 200
	USCS	AASHTO						
	SC	A-6(0)					0.0	46.9

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 108.4 pcf Optimum moisture = 16.1 %		Very clayey fine SAND
Project No. Client: England, Thoms & Miller Project: Trailridge Landfill Closure Construction Project No. 40562-1-4214 ● Source: Proposed Clay Liner Material Sample No.: CL-4		
COMPACTION TEST REPORT Law Engineering and Environmental Services, Inc		

Michael B. Woodward, P.E.

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		53.1	46.9		SC	A-6(0)		

SIEVE	PERCENT FINER		
inches size	○		
375	100 0		

○ Source Proposed Clay Liner Material

Sample No CL-4

**Law Engineering and
Environmental Services, Inc.**

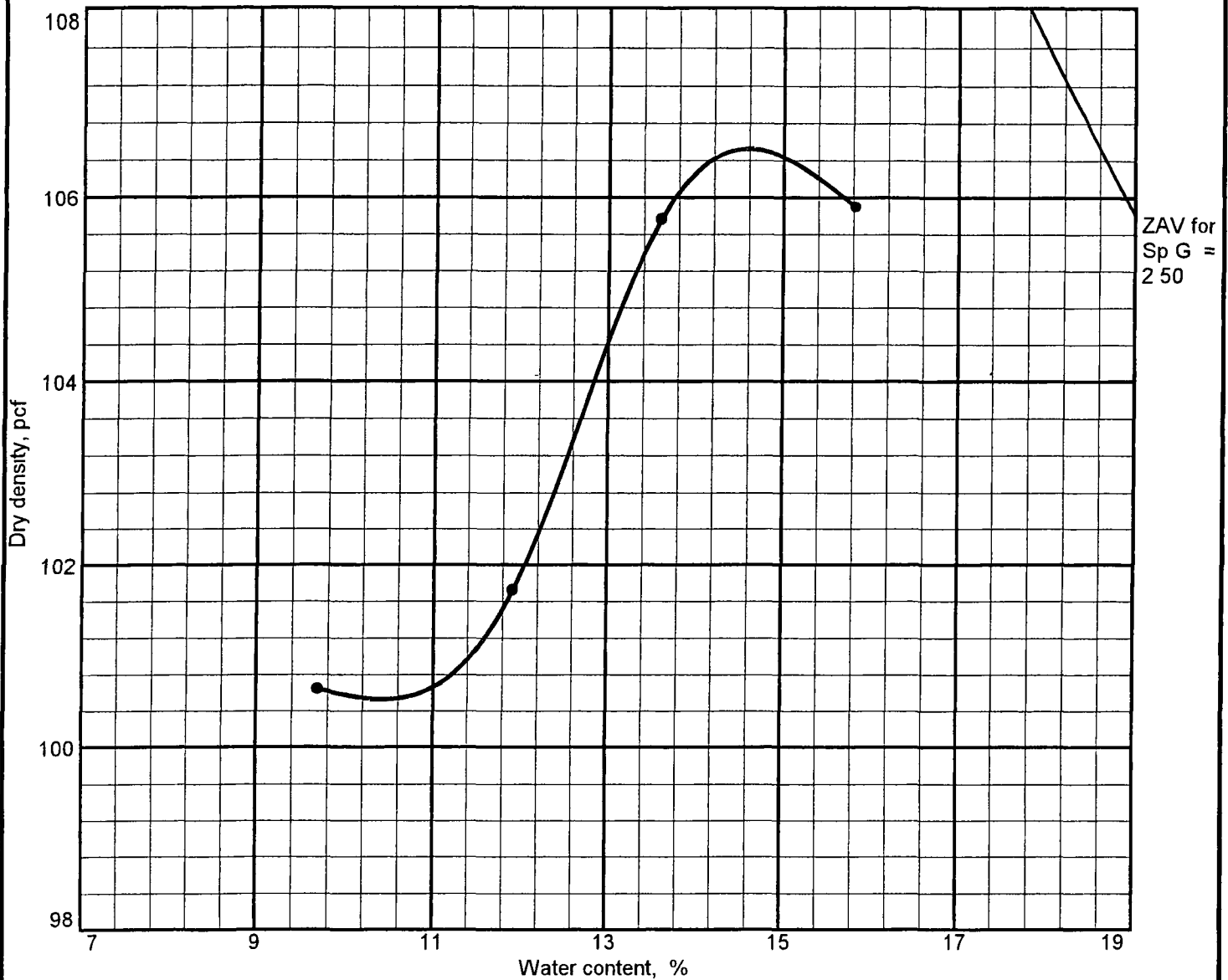
Client England Thums & Miller
Project Trailridge Landfill Closure Construction
Project No 40562-1-4214

Project No

Michael B. Woodward 2/17/02 Plate

Michael B. Woodward, P.E.

COMPACTION TEST REPORT



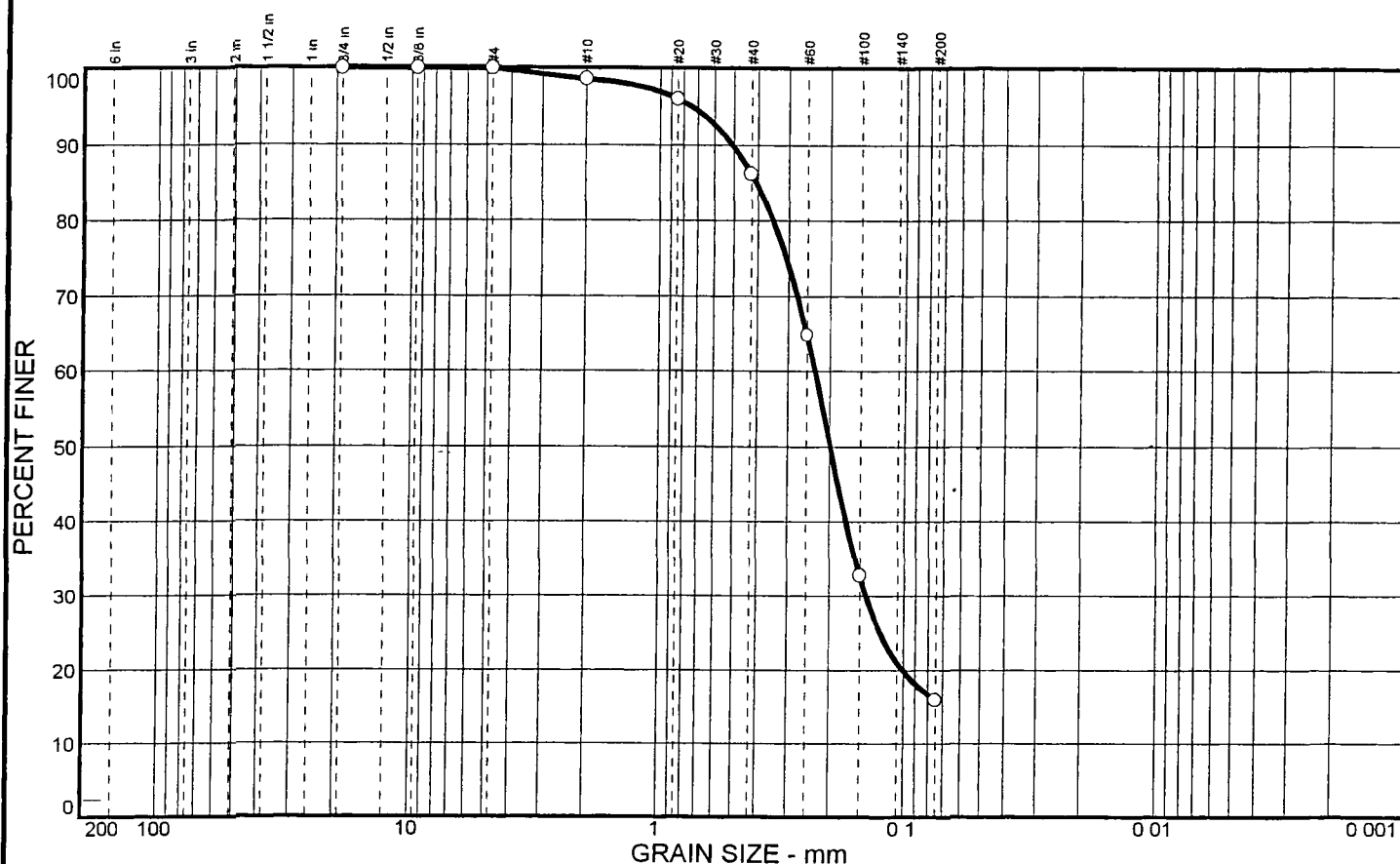
Test specification ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SM	A-2-4(0)					00	15.9

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 106.5 pcf		Gray-Brown Silty Fine SAND with some organics
Optimum moisture = 14.6 %		
Project No Client: England Thims & Miller Project: Trailridge Landfill Closure Construction Project No 40562-1-4214 Source: Side Slope Unit No 22 Sample No Proctor No 1		Remarks: <div style="text-align: right; font-family: cursive;"> <i>M Woodward</i> 12-6-01 Plate </div>
COMPACTION TEST REPORT		
Law Engineering and Environmental Services, Inc.		

Michael B. Woodward, P.E.

