TRAIL RIDGE LANDFILL
SIDE SLOPE UNIT CLOSURE
QUALITY ASSURANCE AND
QUALITY CONTROL DOCUMENTATION
FOR
UNITS 5, 6, 7 AND 8

FOR

TRAIL RIDGE LANDFILL, INC.
5110 U. S. Highway 301
P.O. Box 548
Baldwin, Florida 32234

PREPARED BY:

ENGLAND, THIMS & MILLER, INC.
3131 St. Johns Bluff Road South
Jacksonville, Florida 32246

AND

LAW ENGINEERING
3901 Carmichael Avenue
Jacksonville, Florida 32207

JANUARY 1994
PROJECT NO: E93-143-3

5389 08

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

NORTHEAST DISTRICT
RECEIVED
FEB 09 1994
DEP - JACKSONVILLE

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

NORTHEAST DISTRICT
RECEIVED
FEB 03 1994
DEP-JACKSONVILLE

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 Modifications **Dated:** 12-24-91

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

STATE OF FLORIDA

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.

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

NORTHEAST DISTRICT
RECEIVED
FEB 09 1994
DEP - JACKSONVILLE

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)

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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

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 Modifications Dated: 12-24-91

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

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5. For safety reasons, the gas well was install with a 24-inch borehole.

TRAIL RIDGE LANDFILL
SIDE SLOPE UNIT CLOSURE
QUALITY ASSURANCE AND
QUALITY CONTROL DOCUMENTATION
FOR
UNITS 5, 6, 7 (PARTIAL) AND 8 (PARTIAL)

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WEEKLY PROGRESS REPORTS

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.

MEMORANDUM

DATE: September 7, 1993 - 2:00 P.M.

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
Pre-Construction Conference
ET&M No. E93-143-1

Attendees:		
	Harlon Wiggins	Law Engineering
	Jim Horton	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	John Coxwell	J.B. Coxwell Contracting
	Greg Mathes	WMI
	Jeff Reindl	WMI
	Doug Miller	ET&M
	Juanitta Clem	ET&M
	Jimmy Purvis	WMI
	Art Mastronicola	Sunshine State Surveyors

I. Introduction

Doug Miller introduced the following contacts:

Trail Ridge Landfill Representative -

Greg Mathes	289-9100(W)	264-3986(H)
Jimmy Purvis	289-9100(W)	879-1282(H)

Engineer's Representative -
Juanitta Clem/Doug Miller 642-8990

On-Site Representative and Quality Control Monitor -
Harlon Wiggins 396-5173(Office) 390-9757(Digital Beeper)

Surveyor (Benchmarks & As-Builts)
Art Mastronicola 642-8550

John Coxwell stated that David Coxwell will be the Project Supervisor and Donald Spencer will be the Site Supervisor.

Doug Miller explained that Art Mastronicola, Sunshine State Surveyors will be on-call for the surveying of the initial cover and final cover. Further, he explained that the surveyors will work with the Contractor so grades can be reworked during the surveying process. Therefore, the Contractor is not held up and the surveyor does not have to come back. This surveying, but not construction staking/surveying, will be provided by the Owner.

II. Construction Schedule

A. Initial Cover

The Contractor has not inspected the initial cover. John Coxwell said that he would contact Juanitta Clem to arrange an inspection and probes to check the thickness of the initial cover. In the meantime, Art Mastronicola will meet with Jimmy Purvis and the on-site surveyor to inspect the hill.

B. As-Built Survey of Initial Cover

After the initial cover has been finish graded and compacted, the Surveyor will as-built the initial cover and the QC Monitor will check the thickness (min. 18").

C. Test Strip

Doug Miller requested that the Contractor define the test strip area as soon as possible. Greg Mathes asked what testing of the test strip is required and Doug Miller explained that all testing of the test strip is outlined in the QA/QC Plan.

D. Temporary Silt Fence and Hay Bales

Doug Miller explained that it is very important to separate surface water runoff (stormwater) and solid waste (garbage) because all water that touches solid waste becomes leachate and must be collected, transported and treated at a wastewater treatment plant.

He explained that the Contractor must construct the temporary silt fence and place bales around all inlet, as soon as possible.

E. Clay Layer

John Coxwell asked whether it is best to place the clay from bottom to top or top to bottom. Doug Miller explained that it can be done either way and has pluses and minuses to both methods.

Doug Miller explained that the clay layer must be placed in two 6" (minimum) lifts and if the Contractor places any material on top of a lift prior to receipt of test results, the Contractor is doing so at his own risk. Doug explained that cleat marks due to a dozer in the clay are acceptable.

F. Top Soil

Doug Miller explained that the top soil can be placed in one lift but density must be checked in 12" lifts. Further, he explained that both the initial cover and top soil layer will be as-built surveyed and between those layers, the thickness will be checked.

Jim Horton asked what type of soils were used for initial cover and Greg Mathes responded that it is a combination of hard pan, sand, and sandy clay. The initial cover must be compacted to 90%.

G. Drainage

Doug Miller explained that the drainage system should be installed to control runoff as soon as possible. This installation will require removal of waste and all waste must be covered with 18" of initial cover as soon as possible. Waste must not be left uncovered overnight or during a rainfall event.

H. Gas Wells

Doug Miller explained that the gas well installation does not appear to be critical based upon time and can be installed at the Contractor's discretion. However, once the hole has been drilled, all waste must be removed on the same day as drilling and the hole must be properly protected, in particular during rainfall events.

I. Maintenance of Traffic

Doug Miller stated that it appears that a flagman will be needed during placement of the first unit (proceeding from the swale upward).

The Contractor must develop a Maintenance of Traffic Plan.

J. Other

Greg Mathes requested that the Site Supervisor sign-in at the landfill office every day.

The Contractor's haulers must bypass the scalehouse so Doug Miller requested that a list of trucks be provided to the Owner daily. Thus, the scalehouse operators will know which trucks are not hauling waste for disposal and can bypass the scales.

III. Contract

Pat Knapp provided the following:

Contract - Signed by the Contractor
Schedule of Values
Construction Schedule - Received 9/2/93
List of Subs, Suppliers, Etc. - Received 9/2/93
Confidentiality Agreement - Received 9/2/93
Pollution Prevention Plan
Performance Bond
Certification of Insurance

Greg Mathes said he would provide the Contractor a draft "Contractor Safety Declaration".

IV. QA/QC

Juanitta Clem distributed the latest version of the QA/QC Plan (revised 8/25/93) to the Contractor, Law Engineering and Trail Ridge Landfill.

Doug Miller requested that the Contractor proceed with the clay borrow source pre-qualifications as soon as possible.

Doug Miller explained that the initial cover and clay layer must have a minimum thickness of 18" and 12" (6" per lift), respectively and the final grade must be within 0.1'$\pm$. Therefore, the top soil layer may have a minimum thickness of 21".

V. Progress Meetings

It was agreed that progress meetings will be held weekly on Mondays at 2:00 P.M.