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		84.1	15.9		SM	A-2-4(0)		

SIEVE inches size	PERCENT FINER		
	○		
75	100.0		
375	100.0		
GRAIN SIZE			
D ₆₀	0.231		
D ₃₀	0.141		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	98.6		
#20	96.1		
#40	86.1		
#60	64.8		
#100	32.8		
#200	15.9		

SOIL DESCRIPTION ○ Gray-Brown Silty Fine SAND with some organics
REMARKS ○

○ Source Side Slope Unit No 22

Sample No Proctor No 1

**Law Engineering and
Environmental Services, Inc.**

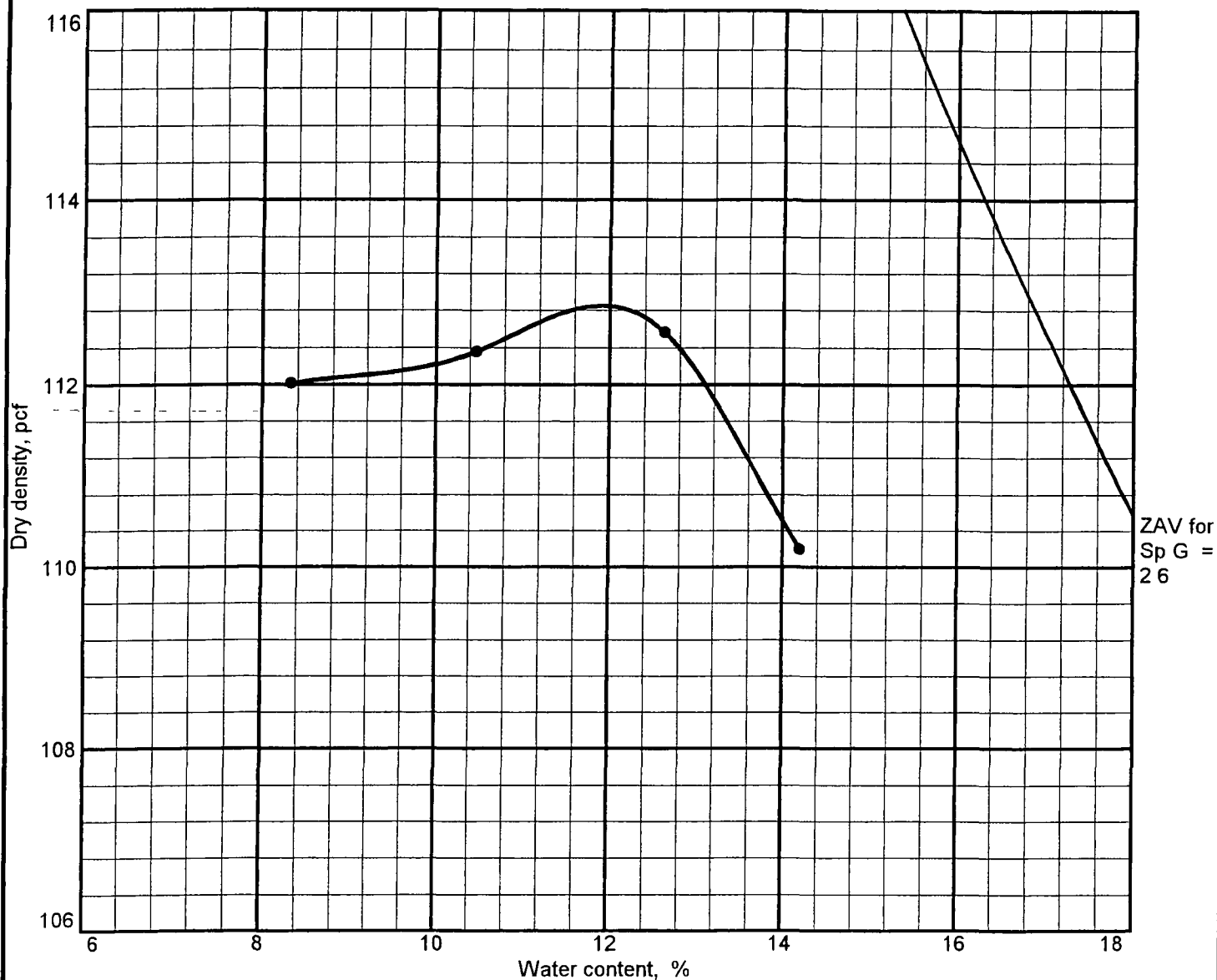
Client England Thims & Miller
Project Trailridge Landfill Closure Construction

Project No 40562-1-4214

MB Woodward 12-6-01 Plate

Michael B. Woodward, P.E.

COMPACTION TEST REPORT



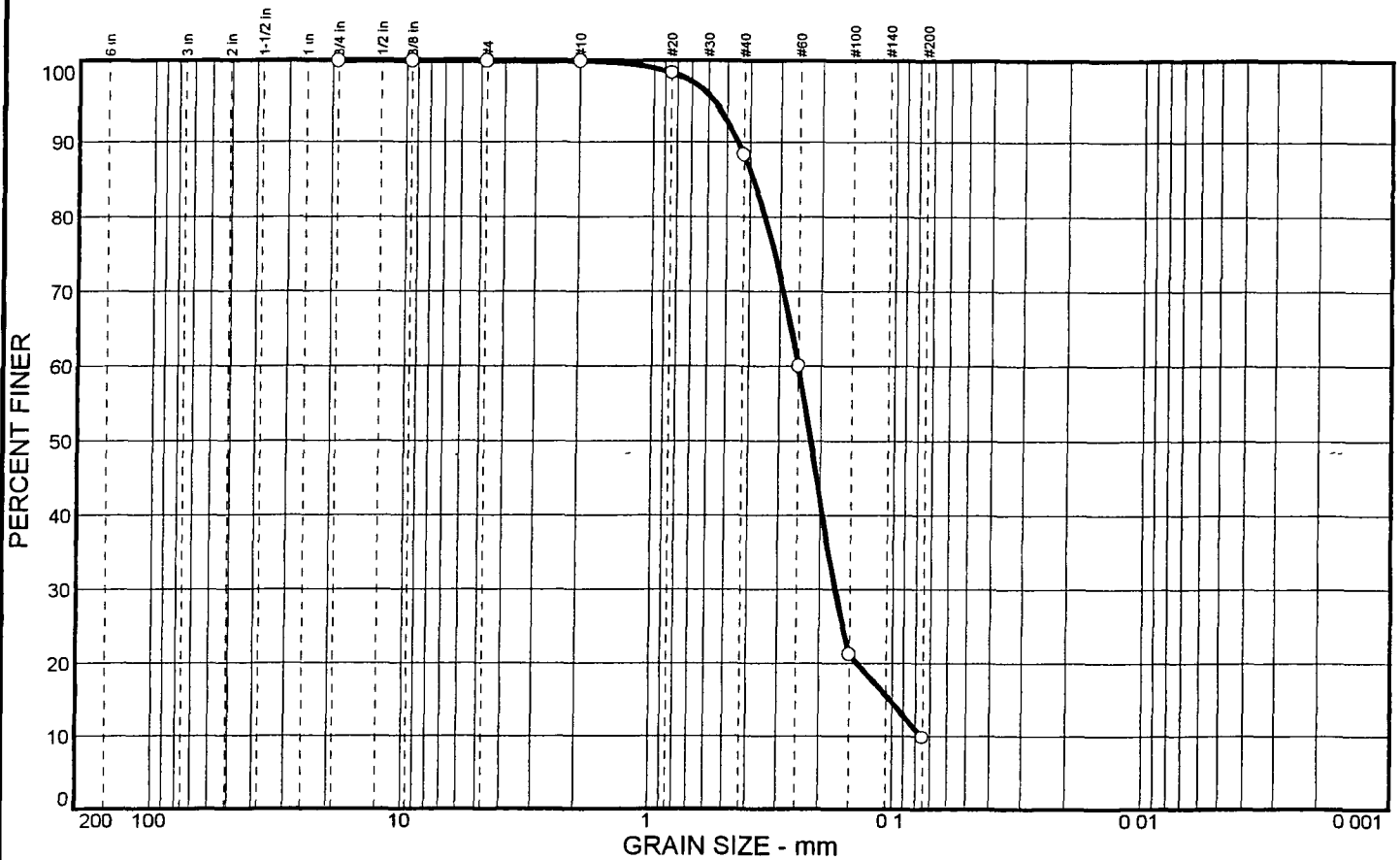
Test specification ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp G.	LL	PI	% > No.4	% < No 200
	USCS	AASHTO						
	SP-SC	A-3					00	98

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 112.9 pcf Optimum moisture = 11.9 %	Light Tan Slightly Clayey Medium to Fine SAND
Project No. Client: England Thums & Miller Project. Trailridge Landfill Closure Construction Project No 40562-1-4214 ● Source: Fill Material Sample No.: Proctor No 2	Remarks: <div style="text-align: right;"> <i>Kirk A. McIntosh</i> 12-17-01 Plate </div>
<div style="text-align: center;">COMPACTION TEST REPORT</div> Law Engineering and Environmental Services, Inc.	

Kirk A. McIntosh, P.E.

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		90.2	9.8		SP-SC	A-3		

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
75	100.0			#4	100.0			○ Light Tan Slightly Clayey Medium to Fine SAND
375	100.0			#10	100.0			
				#20	98.5			
				#40	88.2			
				#60	60.0			
				#100	21.2			
				#200	9.8			REMARKS ○
GRAIN SIZE								
D ₆₀	0.250							
D ₃₀	0.172							
D ₁₀	0.0759							
COEFFICIENTS								
C _c	1.56							
C _u	3.29							

○ Source Fill Material

Sample No Proctor No 2

Kirk G. McDaniel
12-17-01

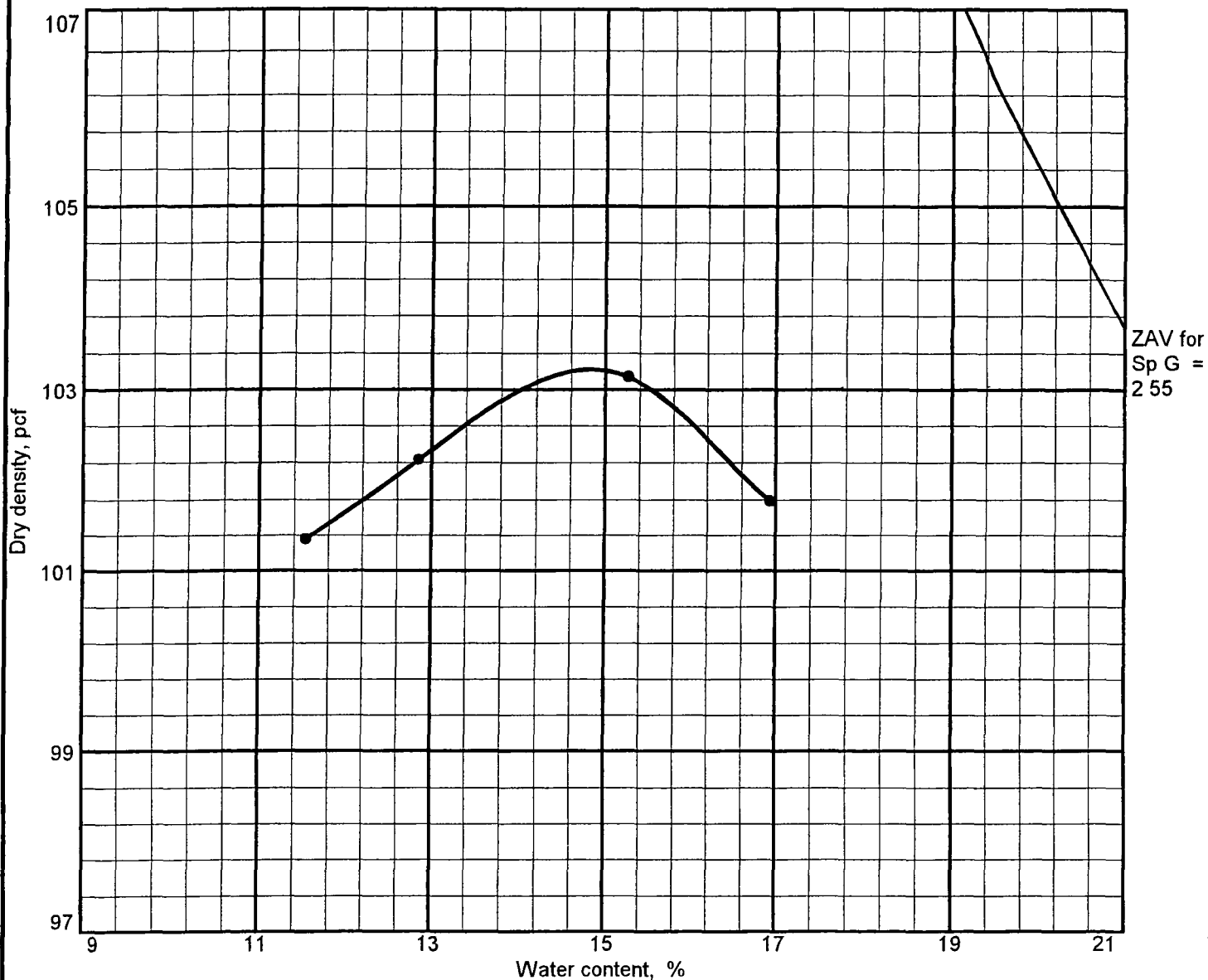
**Law Engineering and
Environmental Services, Inc.**

Client England Thums & Miller
Project Trailridge Landfill Closure Construction
Project No 40562-1-4214
Project No

Plate

12-17-01

COMPACTION TEST REPORT



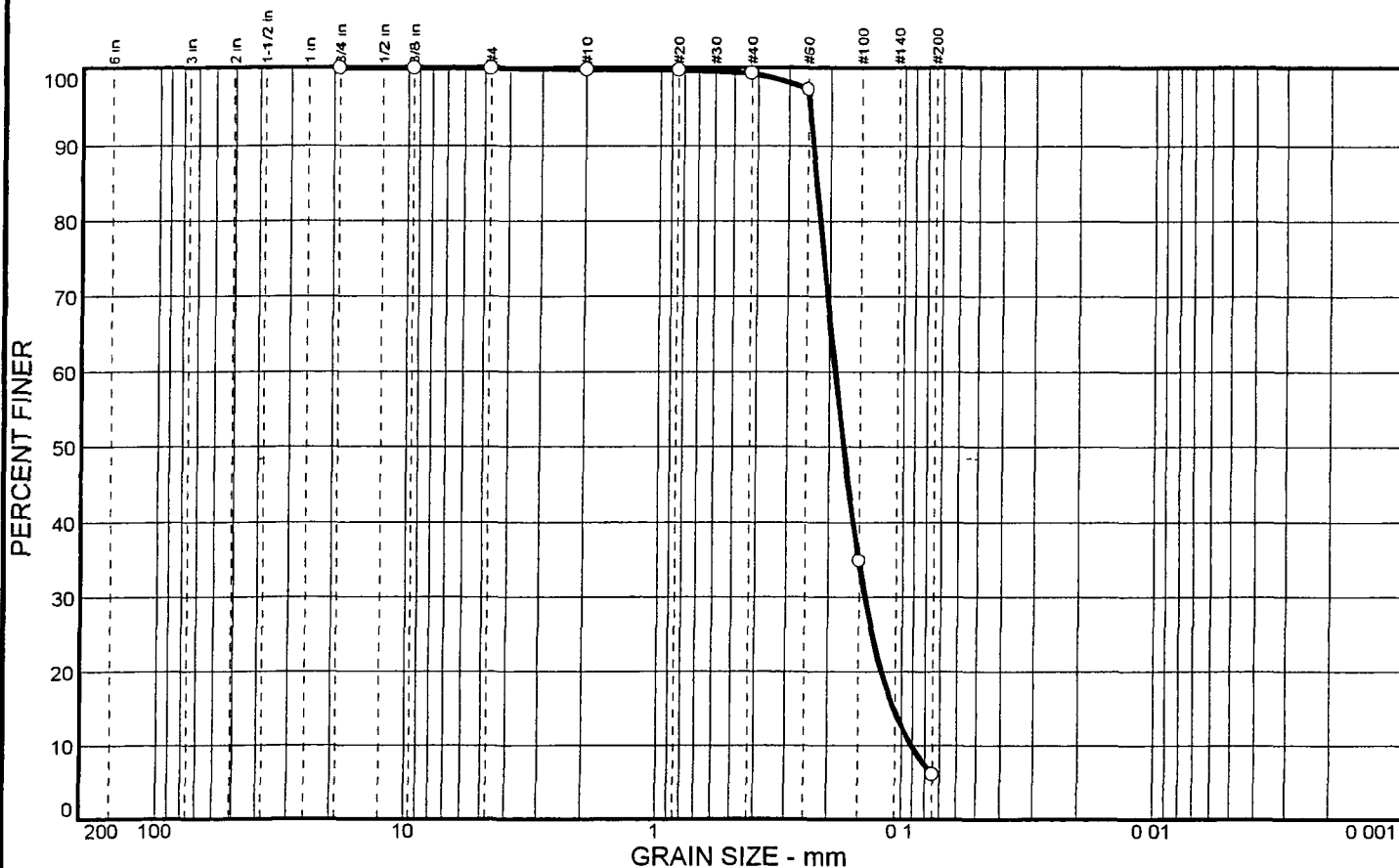
Test specification ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No 200
	USCS	AASHTO						
	SP-SM	A-3					00	61

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 103.2 pcf		Dark Brown Slightly Silty Fine SAND
Optimum moisture = 14.8 %		
Project No. Client. England Thims & Miller Project: Trailridge Landfill Closure Construction Project No 40562-1-4214 Source Fill Material Sample No.: Proctor No 3		Remarks. <div style="text-align: right;"> <i>Kirk A. McIntosh</i> 12-17-01 Plate </div>
COMPACTION TEST REPORT Law Engineering and Environmental Services, Inc.		

Kirk A. McIntosh, P.E.