VI. Other

A. Right-To-Know, Tag Lock-Out & Safety Meetings

Greg Mathes requested that the Contractor's Site Supervisor and Site Operator meet with him on the first day of construction to review the Right-To-Know regulations as well as Waste Management's Tag Lock-Out Training and Safety Meetings.

John Coxwell stated that they will bring their Safety Consultant to the first meeting.

B. Typical Work Week

John Coxwell stated that they will work Monday-Friday, 10 hours/day.

C. Rain Delays

Doug Miller stated that the Contractor will be allowed all rain days allowed by the Department of Environmental Protection (DEP).

D. Staging Area

Doug Miller explained that the Contractor may use the expansion area to the south of the landfill and the very top of the landfill hill for staging areas.

John Coxwell said that they will begin construction on September 15, 1993.

The meeting was adjourned at 2:45 P.M.

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.

MEMORANDUM

DATE: September 13, 1993 - 1:00 P.M.

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
Construction Conference
ET&M No. E93-143-1

Attendees:		
	Harlon Wiggins	Law Engineering
	John Coxwell	J.B. Coxwell Contracting
	P.J. Knapp	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Greg Mathes	WMI
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Juanitta Clem	ET&M
	Art Mastronicola	Sunshine State Surveyors

Meeting

Juanitta Clem explained to the Contractor that Side Slope Units 9 and 10 are not complete at this time and therefore, are not ready for final cover. However, if the Contractor wishes to keep them in the Contract, the landfill operator will do their best to complete the area. Further, it was explained that Units 9 and 10 would not be required to meet the December 6, 1993 deadline.

John Coxwell stated that he would prefer to remove Units 9 and 10 from the Contract for now and reevaluate these units at a later date.

P.J. Knapp stated that the downcomer pipe for Units 9 and 10 may be a problem. It was agreed that if there is a problem that it could be purchased but not installed.

John Coxwell asked about the size of roots that will be acceptable in the top soil. Harlon Wiggins stated that the QA/QC Plan limited the size to 3/8". Mr. Coxwell asked about acceptable length and Mr. Wiggins responded that basically, acceptability will be based upon diameter and not length.

John Coxwell asked about testing of the top soil for pH and organic content. Upon discussion, it was agreed that the top soil will be tested in a stockpile prior to placement. (Upon evaluation, it has been determined that this would mean testing the first 16,150 CY± of top soil at a frequency of 1 test/800 CY and thereafter, at a frequency of 1 test/1,600 CY. Further, these would require additional QC personnel unless the stockpile is placed onsite. Finally, this will require that the Contractor work closely with the QC Monitor, Harlon Wiggins to assure that the material is tested at the proper frequency, prior to placement. Otherwise, it must be tested in-place at the Contractor's risk.)

John Coxwell stated that the clay borrow source is currently being tested for pre-qualification and the test strip construction date has not been set.

Site Visit

Everyone met on the slopes to evaluate the initial cover grading and thickness.

The site had received a 3"-4" rain event on Friday, September 10, and had experienced erosion. The landfill operator will regrade the slopes. Generally, the initial cover thickness met or exceeded 18" except in an isolated area along the northern slope of Unit 7 which will be regraded and supplemented to meet proper grades and thicknesses.

It was agreed that the temporary silt fence and haybales along the top are not needed. Nevertheless, the permanent silt fence and haybales will be required.

John Coxwell asked if the sod could be rolled bermuda rather than the specified argentina bahia. Juanitta Clem stated that it could not be substituted but agreed to discuss the substitution with Doug Miller. (Upon discussion, it has been determined that bermuda sod can not be substituted for the argentina bahia sod.)

John Coxwell stated that he will begin construction on Monday, September 20 and will place the test strip on Tuesday, September 21. He agreed to call Art Mastronicola later in the week to schedule the as-built surveying of the test strip area.

The meeting was adjourned.

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Consulting & Design Engineers
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PRINCIPALS
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Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: September 27, 1993

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:		
	Harlon Wiggins	Law Engineering
	John Coxwell	J.B. Coxwell Contracting
	P.J. Knapp	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

Test Strip

The test strip placed on September 21 did not pass the specifications. The permeabilities did not meet the construction specs ($1x10^{-7}$ cm/sec) and approximately half of the densities did not pass the construction specs (90%). Harlon Wiggins explained that the borrow source tests indicated that approximately 90% passed the 200 sieve, however, the test strip material had approximately 40% passing the 200 sieve. The test strip material appears too sandy.

John Coxwell explained that he is constructing a new test strip at his own risk but he is also looking for a new borrow source. He plans to look at the clay pit used for the Girvin Road Landfill closure this afternoon.

If the material appears acceptable, he requested that he be allowed to proceed with a test strip without borrow testing. Juanitta Clem explained that the borrow source must be tested per the QA/QC Plan. However, the Contractor may proceed at his own risk with the test strip, concurrently with the borrow source testing and if the borrow source is not acceptable, the test strip must be removed by the Contract at no additional cost to the Owner.

Schedule

Juanitta Clem explained that Units 5 and 6 are the critical units with regards to the December deadline and recommended that the Contractor proceed with those units. John Coxwell indicated that they would proceed with Units 5 and 6 but hoped to also finish Units 7 and 8 by December.

Top Soil

John Coxwell stated that the top soil is being screened and after screening, they will add lime and mix the soil. Thus, the material will be properly screened and mixed, prior to delivery to the site.

The top soil will be stockpiled by Coxwell at their pit and John Coxwell requested that it be tested from the stockpiles. Upon discussion, it was agreed that Coxwell will label the stockpile areas so that Harlon Wiggins can test from the stockpile and maintain records regarding the location of top soil placement.

Harlon Wiggins agreed to test from the stockpiles provided he can maintain the records from source to placement without great difficulty.

Anchor Berm/Swale

Donald Spencer said that the anchor berms are being exposed. P.J. Knapp explained that below the anchor berm (on the exterior side) the swale and up the slope to the anchor berm must be undercut 18" and replaced with top soil.

Gas Well

The well driller is on site and will begin drilling. Donald Spencer explained that the station on the Construction Plans positions the well approximately 5' from the 15' terrace rather than 3'$\pm$ as indicated on the Construction Plans. Upon discussion with Jimmy Purvis, it was agreed that the position of 5' from the 15' terrace is acceptable.

Insurance

Juanitta Clem asked P.J. Knapp if he has reviewed the insurance coverage as required by Contract. P.J. Knapp said that he will be submitting the proof but asked if the Builder's Risk is required. Juanitta Clem said that it is required.

The meeting was adjourned at 2:45 pm.

cc: Greg Mathes
Jim Lukens
Chris Pearson
Doug Miller
Attendees

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
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.

CONSTRUCTION PROGRESS MEETING

DATE: October 4, 1993

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Greg Mathes	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

Test Strip

A new borrow pit has been located in Nassau County, approximately 17 miles from the site. The pit has not been pre-qualified but Harlon Wiggins stated that the material appears good. Harlon had determined that the clay has a moisture content of 40% and he estimated that optimum moisture would be 30%.

Donald Spencer said that a test strip would be placed after the meeting.