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		93.9	6.1		SP-SM	A-3		

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ Dark Brown Slightly Silty Fine SAND
○	○			○	○			
75	100.0			#4	100.0			
375	100.0			#10	99.8			
				#20	99.7			
				#40	99.3			
				#60	97.2			
				#100	34.9			
				#200	6.1			
								REMARKS ○

○ Source Fill Material Sample No Proctor No 3

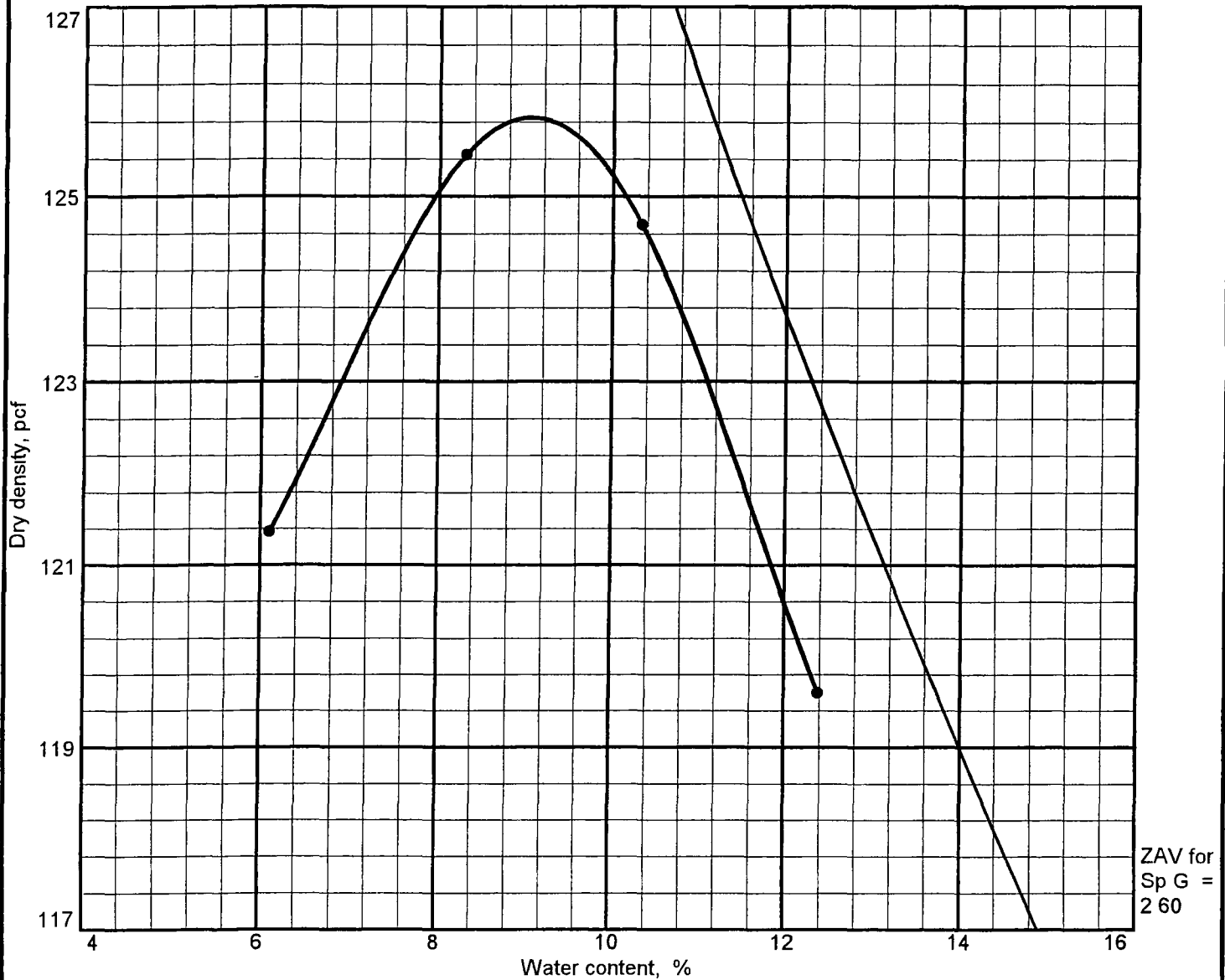
Law Engineering and Environmental Services, Inc.

Client England Thums & Miller
 Project Trailridge Landfill Closure Construction
 Project No 40562-1-4214
 Project No _____

Kirk A. McIntosh
 12-17-01
 Plate _____

Kirk A. McIntosh, P.E.

COMPACTION TEST REPORT



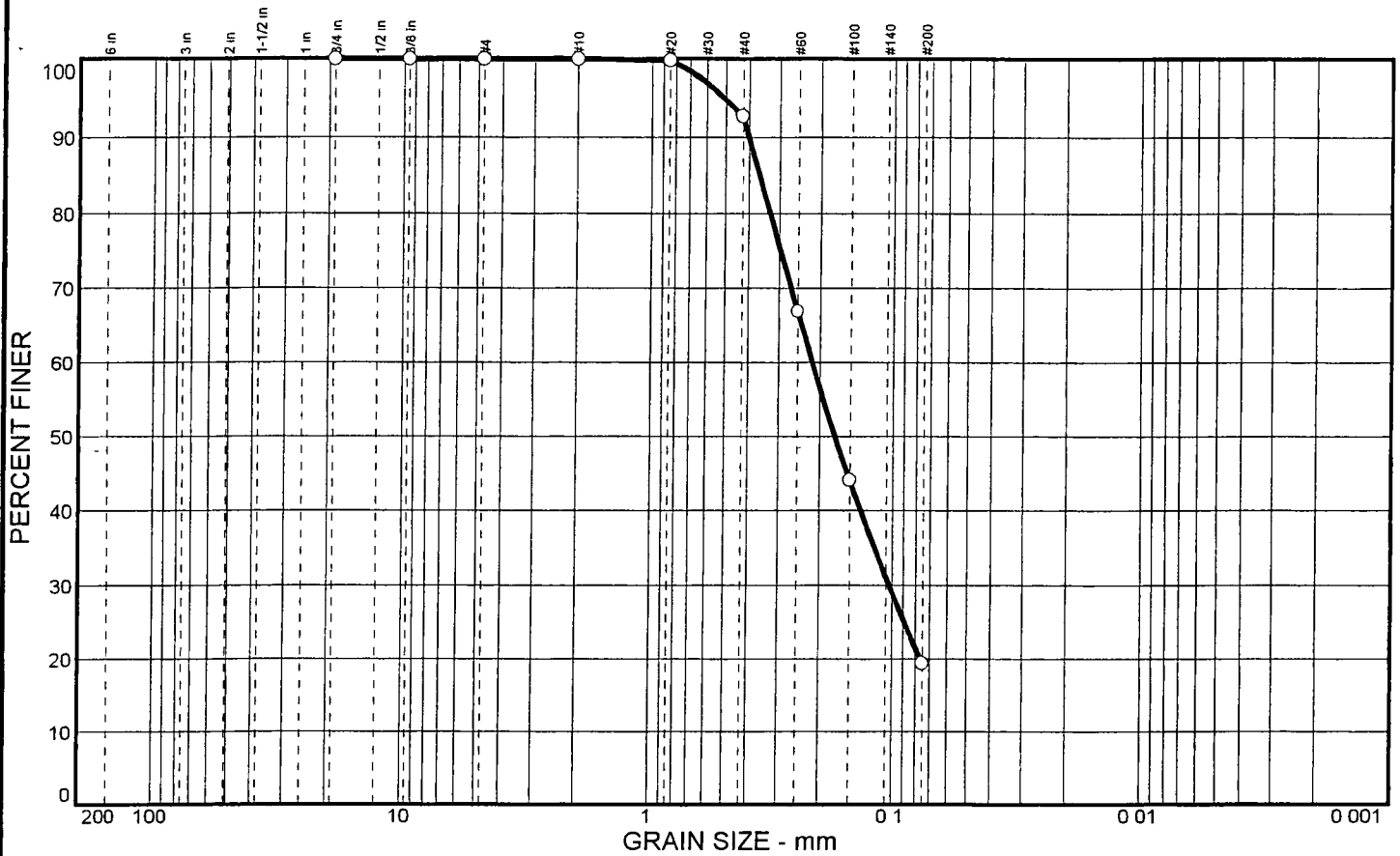
Test specification ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No 200
	USCS	AASHTO						
	SC	A-2-6(0)					00	19.3

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 125.8 pcf		Gray-Brown Clayey SAND
Optimum moisture = 9.1 %		
Project No. Client. England Thims & Miller Project: Trailridge Landfill Closure Construction Project No. 40562-1-4214 ● Source: Fill Material		Remarks:

Michael B. Woodward, P.E.

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		80.7	19.3		SC	A-2-6(0)		