Juanitta Clem explained that since the borrow source had not been pre-qualified, that the pre-qualification testing of the clay would be conducted concurrently with the test strip testing. Also, she explained that the Contractor must proceed with locating and obtaining pre-qualification of a new borrow source, so if the current source does not pass, a new source has been located. Ms. Clem expressed concern that the project has been in process for three weeks and there has been little progress because of the problems with obtaining an acceptable clay borrow source.

Harlon Wiggins said that he hoped to obtain the test strip permeability sample tomorrow (10/5/93) and have preliminary results by Friday (10/8/93).

Schedule

Juanitta Clem expressed concern that the project is approximately three weeks behind schedule. She stressed to the Contractor that an acceptable clay borrow source must be located as soon as possible so the project may proceed.

Initial Cover

Donald Spencer said that the initial cover is being final graded and he hopes to complete the work by 10/7 or 10/8/93. However, he does not want to finish the work unless he can follow it up with clay placement. Thus, once again, the clay is the hold up.

Anchor Berm

The anchor berm has been exposed.

Gas Well

Harlon Wiggins explained that the Contractor did not provide the suppliers certification for the bentonite or gravel or the chain of custody for the gravel, prior to installation of the gas well, as required by the QA/QC Plan. Since a temporary bentonite plug was installed, the bentonite for the permanent plug must be certified by the supplier prior to placement.

Further, prior to placement of the filter sand over the underdrain pipe, the sand must be pre-qualified by the supplier and a chain-of-custody must be provided as required by the QA/QC Plan.

Other

Juanitta Clem asked P.J. Knapp if the insurance coverage as required by the contract has been determined. P.J. Knapp said that he believes the umbrella coverage will cover the contractual amount but documentation will be provided.

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
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.

CONSTRUCTION PROGRESS MEETING

DATE: October 11, 1993

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:		
	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Greg Mathes	WMI
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	John Coxwell	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

Top Soil

John Coxwell requested that the 24" top soil layer be divided into two layers and only the top 8-12" layer be required to meet the top soil requirements (1.5-10% organics content, pH between 5.0 and 7.0). Due to time constraints and the need to obtain DEP approval for a modification, Juanitta Clem explained that it could not be revised but would be evaluated for future phases.

John Coxwell has tested the top soil at his pit and obtained a pH between 4.8 and 5.5. Harlon Wiggins has obtained a sample for QC testing.

Test Strip

The third test strip results indicate a permeabilities between $1x10^{-8}$ cm/sec and $1x10^{-9}$ cm/sec according to Harlon Wiggins. However, the density is only around 80%. Harlon Wiggins stated that he believes that once the clay dries, that they will be able to obtain the required density.

John Coxwell stated that he believes that obtaining the required density will not be a problem. He will proceed with clay shipment.

Initial Cover

Juanitta Clem stated that the initial cover on Unit 5 has large pieces of waste in it. Donald Spencer said that he would make sure that all this material is removed prior to clay installation.

Sunshine State is conducting the as-built survey of the initial cover on Units 5 and 6. Donald Spencer stated that Units 5 and 6 may not be complete. He believes that additional waste must be placed in the southern end of Unit 6 and possibly Unit 5 also. He requested that grade stake be set for completion of Units 7 and 8 which everyone agrees are not complete and Units 5 and 6, if needed.

Juanitta Clem explained that the 180 day time clock per Chapter 17-701, F.A.C. does not start until the final placement of waste in a unit. Therefore, Units 7 and 8 do not appear to be on the time clock for the December 1 deadline.

Temporary Downcomer

Juanitta Clem stressed to the Contractor that a temporary downcomer system must be in place and functioning until the permanent downcomer was installed.

John Coxwell stated that the temporary downcomer was washed out over the weekend (0.9" of rainfall) and would be replaced. Juanitta Clem stressed that it must be replaced ASAP.

Greg Mathes stated that Jimmy Purvis will install a constant record rain gauge during the week.

Insurance

Pat Knapp said that he will submit the insurance documentation this week.

Units 9 and 10

Since the waste has not been placed for closure of Units 9 and 10, Juanitta Clem requested a deduct from the Contractor for those units. Pat Knapp said he will submit a deduct for the units except for the downcomer pipes which were previously ordered. It was agreed that the Owner will pay for the downcomers which will be stored on site for future installation.

Gas Well

Harlon Wiggins stated that he is waiting for a re-submittal on the gravel used in the well. He needs certification from the supplier that the gravel meets FDOT No. 24 gradation.

Grassing

John Coxwell said that he will install rolled bahia.

Meeting adjourned.

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
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.

CONSTRUCTION PROGRESS MEETING

DATE: October 18, 1993

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:		
	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Jim Lukens	WMI
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	John Coxwell	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

Construction Schedule

Coxwell Contracting stated that the first lift of clay has been placed on Units 5 and 6 except on the southern end near the containment tank. They would like to place the first lift on Units 7 and 8, prior to proceeding with a second lift on Units 5 and 6. The clay lined areas held up well over the weekend with 4+ inches of rainfall and Coxwell would like to line the other units so the maintenance of intial cover is basically eliminated.

Juanitta Clem explained that she did not object however, the Contractor must maintain a temporary downcomer system for stormwater runoff from the clay lined areas.

John Coxwell stated that they would like to construct the downcomer trenches (including the clay liner) and use the trenches for stormwater conveyance until the clay liner is complete (both lifts). He stated that he believes the downcomer pipes will be a constant maintenance problem until the liner is complete, so he will install them after the liner.

Juanitta Clem said that she did not object but cautioned that the trenches will have to maintained regularly.

John Coxwell asked if he will be allowed rain delays. Juanitta Clem stated that an extension will be granted if it can be justified to the DEP and granted by the DEP. The previous work at the site included a formula for rain delays that may be used.

Top Soil

Harlon Wiggins said that his sample of the top soil was tested and passed the pH and organics requirements.

It was discussed that the sod thickness (in particular, the root mass) is not a part of the top soil thickness.

Sand for Underdrain

Harlon Wiggins recommended that the sand be pre-tested for permeability.

John Coxwell said that he would bring a load to the site for testing.

The QA/QC for the sand was discussed. It was agreed that the sand would be prequalified at the source and a chain-of-custody via truck tickets would be provided.

Downcomer

The downcomer pipes for the terraces are to arrive today. The other pipes and underdrain pipe shipments have arrived on site.

Insurance

The insurance documentation has been received by Trail Ridge Landfill, Inc. and will be reviewed.

Gas Well

Harlon Wiggins is still waiting for a re-submittal on the gravel used in the well. He needs certification from the supplier that the gravel meets FDOT No. 24 gradation. P.J. Knapp said that he will get the documentation from the well driller.

Meeting adjourned.

cc: Attendees
Greg Mathes
Chris Pearson

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
904-642-8990

PRINCIPALS
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Robert E. Thims, V.Pres., Sec.
Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: October 25, 1993

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Jim Lukens	WMI
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

Units 7 and 8

Coxwell Contracting has resurveyed Unit 7 and 8 and determined that Unit 7 has settled approx. 0.3' and Unit 8 has settled approx. 0.66'. Jimmy Purvis explained that waste was recently placed in the two units to complete them for placement of final cover. He explained that they were not compacted to the same degree as Units 5 and 6.

Juanitta Clem explained that according to the Contract Specifications, once the Contractor accepted the units he is responsible for all soil amendments, even if the reason is erosion or subsidence due to waste settlement or soil compaction.

David Coxwell agreed that they must amend the soil.

Clay Layer

Harlon Wiggins explained that the clay liner does not meet the density requirements (90%). The clay has a density of 83-87%. He explained that the clay is too wet and needs to be dried out.

David Coxwell said that after the site dries from the current rains, he will investigate disking.

Clay has not been placed on Units 7 and 8 and only one lift has been placed on Units 5 and 6 except for the southern edge near the containment area.

It was discussed that Coxwell may not be able to complete the southern edge of Units 5 and 6, and will not be able to complete Units 7 and 8. Coxwell stated that they will be able to complete all units to Station 96+25. Jimmy Purvis said that he will investigate completing Units 5 and 6 and agreed to ending Units 7 and 8 at Station 96+25. Jimmy will decide on Units 5 and 6 this week and contact Juanitta Clem.

Downcomers

Donald Spencer explained that one 18" terrace downcomer pipe is broken. The manufacturer has been contacted and will fix the pipe prior to installation.

Rain Delays

As discussed previously, the Owner will grant rain delays if they are justified and granted by the DEP.

Juanitta Clem requested that the Contractor submit the following information at the end of the month:

1. Rain logs
2. Days of rain delays
3. Explanation of all rain delays

It should be noted that a construction item must be on the critical path in order to qualify for a rain delay.

Downcomer D-21

Juanitta Clem showed the Contractor in the Contract Drawings that the downcomer at the corner near the containment area (D-21) must be placed over an HDPE rain flap and outside the HDPE bottom liner. She explained that the top of the rain flap and edge of the liner must be field located by hand prior to pipe installation and Harlon Wiggins must observe the field location.

Juanitta Clem also reminded the Contractor that an aluminum plate must be placed in the inlet (S-21).

Harlon Wiggins said that he had noticed that the aluminum plate is missing from Inlet S-19. Jimmy Purvis said that he will replace the plate.

Units 9 and 10

P.J. Knapp will submit a deduct for these units.

Meeting adjourned.

cc: Attendees
Greg Mathes
Chris Pearson
John Coxwell

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
904-642-8990

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Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: November 1, 1993

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Greg Mathes	WMI
	Jim Lukens	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

Clay Layer

Juanitta Clem explained that ET&M is trying to revise the density requirement for the clay layer from 90% to 85%. However, this revision must be approved by the DEP. If such a revision is approved by the DEP, the Contractor will be notified. Until such time, the Contractor will be held to the 90% density requirement.

Juanitta Clem stated that since Units 5 and 6 have a December deadline, the Contractor should concentrate his efforts on those units as much as possible. Don Spenser explained that with the six inches of rainfall on Saturday, the site is too wet to work. However, he hopes to begin disking Units 5 and 6 on Tuesday (Nov. 2). Further, he stated that he will concentrate his efforts on those units.

One lift of clay has been placed on Units 5 and 6 except for the southern edge near the containment area. One lift of clay has been placed on most of Unit 8.

It was discussed that Coxwell will be able to complete Unit 5 but may not be able to complete the southern portion of Unit 6. Coxwell stated that they will be able to complete Units 6, 7, and 8 to Station 96+25. Greg Mathes and Jim Lukens said that they will investigate completing Unit 6 and agreed to ending Units 7 and 8 at Station 96+25. Greg Mathes will decide about Unit 6 this week and contact Donald Spencer.

Rain Delays

The site received 6 inches of rainfall on Saturday.

Roadside Swale Maintenance

Juanitta Clem made note that the Contractor was cleaning the roadside swales and replacing the hay bales. She requested to Greg Mathes that landfill staff maintain the swales upstream of the closure construction as well.

Units 9 and 10

P.J. Knapp will submit a deduct for these units.

Gas Well

Juanitta Clem requested that the Contractor obtain the certification on the stone, installed in the gas well, as requested previously.

Pay Request

The first pay request was submitted to the site via fax and was reviewed by Greg Mathes, Jim Lukens, P.J. Knapp and Juanitta Clem. The request was approved.

Meeting adjourned.

cc: Attendees
Chris Pearson
John Coxwell
David Coxwell
Jimmy Purvis

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
904-642-8990

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N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: November 8, 1993

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Jim Lukens	WMI
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

Clay Layer

Juanitta Clem explained that the density of the clay has been revised from 90% to 85%. However, this revision is for the existing clay only. All future sources must be prequalified by the Soils QA Engineer, Jim Horton, including the revision of the density from 90% to 85%. Harlon Wiggins stated that a new source of clay has been prequalified, however he will have to discuss the density revision for the new clay with Jim Horton. Harlon Wiggins stated that the new clay is not as wet as the existing clay and has an optimum moisture content of 29.7%.

Juanitta Clem asked the Contractor how much clay he will be able to obtain from the existing source. Donald Spencer stated that he believes that he will have enough clay to place a second lift on Units 5 and 6.

Juanitta Clem explained that a new test strip must be conducted for the new clay source. If any areas will not receive at least one lift of the existing clay, then the new test strip must be two lifts. She recommended that the Contractor construct a two lift test strip for simplicity purposes.

Units 5 & 6

Jimmy Purvis explained that it has been determined that Trail Ridge Landfill will complete Unit 5, but will not complete Unit 6. Unit 6 (just as Units 7 and 8) will be completed to Sta. 96 + 25. Juanitta Clem requested and Jimmy Purvis agreed that the terrace portion of Unit 6 must be completed to the southern end. The side slope above the terrace will be graded and receive initial cover and then, the Contractor must sod the slope.

Schedule

Juanitta Clem requested that the Contractor submit a revised schedule since the phasing of the work effort has changed. In particular, she requested that the Contractor evaluate the completion of Units 5 and 6.

Rain Delays

According to Harlon Wiggins and Donald Spencer, it rained 0.9 inches on Saturday.

P.J. Knapp provided a submittal to Juanitta Clem for a rain delay request.

Gas Wells

Juanitta Clem stated that the certification for the stone in the gas well has been received. Harlon Wiggins stated that the certification has been deemed acceptable.

Other

Juanitta Clem explained to the Contractor that the terrace on Unit 6 at Sta. 117 + 80 is the end of that terrace, meaning the terrace will not continue when the next unit (Unit 9) is closed. Therefore, the end of the terrace must be created as a part of this closure and should have a radius which slopes toward the bottom of the terrace at that point as shown on the Contract Drawings.