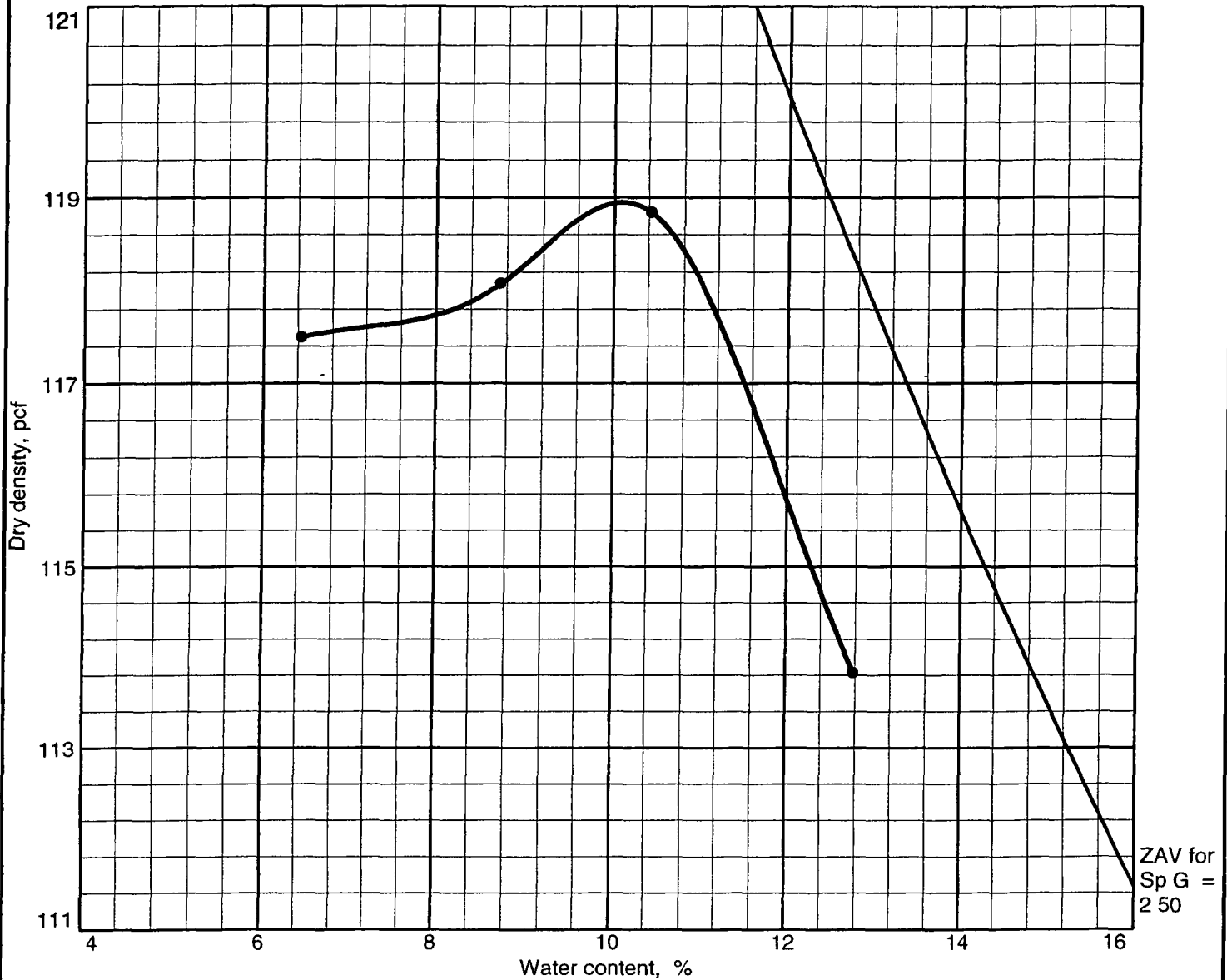
SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
75	100.0			#4	100.0			Gray-Brown Clayey SAND
375	100.0			#10	100.0			
				#20	99.8			
				#40	92.7			
				#60	66.9			
				#100	44.1			
				#200	19.3			REMARKS

○ Source Fill Material Sample No. Proctor No. 4

Law Engineering and Environmental Services, Inc.	Client	England Thums & Miller
	Project	Trailridge Landfill Closure Construction
	Project No	40562-1-4214
	Project No	MAK Woodward 1-7-02 Plate


Michael B. Woodward, P.E.

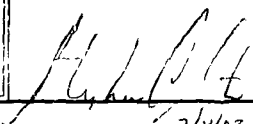
COMPACTION TEST REPORT



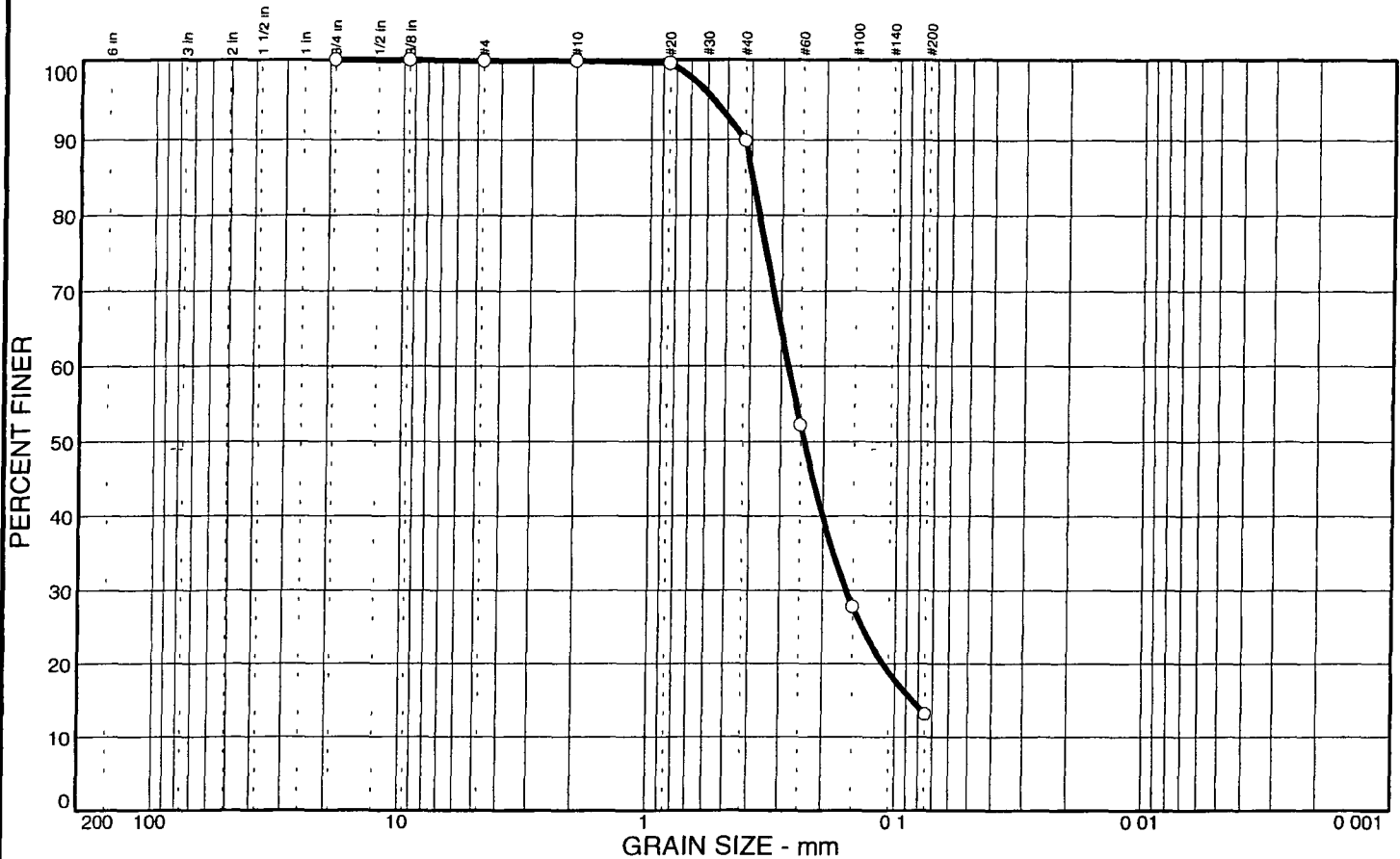
Test specification ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SC	A-2-6(0)					0.1	13.1

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 119.0 pcf Optimum moisture = 10.1 %		Brown Clayey Fine SAND
Project No. Client: England Thums & Miller Project: Trailridge Landfill Closure Construction Project No. 40562-1-4214 Source: Fill Material		Remarks: Initial Cover Eastside  Plate
Sample No.: Proctor No. 5		
COMPACTION TEST REPORT		
Law Engineering and Environmental Services, Inc.		


Plate
2/8/12

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.1	86.8	13.1		SC	A-2-6(0)		

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
75	100.0			#4	99.9			○ Brown Clayey Fine SAND
375	100.0			#10	99.9			
				#20	99.6			
				#40	89.9			
				#60	52.2			
				#100	27.8			
				#200	13.1			
	GRAIN SIZE							REMARKS
D ₆₀	0.282							
D ₃₀	0.160							
D ₁₀								
	COEFFICIENTS							
C _c								
C _u								

○ Source Fill Material

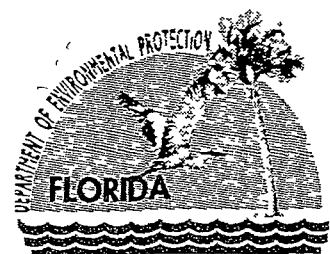
Sample No Proctor No 5

**Law Engineering and
Environmental Services, Inc.**

Client England Thums & Miller
Project Trailridge Landfill Closure Construction
Project No 40562-1-4214
Project No

Plate

Handwritten signature
5/6/62



Jeb Bush
Governor

Department of Environmental Protection

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

David B. Struhs
Secretary

August 18, 2003

Mr. Greg Mathes
General Manager
Trail Ridge Landfill Inc
5110 U.S. Highway 301
Jacksonville, Florida 32234

Dear Mr. Mathes:

Trail Ridge Landfill, Inc
Permit number 0013493-002-SC
Partial closure units 21-23 and units 1-4 (complete)
Duval County - Solid Waste

The Department acknowledges receipt of the following documents submitted pursuant to Florida Administrative Code Chapter 62-701 and Specific Condition Number 47 of the subject Permit:

1. Trail Ridge Landfill Incremental Closure Quality Assurance and Quality Control Documentation for Units 1-4 (complete) and 21-23, including the Certification of Construction Completion of a Solid Waste Management Facility, signed and sealed by Juanitta Bader Clem, P.E., prepared by England, Thims and Miller, Inc., and Drawing sheets, CI-3A and CI-6, signed and sealed by Joseph Leshe Reynolds, professional surveyor, received July 26, 2002.