Meeting adjourned.

cc: Attendees
Greg Mathes
Chris Pearson
John Coxwell
David Coxwell

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32246
904-642-8990

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Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: November 15, 1993

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:		
	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Donald Spencer	J.B. Coxwell Contracting
	Jim Lukens	WMI
	Jimmy Purvis	WMI
	Chris Pearson	City of Jacksonville
	Juanitta Clem	ET&M

CLAY LAYER

The clay layer has been placed as follows:

Unit 5 - First Lift - 100% complete except corner near containment area including all testing
Second Lift - 75% complete not including testing

Unit 6 - First Lift - 100% complete including all testing
Second Lift - 75% complete not including testing

Unit 7 - First Lift - 100% complete except haul road not including testing

Unit 8 - First Lift - 100% complete including all testing

All the test results for the first lift of Units 5, 6 and 8 have passed.

The existing clay pit has sufficient clay for completion of Units 5 & 6. It is not known if there will be sufficient clay for completion of Units 7 & 8.

DOWNCOMERS

Downcomer D-19: All the trenches for the downcomer pipe have been cut. The initial cover was placed and two lifts of clay were placed over the initial cover. The testing has been completed for Units 5, 6 and 8, and the results are passing. We are currently waiting for the results of the permeability test on Unit 7.

Downcomer D-85: The location of the downcomer has been staked, however the trenches have not been cut. According to Donald Spencer, he plans to start cutting the trenches on Tuesday. He plans to locate the edge of the liner on Tuesday afternoon. Juanitta Clem stated that she wants to be present when the liner is located. Harlon Wiggins agreed to call Juanitta, prior to locating the liner so she can be present.

SCHEDULE

According to Donald Spencer, once the second lift of clay on Units 5 and 6 are complete, he hopes to install the underdrain, cut the roadside swale, and place the top soil concurrently. He plans to start on the western end of the project.

Harlon Wiggins requested that Coxwell deliver a load of the sand for the underdrain to the site. Therefore, he can prequalify the sand prior to placement of the underdrain.

EXTENSION OF TIME

Juanitta Clem explained that she has requested an extension of time from the DEP due to the rain delays in the month of October. She has requested a new deadline of January 15, 1994. However, until such an extension is granted by the DEP the Contractor will be held to the December 9, 1993 deadline.

Juanitta Clem will call Mary Nogas of the DEP before Friday to check on the status of the extension.

GAS WELL

According to Harlon Wiggins, the temporary plug around the gas well has been removed. The initial cover and the first lift of clay has been placed around the vent to meet the 3:1 slopes. Once the clay layer has been completed, the well driller will come back and replace the plug.

Pat Knapp agreed to contact the well driller and obtain the prequalification information on the bentonite plug material prior to re-installation.

UNIT 5

Jimmy Purvis agreed to start the completion of Unit 5 at the southern edge near the containment area on Tuesday. He anticipates that it will take him 2.5 days to complete the work.

Meeting Adjourned

cc: Attendees
Greg Mathes
John Coxwell
David Coxwell

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
904-642-8990

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James E. England, P.E., President
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Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: November 22, 1993
2:00 P.M.

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:		
	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Donald Spencer	J.B. Coxwell Contracting
	Jim Lukens	WMI
	Jimmy Purvis	WMI
	Doug Miller	ET&M

CLAY LAYER

The clay layer has been placed as follows:

Unit 5 - First Lift - 100% complete except corner near containment area including all testing
Second Lift - 100% complete including testing

Unit 6 - First Lift - 100% complete including all testing
Second Lift - 100% complete including testing

Unit 7 - First Lift - 100% complete except haul road not including testing
Second Lift - 100% complete except haul road (test results pending)

Unit 8 - First Lift - 100% complete including all testing
Second Lift - 100% complete (tests results pending)

UNDERDRAIN

Terrace T-1: Installation of underdrain at T-1 is in progress. The filter material was approved by Law Engineering.

TOP SOIL

Unit 6: Top soil placement has begun on the west end of Unit 6. Law Engineering has prequalified the material. Sunshine State Surveyors to as-built on Tuesday to allow sodding to begin.

DOWNCOMERS

Downcomer D-19: Installation of D-19 is in progress. National Seal has completed repair to liner edge.

Downcomer D-21: Downcomer D-21 will be installed after D-19. Donald Spencer requested that the invert at S-21 be raised to minimize excavation depth adjacent to roadway. Doug Miller approved raising D-21 invert 20'± with the crown of pipe remaining below the throat of the S-21. National Seal has completed the flap repair at D-21.

SCHEDULE

Donald Spencer indicated the top soil and sodding would proceed from west to east, with sodding of Unit 5 and 6 (west end) beginning Wednesday.

EXTENSION OF TIME

Doug Miller explained that FDEP has not responded to the request for an extension of time to January 15, 1994.

GAS WELL

Law Engineering has not received the bentonite plug submittal.

Pat Knapp agreed to contact the well driller and obtain the prequalification information on the bentonite plug material prior to re-installation. Still waiting on certification for plug.

UNIT 5 & 6

Jimmy Purvis indicated that the southeast corner of Unit 5 intermediate cover is complete. Southeast corner of Unit 6 intermediate cover will be complete in 2± days.

Meeting Adjourned

cc: Attendees
Greg Mathes
John Coxwell
David Coxwell
Chris Pearson

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
904-642-8990

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Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: November 29, 1993
2:00 PM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Scott McCallister	WMI
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

CLAY LAYER

The clay layer has been placed as follows:

Unit 5 - First Lift - 100% complete except corner near containment area including all testing
Second Lift - 100% complete except corner near containment area including all testing

Unit 6 - First Lift - 100% complete except corner near containment area including all testing
Second Lift - 100% complete except corner near containment area including all testing

Unit 7 - First Lift - 100% complete except haul road including all testing
Second Lift - 100% complete except haul road including all testing

Unit 8 - First Lift - 100% complete including all testing
Second Lift - 100% complete including all testing

All the test results have passed.

UNITS 5 & 6

Jimmy Purvis explained that he has almost completed the initial cover placement on Units 5 & 6 in the corner near the containment area. It should be noted that he has completed Unit 6 up to T-2 (Terrace 2) which is beyond the point discussed in previous meetings. Juanitta Clem explained to the Contractor that since Unit 6 has been completed, it must receive final cover. Donald Spencer explained that he is not sure he has sufficient clay to cover this area because he is holding material in reserve for the completion of the haul road on Unit 7. Juanitta Clem requested that Donald evaluate the clay and let her know as soon as possible if there is a problem.

DOWNCOMERS

Downcomer D-19: The downcomer has been placed from Structure S-19 up approx. 75% of the Unit 6 slope (including across T-1). The 18" pipes have been placed and the underdrain has been tied into the downcomer. The Contractor is waiting for an elbow to complete the 18" stubout.

Downcomer D-85: The Contractor is in the process of placing the downcomer from Structure S-85 up to the first terrace. This includes placement on top of the HDPE liner flap.

TOP SOIL

The Contractor has placed topsoil on Units 5 & 6 from the most westerly edge to the D-19 downcomer and is in the process of placing top soil on the eastern side of the downcomer.

Harlon Wiggins stated that he has been conducting pH and thickness checks on the top soil as required.

SODDING

The Contractor is in the process of placing sod on Unit 6 from the most westerly edge to the D-19 downcomer. It was noted that the sod is not rolled sod and therefore, does not appear to be moving quickly. Juanitta Clem suggested that the Contractor consider rolled sod since placement would proceed faster.

EXTENSION OF TIME

Juanitta Clem explained that Doug Miller spoke to Mary Nogas of the DEP and she has not reviewed the extension request. However, she has promised that she will review it prior to the December 9, 1993 deadline.

GAS WELL

Juanitta Clem stated that she had received the fax from P.J. Knapp regarding the certification from the supplier for the bentonite plug and the material is acceptable. She requested that P.J. send an original to her office and to Harlon Wiggins.

Harlon Wiggins ask if the bentonite should be placed dry or in a slurry. Upon discussion, it was decided that it should be placed dry.

P.J. Knapp said that he will contact the drilling company and schedule the placement of the plug.

Meeting Adjourned

cc: Attendees
Greg Mathes
Chris Pearson
John Coxwell
David Coxwell
Doug Miller

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32246
904-642-8990

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Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: December 6, 1993
2:00 PM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

CLAY LAYER

The clay layer has been completed except for the corner near the containment area on Units 5 & 6 and the 20' haul road on Unit 7. These areas must have both lifts of clay installed. Also, the Contractor must install both clay lifts on the exterior side of the terrace above Unit 8.

Juanitta Clem expressed concern that the deadline for Units 5 & 6 is approaching and the clay installation on these units has not been completed. Upon discussion, David Coxwell stated that they will place the clay on the haul road between the two downcomer pipes and then they will proceed with clay installation on Units 5 & 6. He hopes to begin the clay installation on the haul road this week and on Units 5 & 6 next week.

The amount of remaining clay was discussed and Donald Spencer stated that he does not know if there is sufficient clay on site to finish Units 5 & 6 as well as the haul road.

DOWNCOMERS

Downcomer D-19: The downcomer has been placed from Structure S-19 across Units 5, 6 and 7 and up approx. 75% of Unit 8 (including across T-1, T-2, and T-3).

The 18" stub-out pipes have been placed and the underdrain has been tied into the downcomer at both Terraces 1 & 3 (T-1 and T-3). The Contractor is in the process of placing the sand-cement on the first terrace (T-1).

Downcomer D-21: The Contractor has placed the downcomer from Structure S-21 up to the first terrace. This includes placement over the HDPE liner flap.

UNDERDRAIN

The underdrain has been completed in Units 6 & 8 (T-1 and T-3).

TOP SOIL

The Contractor has placed topsoil on Units 5 & 6 from the most westerly edge to the Northeast corner and is in the process of placing top soil on the eastern slope near the containment area.

SODDING

The Contractor is in the process of placing sod on Units 5 & 6 from the D-19 downcomer to the Northeast corner. So far, it appears that the sodding is proceeding at a pace that is keeping up with the final grading. The sodding Subcontractor will begin watering the sod on Tuesday, December 7.

EXTENSION OF TIME

Juanitta Clem explained that she has not received a response from the DEP regarding the extension request. However, the DEP has promised that they will be review the request prior to the December 9, 1993 deadline.

GAS WELL

The Contractor is excavating around the well and will contact the drilling company to schedule the placement of the plug.

Meeting Adjourned

cc: Attendees
Greg Mathes
Chris Pearson
John Coxwell
Doug Miller
Scott McCallister

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32246
904-642-8990

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Douglas C. Miller, P.E., V. Pres.
N. Hugh Mathews, P.E., V. Pres.

CONSTRUCTION PROGRESS MEETING

DATE: December 13, 1993
2:00 PM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Greg Mathes	WMI
	Scott McCallister	WMI
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

CLAY LAYER

The clay layer has been completed except for the corner near the containment area on Units 5 & 6 and portions of the 20' haul road on Unit 7. These areas must have both lifts of clay installed. Also, the Contractor must install both clay lifts on the exterior side of the terrace above Unit 8.

The Contractor has placed both lifts of clay on the haul road between the two downcomer pipes. According to Harlon Wiggins, the testing has been conducted and results are pending.

The Contractor is in the process of final grading the initial cover on Units 5 & 6 in the corner near the containment area. According to Donald Spencer, he had to remove waste in that area in order to get the initial cover to proper grade and with the required thickness. Further since he is currently working the area, he does not know if he will have to remove more waste prior to completing the final grading of the initial cover in this area. However, he believes that no additional removal will be required.

Donald Spencer stated that he believes that he will have sufficient clay on site to finish Units 5 & 6 as well as the haul road or will be able to get additional clay from the original source.

DOWNCOMERS

Downcomer D-19: The downcomer has been placed from Structure S-19 across Units 5, 6 and 7 and up approx. 75% of Unit 8 (including across T-1, T-2, and T-3).

The 18" stub-out pipes have been placed and the underdrain has been tied into the downcomer at both Terraces 1 & 3 (T-1 and T-3). The Contractor has placed the sand-cement on the first terrace (T-1).

Downcomer D-21: The Contractor has placed the downcomer from Structure S-21 up to Unit 6 including across the first terrace (T-1). This included placement over the HDPE liner flap. The Contractor has also placed the sand-cement on the first terrace (T-1).

Donald Spencer stated that he hopes to bring the pipe crew back in at the end of the week and complete the downcomer installations. He is waiting on the permeability results on the clay layer in the haul road between the downcomer pipes.

UNDERDRAIN

The underdrain has been completed in Units 6 & 8 (T-1 and T-3).

TOP SOIL

The Contractor has placed topsoil on Units 5 & 6 from the most westerly edge to STA. 96 + 25. The Contractor has also placed topsoil on Unit 8 from the most westerly edge to STA. 96 + 25, however this topsoil has not been final graded.

SODDING

The Contractor is in the process of placing sod on Units 5 & 6 from the Northeast corner to STA. 96 + 25. The sodding Subcontractor has been watering the sod.

Jimmy Purvis requested that the sod, to be placed on the 2:1 slope at the D-21 Downcomer pipe, include a fish net and stapling. Donald Spencer said that he would convey the request to the sodding Subcontractor.

EXTENSION OF TIME

Juanitta Clem explained that the DEP has granted the extension of time to January 15, 1994. David Coxwell stated that they hope to complete the entire job (Units 5, 6, 7, & 8) by the January 15th deadline.

Juanitta Clem requested that the rain delays for the month of November be tabulated and submitted for the records and for DEP submittal if necessary.

Coxwell Contracting will be shut down from December 23, 1993 to January 3, 1994 for the holidays. It was agreed that at the next meeting (on December 20, 1993) that it would be determined if any work will be required during that period. Juanitta Clem expressed concern that the sodding may not be complete before the holidays (as defined above) and may have to be completed during the holidays.

GAS WELL

The Contractor is waiting for the drilling company to place the bentonite plug around the well.

Meeting Adjourned

cc: Attendees
Chris Pearson
John Coxwell
Doug Miller

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.