The Department has reviewed the aforementioned Document, which addresses the closure of units 1-4, and of units 21-23, reflected on Drawing sheet number 14, provided October 28, 1996, as "Closure Phase 2." Based on the department's review, the department has determined the closure construction of partial closure units 21-23 and units 1-4 (complete) to be acceptable.

If you have any comments concerning this matter, please contact Julia Boesch at the letterhead address or telephone number (904) 807-3356.

Sincerely,

Mary C. Nogas, P.E.
Solid Waste Supervisor

MCN jb ml

cc: Juanitta Bader Clem, P.E., England, Thims and Miller, Inc

Boesch, Julia

From: Juanitta Clem [ClemJ@etm-inc.com]
Sent: Tuesday, December 27, 2005 9:22 AM
To: Boesch, Julia
Cc: gmathes@wm.com
Subject: Trail Ridge Landfill

Dear Julia -

Please see the attached first and last pages of the December 13, 2002 RAI response letter. The last page discusses the closure issues and references Attachments G and H. I have included the certification in those attachments for your reference. Please let me know if you need anything more.

Juanitta Bader Clem, P.E.
England, Thims & Miller, Inc.
(904) 265-3181 (direct)
(904) 646-9485 (fax)

<<AR-M455N_20040830_062755.pdf>>

(25 acres)
Accepted closures
pre 2004. Includes
certification forms
w/ some approval
letters (apparently
pre 1999 we did not do
any approval letters.
However, during permit renewal
at it was Mary Nogas' recollection
that the Dept had approved
them - (this was 25 acres)
pre 2005.



England-Thimby & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • GIS • LANDSCAPE ARCHITECTS

December 13, 2002

Ms. Mary C Nogas, P E.
Waste Management Section
Department of Environmental Protection
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256

Principals

James E England, P.E., CEO
Douglas C Miller, P.E., President
N Hugh Mathews, P.E., Exec. V P
Joseph A Tarver, Exec V P
Juanita Bader Clem, P.E., V P
Scott A Wild, P.E., PSM, V P
Samuel R Crissinger, CPA, V P
Robert A Mizell, Jr., P.E., V P
Bryan R Stewart, V P

Reference. Trail Ridge Landfill - Second Permit Renewal
FDEP Permit No 0013493-001 and 0013493-002
FDEP File Numbers 13493-010 and 13493-011
ET&M No E02-25-3

Dear Ms. Nogas:

We have received your letter dated October 25, 2002 regarding the referenced project. On behalf of Trail Ridge Landfill, Inc., please find the following response to your request for additional information.

Attachment 1, Review Memorandum, dated October 25, 2002, prepared by Julia Boesch.

1 *Since you are proposing to recirculate leachate, please publish notice*

The applicant hereby withdraws the request to recirculate leachate.

2 *Greg Mathis signed the application as a General Manager; however, the Florida Department of State, Division of Corporations web page does not list him as an officer/director. Please provide documentation demonstrating that he is an officer or director of Trail Ridge Landfill, Inc. or provide a letter from an officer/director giving him the required authorization.*

Charles Campagna, Vice President of Waste Management Holdings, Inc. signed the application. Trail Ridge Landfill, Inc. is a wholly owned subsidiary of Waste Management Holdings, Inc. We recommend that the Department review the 09/16/2002 Corporate Annual Report which is a "Document Image" on the Florida Department of State, Division of Corporations web page for Trail Ridge Landfill, Inc. On the second page of the report, Mr. Charles J. Campagna is listed as Vice President, as stated on the application.

3 *If you wish to operate from 5 00 a m to 10 00 p m, as indicated in item B 15 of the application form, please address how you will illuminate the site during the non-daylight hours. Please note that at least 3 candle-feet of illumination are required.*

Please be advised that this application is a permit renewal application. The above condition is an existing permit condition; the facility is in compliance with the existing permit condition and has on-site light plants to for use during non-daylight hours.

Ms Mary C. Nogas, P E.
Department of Environmental Protection

December 13, 2002
Page 22

Reference Trail Ridge Landfill - Second Permit Renewal
ET&M No. E02-25-3

72 The following comments concern the cost estimates.

- a Concerning your cost estimates, you indicate in your application form that the disposal area is 148 acres, which equates to 716, 320 square yards, however, your estimates are for a smaller area. Please address and revise your estimates as appropriate.

Please note that on Page 1 of the Financial Assurance Cost Estimate Form, 119 acres is the area used in the closure estimates. The reason 119 acres rather than 144 acres is used is because 25 acres have received final cover in accordance with the closure-as-you-go requirements. There have been four incremental closure projects at the site and each closure project has been documented and certified to the Department. Please see Attachment G which contains correspondence and the Closure QA/QC Plan associated with each closure project. Also, please note that Appendix M of the First Permit Renewal contained the QA/QC Plan for Side Slope Closure and Appendices J and K of the Second Permit Renewal (the current application) contains the QA/QC Plans for Side Slope Closure and Top Area Closure, respectively. Also, please see Attachment H which contains a letter from the Department accepting the Closure Construction Certification for Side Slope Units 1-4 (Partial), 7-8 (Partial), 12-17 (Partial) and 18-20.

- b Please check the amount of leachate expected to be collected during the long-term care period. Since you are proposing to recirculate leachate, the disposal area is expected to be wetter than normal and more leachate, therefore, may be collected after closure. Please revise your costs accordingly.

The leachate recirculation has been withdrawn.


- c Please confirm that all cost estimates are for third party costs that the department may incur if tasked with the responsibility of maintaining and monitoring the facility.

The cost estimates are third party cost estimates.

I sincerely hope this response will provide the Department all the necessary information. I would respectfully request that any questions regarding this application be directed to me.

Sincerely,

ENGLAND, THIMS & MILLER, INC.


Juanita Badier Clem, P E
Vice President

Attachments

cc: Greg Mathes
Achaya Kelpenda
Chris Pearson

 England-Thims & Miller, Inc.

ATTACHMENT G
Closure Documentation

First Closure

Side Slope Units 5, 6, 7 (Partial) and 8 (Partial)

Certified February 3, 1994



England-Thims & Miller, Inc.

Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32246
904-642-8990

PRINCIPALS

James E. England, P.E., President
Robert E. Thims, V.Pres., Sec.
Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

February 3, 1994

Ms. Mary C. Nogas, P.E.
Waste Management Section
Department of Environmental Regulation
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256

Mr. Jai P. Prasad, P.E.
Stormwater Section
Department of Environmental Regulation
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256

Reference: Trail Ridge Landfill -Side Slope Closure
Side Slope Units 5, 6, 7 (Partial) and 8 (Partial)
FDER Permit No. SC16-184444
ET&M No. E93-143-3 (Certification File)

Dear Ms. Nogas and Mr. Prasad:

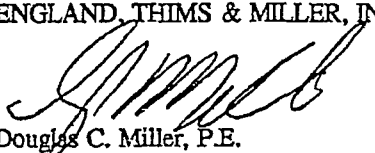
Please find herewith the Certification of Construction Completion for the Trail Ridge Landfill - Side Slope Closure. The construction Quality Assurance/Quality Control documentation and As-Built drawing are attached.

Subject to your site inspection, Trail Ridge Landfill, Inc. respectfully requests your written verification that this closure is accepted by the Department.

This is the certification for the Trail Ridge Landfill closure construction of Side Slope Units 5, 6, 7 (partial) and 8 (partial) which commenced on September 7, 1993. Should you have any questions concerning this certification, please do not hesitate to contact me or Juanitta Clem.

Sincerely,

ENGLAND, THIMS & MILLER, INC.


Douglas C. Miller, P.E.
Vice President

Attachments: Certification of Construction Completion
As-Built Drawing
Quality Assurance and Quality Control Documentation

cc: Greg Mathes w/attachments
Scott McCallister w/attachments
Chris Pierson w/attachments

DEP - 4 copies
City - 2 copies
Law Eng. - 1 copy

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFICATION OF CONSTRUCTION COMPLETION
OF A SOLID WASTE MANAGEMENT FACILITY


DER Construction Permit No.: SC16-184444 County: Duval
Name of Project: Trail Ridge Landfill - Side Slope Closure of Units 5, 6, 7 & 8
Name of Owner: City of Jacksonville; Trail Ridge Landfill, Inc. - Operator/Permittee
Name of Engineer: England, Thims & Miller, Inc.
Type of Project: Class I Landfill - Incremental Closure
Closure of Units 5, 6, 7 (Partial) and 8 (Partial)
Cost: Estimated \$ 870,950 Actual \$ 738,700+/-
Site Design: Quantity: 2,600 (Avg) Ton/day Site Acreage: 5.0+/- Acres
Population: 659,000+/- (1990) Dumping Fees: \$ 55 /Ton
Deviations from Plans and Application Approved by DER: Deviations are shown
on the As-Built Drawing and/or outlined in the attachment. The As-Built survey
was prepared by Sunshine State Surveyors, Inc. and reviewed by England, Thims
and Miller, Inc.

Water Monitoring Data Submitted to DER, Date: Quarterly
Address and Telephone No. of Site: 5110 U.S. Highway 301, Baldwin, FL 32234
Phone: (904) 289-9100

Name(s) of Site Supervisor: Greg Mathes
Date Site Inspection is requested: As soon as possible

This is to certify that, with the exception of deviation noted above, the
construction of the project has been completed in accordance with the plans
authorized by Construction Permit No.: SC16-184444 and Dated: 12-24-91
Modifications

England, Thims & Miller relied upon the information and certifications provided
by Law Engineering and Sunshine State Surveyors, Inc. in this certification.

Date: 2-4-94 
Signature of Professional Engineer

TRAIL RIDGE LANDFILL
SIDE SLOPE CLOSURE - UNITS 5, 6, 7 AND 8
DEVIATIONS FROM PLANS AND APPLICATION

1. Downcomer Pipe D-21 was constructed with stubouts on the uphill (southern) side only. Since the terraces were constructed with a minimum 1% slope, stubouts on the downhill (western) side were deemed unnecessary.
2. Side Slope Units 7 and 8 could not be completed because the solid waste has not been placed to complete the units. (Note: Completion of Units 7 and 8 required waste disposal in Cell C which was only recently (Nov. 5, 1993) accepted by the Department). These units were completed to Sta. 96+25 as shown on the As-Built Drawing.
3. The invert on Downcomer Pipe D-21 in Structure S-21 was raised to Elevation 117.8 +/- . It should be noted that the crown of the pipe remains below the throat of the inlet.
4. Terrace 1 at Downcomer D-19 has a depth of 2.11 feet rather than the design depth of 2.5 feet. However, based upon a 25-year storm event and the drainage area of 0.62 acres, the terrace will have over 1.0 foot of freeboard and therefore, meets the design intent.
5. For safety reasons, the gas well was install with a 24-inch borehole.

Second Closure
Side Slope Units 9, 10 and 11
Certified April 17, 1995



England-Thims & Miller, Inc.

Consulting & Design Engineers

3131 St. Johns Bluff Road S., Jacksonville, FL 32246

Tel: (904) 642-8990

Fax: (904) 646-9485

Principals

James E. England, P.E., Pres

Robert E. Thims, Exec V.P.

Douglas C. Miller, P.E., Exec V.P.

N. Hugh Mathews, P.E., Exec V.P.

April 17, 1995

Ms. Mary C. Nogas, P.E.
Waste Management Section
Department of Environmental Protection
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256

Reference: Trail Ridge Landfill -Side Slope Closure
Side Slope Units 9,10 and 11
FDER Permit No. SC16-184444
ET&M No. E94-17-3 (Certification File)

Dear Ms. Nogas

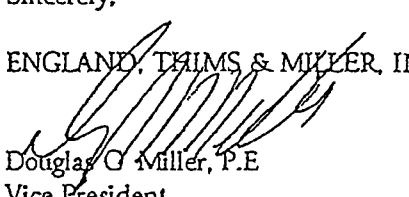
Please find herewith the Certification of Construction Completion for the Trail Ridge Landfill - Side Slope Closure. The Construction Quality Assurance/Quality Control documentation and As-Built drawings are attached.

We request a site inspection on May 1, 1995 at 9.00 A.M. Subject to your site inspection, Trail Ridge Landfill, Inc. respectfully requests your written verification that this closure is accepted by the Department

This is the certification for the Trail Ridge Landfill Closure construction of Side Slope Units 9, 10 and 11 which commenced on May 23, 1994. Should you have any questions concerning this certification, please do not hesitate to contact me or Juanitta Clem

Sincerely,

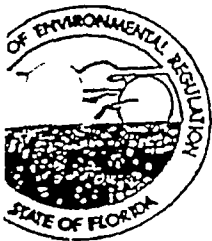
ENGLAND, THIMS & MILLER, INC


Douglas C. Miller, P.E.
Vice President

DCM:d

Attachments: Certification of Construction Completion
As-Built Drawing
Quality Assurance and Quality Control Documentation

cc Greg Mathes w/attachments
Scott McCallister w/attachments
Chris Pierson w/attachments
DEP Stormwater Section w/attachments



Florida Department of Environmental Regulation

Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

DER Form 6-17-701-90071
Form Title <u>Construction Completion of Solid Waste Management Facility</u>
Effective Date <u>January 8, 1995</u>
DER Application No. _____
Filed in by DER _____

Certification of Construction Completion of a Solid Waste Management Facility

DER Construction Permit No: SC16-184444 County: Duval
Name of Project: Trail Ridge Landfill - Side Slope Closure of Units 9, 10 and 11
Name of Owner: City of Jacksonville; Trail Ridge Landfill, Inc. - Operator/Permittee
Name of Engineer: England, Thims & Miller, Inc.
Type of Project: Class I Landfill - Incremental Closure
Closure of Units 9, 10 and 11
Estimate \$ N/A Actual \$ 606,041 +/-
Design: Quantity: 2,600 (Avg) ton/day Site Acreage: 2.3 +/- Acres
Deviations from Plans and Application Approved by DER: Deviations are shown on the As-Built Drawing and/or outlined in the attachment. The As-Built survey was prepared by Sunshine State Surveyors, Inc. and reviewed by England, Thims & Miller, Inc.
Address and Telephone No. of Site: 5110 U.S. Highway 301, Baldwin, FL 32234
Phone (904) 289-9100
Name(s) of Site Supervisor: Greg Mathes
Date Site inspection is requested: May 1, 1995 @ 9:00 AM

This is to certify that, with the exception of any deviation noted above, the construction of the project has been completed in substantial accordance with the plans authorized by Construction Permit No.: SC16-184444 and Dated: 12-24-91
Modifications

England, Thims & Miller relied upon the information and certifications provided by Law Engineering and Sunshine State surveyors, Inc. in this certification.

Date: 4/19/95

[Signature]
Signature of Professional Engineer

**TRAIL RIDGE LANDFILL
SIDE SLOPE CLOSURE - UNITS 9, 10 AND 11
SUBSTANTIAL DEVIATIONS FROM PLANS AND APPLICATION**

1. For safety reasons, the gas well was installed with a 24-inch borehole.
2. The screened interval on the gas well extends up to the top of daily cover (6" above the top of waste). Nevertheless, gas well will function properly as a passive vent.

Third Closure

Side Slope Units 1-4 (Partial), 7-8 (Partial), 12-17 (Partial) and 18-20

Certified December 5, 1997



England-Thims & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

Principals

James E. England, PE, Pres
Robert E. Thims, Exec VP
Douglas C. Miller, PE, Exec VP
N. Hugh Mathews, PE, Exec VP

December 5, 1997

Ms. Mary C. Nogas, P.E.
Waste Management Section
Department of Environmental Protection
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256

Mr. David P. Apple, P.E.
Stormwater Section
Department of Environmental Protection
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256

Reference: Trail Ridge Landfill - Incremental Closure
Side Slope Units 1-4 (Partial), 7-8 (Partial), 12-17 (Partial) and 18-20
FDEP Permit No. SC16-184444
ET&M No. E96-92-4

Dear Ms. Nogas and Mr. Apple:

Please find herewith the Certification of Construction Completion for the Trail Ridge Landfill, Incremental Closure, as well as certification of the stormwater pond modification. The construction Quality Assurance/Quality Control documentation and As-Built drawings are attached.

Subject to your site inspection, Trail Ridge Landfill, Inc. respectfully requests your written verification that this closure and stormwater modification are accepted by the Department.

This is the certification for the Trail Ridge Landfill closure construction of Side Slope Units 1-4 (Partial), 7-8 (Partial), 12-17 (Partial) and 18-20 which commenced on April 21, 1997. Should you have any questions regarding these certifications, please do not hesitate to give me a call.

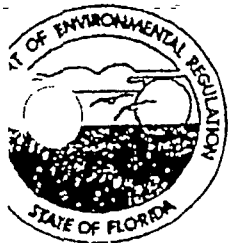
Sincerely,

ENGLAND, THIMS & MILLER, INC.

Juanita Bader Clem, P.E.
Vice President

Attachments: Certification of Construction Completion of a Solid Waste Management Facility
MSSW/Stormwater Certification
Quality Assurance and Quality Control Documentation
As-Built Drawings
Pump Test and Construction Drawing for Stormwater System Modification

cc: Greg Mathes w/attachments
Scott McCallister w/attachments
Chris Pearson w/attachments



Florida Department of Environmental Regulation

Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

DER Form <u>17-701-900121</u>
Form Title <u>Certification of Construction Completion of a Solid Waste Management Facility</u>
Effective Date <u>January 8, 1991</u>
DER Application No. _____
(Filed in by DER)

Certification of Construction Completion of a Solid Waste Management Facility

DER Construction Permit No: SC16-184444 County: Duval

Name of Project: Trail Ridge Landfill - Incremental Closure

Name of Owner: City of Jacksonville

Name of Engineer: England, Thims & Miller, Inc.

Type of Project: Class I Landfill - Incremental Closure

Side Slope Units 1-4 (Partial), 7-8 (Partial), 12-17 (Partial) and 18-20

Cost: Estimate \$ 1,800,000 Actual \$ 1,569,240

Design: Quantity: 659,000 +/- (1990) ton/day Site Acreage: 12 +/- Acres

Deviations from Plans and Application Approved by DER: _____

Deviations are shown on the As-Built Drawing and/or outlined in the attachment. The

As-Built Survey was prepared by Sunshine State Surveyors and reviewed by

England, Thims & Miller, Inc.