CONSTRUCTION PROGRESS MEETING

DATE: December 20, 1993
2:00 PM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	Scott McCallister	WMI
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

CLAY LAYER

The clay layer has been completed except for the corner near the containment area on Units 5 & 6 and the exterior side of the terrace above Unit 8. These areas must have both lifts of clay installed.

The Contractor has placed both lifts of clay on the haul road. According to Harlon Wiggins, all testing has been conducted and the results have passed.

The Contractor has completed the final grading of the initial cover on Units 5 & 6 in the corner near the containment area. Donald Spencer stated that he hopes to place the clay in this area later this week.

Donald Spencer stated that will not have sufficient clay on site to finish Units 5 & 6. However, he will be able to get additional clay from the original source.

DOWNCOMERS

Downcomer D-19: The downcomer has been placed from Structure S-19 to the top (across Units 5, 6, 7, and 8 including across terraces T-1, T-2, T-3, and T-4).

The 18" stub-out pipes have been placed and the underdrain has been tied into the downcomer at all terraces (T-1, T-2, T-3 and T-4). The end caps have been placed on both the downcomer pipe and the underdrain stub-outs at the top. The Contractor has placed the sand-cement on the first terrace (T-1).

Downcomer D-21: The Contractor has placed the downcomer from Structure S-21 to the top (across Units 5, 6, and 7 including across terraces T-1, T-2 and T-3). This included placement over the HDPE liner flap. The end cap has been placed on the downcomer pipe. The Contractor has also placed the sand-cement on the first terrace (T-1).

UNDERDRAIN

The underdrain has been completed in Unit 6 (T-1) except at the corner near the containment area. The underdrain has been completed in Units 7 & 8 (T-2 and T-3).

TOP SOIL

The Contractor has completed placement of top soil on Units 5 & 6 from the most westerly edge to STA. 96 + 25. The Contractor has placed top soil on Units 7 & 8 from the most westerly edge to STA. 96 + 25 and the Contractor is final grading the top soil on these units.

SODDING

The Contractor has completed sod placement on Units 5 & 6 except from the Northeast corner to STA. 96 + 25 on Unit 6.

The sod placed on the 2:1 slope at the D-21 downcomer pipe has been stapled. Donald Spencer stated that he was not sure if netting was also installed.

EXTENSION OF TIME

P.J. Knapp submitted the rain delays for the month of November. Juanitta Clem agreed to submit the rain delays to the DEP even though the Contractor hopes to complete the project prior to the extension deadline (January 15, 1994).

Coxwell Contracting will be shut down from December 23, 1993 to January 3, 1994 for the holidays. Juanitta Clem expressed concern that the sodding may not be complete before the holidays (as defined above) and may have to be completed during the holidays. Donald Spencer stated that the sodding subcontractor has agreed to keep up with the final grading of the top soil.

GAS WELL

The bentonite plug has been placed around the gas well.

Juanitta Clem asked if the Contractor has received the gas well log from the drilling company. P.J. Knapp stated that he has not received a log and will obtain the log from the driller. Harlon Wiggins requested that P.J. also obtain the pre-qualification documentation for the gravel from the drilling company.

Meeting Adjourned

cc: Attendees
Chris Pearson
John Coxwell
Doug Miller
Greg Mathes
David Coxwell

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
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.

CONSTRUCTION PROGRESS MEETING

DATE: January 3, 1994
2:00 PM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

CLAY LAYER

The clay layer has been completed except for the corner near the containment area on Units 5 & 6 and the exterior side (backslope) of the terrace above Unit 8. Units 5 & 6 have received the first lift of clay. According to Harlon Wiggins, this lift has not been tested.

Juanitta Clem explained that the terrace above Unit 6 at the corner near the containment area will not have to be completed in total. However, the backslope (from the high point of Unit 6 to the center of the terrace above Unit 6) must be constructed.

Donald Spencer stated that placement of clay will be dependent upon the weather. It rained approximately 1.4" over the weekend and clay could not be delivered to the site or placed.

DOWNCOMERS

Downcomer D-19: The downcomer has been completed with the exception of the sand-cement placement. The Contractor has placed the sand-cement on the first terrace (T-1) only.

Downcomer D-21: The downcomer has been completed with the exception of the sand-cement placement. The Contractor has placed the sand-cement on the first terrace (T-1) only.

The aluminum plate must be installed in Structure S-21 in accordance with the Contract Drawings.

UNDERDRAIN

The underdrain has been completed except at the corner of Unit 6 near the containment area.

TOP SOIL AND SODDING

The Contractor has completed placement of top soil and sod on Units 5 & 6 from the most westerly edge to STA. 96 + 25, except from the Northeast corner to STA. 96 + 25 on Unit 6. The Contractor has completed placement of top soil and sod on Units 7 & 8 from STA. 117+80 to STA. 119+80. The Contractor is final grading the top soil on the remainder of Units 7 & 8. This top soil had to be regraded due to the rainfall over the weekend.

Juanitta Clem explained that several small areas in the perimeter ditch experienced wash-outs and require repair. She also requested that Jimmy Purvis clean-up the perimeter ditch up-stream of the construction area to reduce the movement of sediments onto the construction area. Jimmy Purvis stated that he will clean-up the area and place several rows of hay bales in the perimeter ditch upstream of the construction area.

OVERSEEDING

Juanitta Clem explained that the Contractor will be required to provide proof that the overseeding is in accordance with the specifications (specifically, in the proper quantities.) Proof is at the discretion of the Contractor. Tags from all the bags of seed used on the site will be acceptable.

EXTENSION OF TIME

Juanitta Clem stated that an extension of time was submitted to the DEP for the rain delays during the month of November. She explained that the extension request stated that the Contractor hopes to complete the project by January 15, 1994 but requested an extension to January 24, 1994, if needed.

GAS WELL

The bentonite plug has been placed around the gas well.

P.J. Knapp stated that he has not received the log for the gas well. Harlon Wiggins requested that P.J. also obtain the delivery ticket(s) for the gravel used in the well construction.

OTHER ISSUES

Trail Ridge Landfill is running out of space in the current operating area and must remove the existing haul road which includes the Contractor's haul road on the western edge of the construction area. This work will begin in the near future as soon as the weather clears. The Contractor's haul road on the southern edge of the construction will not be disturbed. David Coxwell stated that with the southern road to remain that the construction will not be hampered.

Juanitta Clem explained that she had hoped to conduct a final punch-out with the City of Jacksonville and the Contractor on the 10th of January. With the inclement weather, this will be evaluated at the next meeting on January 10th and hopefully scheduled for later that week.

Meeting Adjourned

cc: Attendees
Chris Pearson
John Coxwell
Doug Miller
Greg Mathes
Scott McCallister

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
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.

CONSTRUCTION PROGRESS MEETING

DATE: January 10, 1994
2:00 PM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Jimmy Purvis	WMI
	Donald Spencer	J.B. Coxwell Contracting
	Scott McCallister	WMI
	Juanitta Clem	ET&M

CLAY LAYER

The clay layer has been completed including the corner near the containment area on Units 5 & 6 and the exterior side of the terrace above Unit 8. According to Harlon Wiggins, all the clay has been tested.