Address and Telephone No. of Site: 5110 U.S. Highway 301, Baldwin, FL 32234

Phone: (904) 289-9100

Name(s) of Site Supervisor: Greg Mathes

Date Site inspection is requested: As soon as possible

This is to certify that, with the exception of any deviation noted above, the construction of the project has been completed in substantial accordance with the plans authorized by Construction Permit No.: SC16-184444 Dated: 12-24-91

England, Thims & Miller, Inc. relied upon the information and certifications provided by Law Engineering and Sunshine State Surveyors, Inc. in this certification.

Date: Dec. 3, 1991

Chonetta Bader Clem
Signature of Professional Engineer

DEVIATIONS FROM PLANS AND APPLICATION

- MAIL/96-92.DEV



Department of Environmental Protection

Lawton Chiles
Governor

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

Virginia B. Wetherell
Secretary

January 28, 1998

Mr. Greg Mathes, Division President
Trail Ridge Landfill, Inc.
5110 U.S. Highway 301
Baldwin, Florida 32234

Dear Mr. Mathes:

Trail Ridge Landfill
Closure Construction Certification for Side Slope Units 1-4 (Partial), 7-8 (Partial), 12-17 (Partial) and 18-20
DEP Permit Number 0013493-002-SC
Duval County - Solid Waste

The Department acknowledges receipt of the following documents submitted to comply with the requirements of the subject permit and the requirements of Florida Administrative Code Chapter 62-701.

1. "Trail Ridge Landfill Incremental Closure Quality Assurance and Quality Control Documentation for Units 1-4 (Partial), 7-8 (Partial), 12-17 (Partial) and 18-20," prepared by England-Thums and Miller, Inc., and LAW Engineering and Environmental Services, Inc., dated December 5, 1997;
2. "Certification of Construction Completion of a Solid Waste Management Facility," signed and sealed on December 3, 1997 by Juanitta Bader Clem, P. E., received December 5, 1997; and
3. "Specific As-Built Survey of Trail Ridge Landfill Incremental Closure," prepared by Sunshine State Surveyors, Inc., signed and sealed on October 3, 1997 by Joseph Leslie Reynolds III, Registered Surveyor.

In addition, Department staff conducted a closure construction completion inspection of the subject side slope units on January 26, 1998. Based on the review of the above documents and the result of the inspection, closure construction of the subject side slope units, including construction of active gas extraction well numbers W-5, W-8, W-9, W-10, W-17, W-18, W-25 and W-35, has been found acceptable. The Permittee shall maintain the integrity of the side slope units, extraction wells and all associated structures as part of the facility's normal operation. Please contact me at the above letterhead address or at telephone number (904) 448-4320, if you have any questions regarding this matter.

Sincerely,

Mary C. Nogas, P. E.
Solid Waste Section Supervisor

MCN fd

cc: Juanitta Bader Clem, P. E. ✓
Fred Wick, DEP, Tallahassee

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper

Forth Closure
Side Slope Units 1-4 (Complete) and 21-23
Certified July 26, 2002



England-Thims & Miller, Inc.

ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS

July 26, 2002

Ms. Mary C. Nogas, P. E.
Solid Waste Section
Department of Environmental Protection
7825 Baymeadows Way, Suite B-200
Jacksonville, Florida 32256

Principals

James E. England, P.E., CEO
Douglas C. Miller, P.E., President
N. Hugh Matthews, P.E., Exec. VP
Joseph A. Turner, Exec. VP
Juanita Bader Clem, P.E., VP
Scott A. Wild, P.E., PSN, VP
Samuel R. Chisenger, CPA, VP
Robert A. Mizell, Jr., P.E., VP
Bryan R. Stewart, VP

Reference: Trail Ridge Landfill – Incremental Closure
Side Slope Units 1-4 (Complete) and 21-23
FDEP Permit No. 0013493-002-SC
ET&M Project No. E00-117-04

Dear Ms. Nogas:

Please find herewith the Certification of Construction Completion for the Trail Ridge Landfill, Incremental Closure of Side Slope Units 1-4 (Complete) and 21-23. The Construction Quality Assurance/Quality Control documentation and As-Built Drawings are attached.

Subject to your site inspection, Trail Ridge Landfill, Inc. respectfully requests your written verification that the Department accepts this incremental closure.

This is the certification for the Trail Ridge Landfill closure construction of Side Slope Units 1-4 (complete) and 21-23, which commenced on November 12, 2001. Should you have any questions, please feel free to give me a call.

Sincerely,

ENGLAND, THIMS & MILLER, INC.

Juanita Bader Clem, P. E.
Vice President

Attachments: Certification of Construction Completion of a Solid Waste Management Facility
Quality Assurance and Quality Control Documentation
As-Built Drawings

cc: Greg Mathes, with attachments
Chris Pearson, with attachments
Jim Horton, with attachments



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

Effective Date 11-17-1997
DEP Application No. _____
(Filed by DEP)

Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction Permit No: 0013493-002-SC County: Duval

Name of Project: Trail Ridge Landfill - Incremental Closure

Name of Owner: City of Jacksonville

Name of Engineer: England, Thims & Miller, Inc.

Type of Project: Class I Landfill - Incremental Closure

Side Slope Units 1-4 (Complete) and 21-23

Cost: Estimate \$ _____ Actual \$ 1,140,809

Site Design: Quantity: 3,500 ton/day Site Acreage: 4± Acres

Deviations from Plans and Application Approved by DEP: _____

Deviations are shown on the As-Built Drawing and/or outlined in the attachment.

The As-Built Survey was prepared by Robert M. Angas Associates, Inc. and

reviewed by England, Thims & Miller, Inc.

Address and Telephone No. of Site: 5110 U.S. Highway 301, Baldwin, FL 32234

Phone: (904)289-9100

Name(s) of Site Supervisor: Greg Mathes

Date Site inspection is requested: As soon as possible

This is to certify that, with the exception of any deviation noted above, the construction of the project has been completed in substantial accordance with the plans authorized by Construction

Permit No.: 0013493-002-SC Dated: 11-25-97

England, Thims & Miller, Inc. relied upon the information and certifications provided by Law Engineering and Robert M. Angas Associates, Inc.

Date: 7/26/02

Jonathan Bader
Signature of Professional Engineer

#43245

Page 1 of 1

Northwest District
160 Government Center
Pensacola, FL 32501-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. B200
Jacksonville, FL 32256-7590
904-448-4300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-694-7555

Southwest District
3804 Coconut Palm Dr
Tampa, FL 33619
813-744-6100

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33901-3581
941-332-6975

Southeast District
400 North Congress Ave.
West Palm Beach, FL 33401
561-681-6600

REGfiles: 10/1998

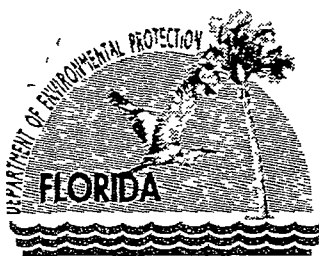
**TRAIL RIDGE LANDFILL
INCREMENTAL CLOSURE
UNITS 1-4 (COMPLETE) AND 21-23**

DEVIATIONS FROM PLANS AND SPECIFICATIONS

1. Some final grades were adjusted to accommodate settlement during closure construction. Adjustments are noted on the As-Built Drawings.
2. An alternate aggregate material in lieu of the specified FDOT No. 3 coarse aggregate was used to backfill Gas Wells W-26 and W-27. As explained in the attached December 3, 2001 letter to the Department, the modification does not change the design intent of the aggregate.
3. The side slope closure areas have been sodded but the sod has not been established. Due to the field conditions at the sod farms and the field conditions at the site when the sod was placed, the sod appears stressed. If the existing sod is not established, then additional measures will be taken to establish a stand of grass (either by resodding or seeding).

ATTACHMENT H

Department Letter of Acceptance for Side Slope Closure



Department of Environmental Protection

Jeb Bush
Governor

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

David B. Struhs
Secretary

August 18, 2003

Mr. Greg Mathes
General Manager
Trail Ridge Landfill Inc
5110 U.S. Highway 301
Jacksonville, Florida 32234

Dear Mr. Mathes

Trail Ridge Landfill, Inc
Permit number 0013493-002-SC
Partial closure units 21-23 and units 1-4 (complete)
Duval County - Solid Waste

The Department acknowledges receipt of the following documents submitted pursuant to Florida Administrative Code Chapter 62-701 and Specific Condition Number 47 of the subject Permit

- 1 Trail Ridge Landfill Incremental Closure Quality Assurance and Quality Control Documentation for Units 1-4 (complete) and 21-23, including the Certification of Construction Completion of a Solid Waste Management Facility, signed and sealed by Juanitta Bader Clem, P.E., prepared by England, Thims and Miller, Inc., and Drawing sheets, CI-3A and CI-6, signed and sealed by Joseph Leslie Reynolds, professional surveyor, received July 26, 2002

The Department has reviewed the aforementioned Document, which addresses the closure of units 1-4, and of units 21-23, reflected on Drawing sheet number 14, provided October 28, 1996, as "Closure Phase 2." Based on the department's review, the department has determined the closure construction of partial closure units 21-23 and units 1-4 (complete) to be acceptable

If you have any comments concerning this matter, please contact Julia Boesch at the letterhead address or telephone number (904) 807-3356

Sincerely,

Mary C. Nogas, P.E.
Solid Waste Supervisor

MCN jb:ml

cc: Juanitta Bader Clem, P.E., England, Thims and Miller, Inc

MAPS

AND

CD'S

SCANNED

SEPERATELY