DOWNCOMERS

Downcomer D-19: The downcomer has been completed with the exception of the sand-cement placement. The Contractor has placed the sand-cement on the first terrace (T-1) only.

Downcomer D-21: The downcomer has been completed with the exception of the sand-cement placement. The Contractor has placed the sand-cement on the first terrace (T-1) only.

The aluminum plate must be installed in Structure S-21 in accordance with the Contract Drawings.

UNDERDRAIN

The underdrain has been completed including the corner of Unit 6 near the containment area.

TOP SOIL AND SODDING

The Contractor has completed placement of top soil and sod on Units 5 & 6 from the most westerly edge to STA. 96 + 25. He is in the process of placing top soil on the remainder of Units 5 & 6. This top soil must be tested for thickness and density and the grades must be checked, prior to placement of sod.

The Contractor has completed placement of top soil and sod on Units 7 & 8 from STA. 117+80 to STA. 119+80. The Contractor is final grading the top soil on the remainder of Units 7 & 8. This top soil must be tested for thickness and density and the grades must be checked, prior to placement of sod.

Harlon Wiggins stated that density and thickness checks on the top soil were the only outstanding tests. Further, he stated that all the top soil has been checked for pH and organics content.

Juanitta Clem noted that Jimmy Purvis had cleaned-up the perimeter ditch up-stream of the construction area and requested he proceed with replacement of the hay bales in the perimeter ditch.

OVERSEEDING

Juanitta Clem reminded the Contractor that he must provide proof that the overseeding is in accordance with the specifications. The overseeding had not begun and will be done when all the sod is in place.

EXTENSION OF TIME

Due to the rain delays from the previous week, it appears that all the units will not be complete by January 15th. Therefore, it was agreed that Juanitta Clem would notify the DEP that they will need to utilize the extension to January 24, 1994. Further, Donald Spencer will let Juanitta know if additional time is required beyond January 24th. If necessary, the rain delays for the month of December will be submitted to the DEP with an extension request. P.J. Knapp agreed to submit the December rain delays to Juanitta before the end of week.

GAS WELL

P.J. Knapp stated that he has not received the log for the gas well or the delivery ticket(s) for the gravel used in the well construction. He is anticipating receipt of the information this week and will forward them upon receipt.

OTHER ISSUES

Juanitta Clem explained that she needs to conduct a final punch-out with the City of Jacksonville and the Contractor as soon as possible. It was agreed that Donald Spencer will call Juanitta Clem this week to schedule the final punch-out. Since the project is anticipated to be completed with the next ten days, the weekly meetings are discontinued.

Meeting Adjourned

cc: Attendees
Chris Pearson
John Coxwell
Greg Mathes
Doug Miller

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
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.

FINAL INSPECTION

DATE: January 21, 1994
1:30 PM

PLACE: Trail Ridge Landfill

REFERENCE: Trail Ridge Landfill
Side Slope Closure
ET&M No. E93-143-1

Attendees:	Harlon Wiggins	Law Engineering
	P.J. Knapp	J.B. Coxwell Contracting
	John Coxwell	J.B. Coxwell Contracting
	David Coxwell	J.B. Coxwell Contracting
	Jimmy Purvis	Trail Ridge Landfill
	Donald Spencer	J.B. Coxwell Contracting
	Chris Pearson	City of Jacksonville
	Juanitta Clem	ET&M

A final inspection of the project site was held on January 21, 1994. During the inspection, the following punch-list was issued by England, Thims & Miller, Inc.:

1. The Contractor must install the permanent silt fence and hay bales at the backslope above Unit 8 from Sta. 117+80 to Sta. 96+25 and above Unit 6 from Sta. 96+25 south to the corner.

2. The sodding was completed during the inspection and the Contractor must complete the overseeding. The Contractor must also provide proof that the overseeding was conducted in accordance with the Contract Specifications.

3. The Contractor must do an overall clean-up of the site.

The Contractor was informed that the project must be completed by January 24, 1994 and the Contractor said that he would comply.

cc: Attendees
Greg Mathes
Doug Miller

RECORD OF DAILY OBSERVATIONS

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/20/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

Weather: Partly Cloudy
Temperature Range: 75 to 92°F

Coxwell Contracting, Inc. mobilized equipment on site. Hay bales were placed in the swale at the toe of side slope unit No. 5. Final grading began on the west end of the project limits.

Mr. Donald Spencer of Coxwell Contracting, Inc. informed LAW the west end of side slope units 7 and 8 did not meet the finished grade elevations. The west end of side slope unit No. 6 is being prepared for the clay layer test strip.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/21/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

Coxwell Contracting, Inc. began stockpiling clay layer material on site. Sunshine State Surveyors obtained as-built elevations on the initial cover in the test strip area. Following the as-builts, the initial cover thickness was tested and found to be 21 inches. Coxwell Contracting, Inc. then began placing the first lift of the clay layer on the test strip area.

Following testing of the first lift of clay layer, the second lift of clay layer was placed on the test strip and tested according to the test strip requirements.

Mr. Donald Spencer of Coxwell Contracting, Inc. was informed the compaction of the clay layer exceeded 100 percent, and a proctor would be run on this material.

Samples obtained on this date:

- Proctor No. 5
- Permeabilities Nos. 3 through 12
- Atterburg limits and percent fines Nos. 1 through 5

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/22/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

Coxwell Contracting, Inc. hauled concrete wash to place in the haul roads. Grading of slopes 7 and 8 began today. Waste Management, Inc. provided fill material for Coxwell to fill slopes 7 and 8 to initial cover grade. The fill material placed on slope 8 was a clay sand.

Mr. Jimmy Purvis of Waste Management was informed, the material for the initial cover is specified to be a granular material. Mr. Purvis responded, this material was previously approved by Mrs. Juanitta Clem of England, Thims & Miller, Inc.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/23/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

Coxwell Contracting, Inc. began hauling the proposed clay layer material. This material was stockpiled on top of the landfill south of slope No. 8. Mr. Donald Spencer of Coxwell Contracting, Inc. was informed the permeability testing of the clay layer test strip was not complete.

Coxwell Contracting, Inc. began exposing the existing anchor trench clay berm from Sta. E117+80 to E120+32. A telephone conference was held with Mr. Doug Miller of England, Thims & Miller; present were Harlon Wiggins of Law Engineering, Mr. Greg Mathes and Mr. Jimmy Purvis of Waste Management, Inc. and Mr. Donald Spencer of Coxwell Contracting, Inc. Mr. Miller was informed the solid waste elevation appeared to be high at the existing clay berm location. It was determined the location and elevation of the clay berm needed to be staked to determine the amount of solid waste to be removed, to make the proposed tie-in of the initial cover and clay layer to the clay berm. Sunshine State Surveyors staked the clay berm location. Mr. Spencer determined the initial cover at the tie-in was over excavated as the excavation moved west.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/24/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

Coxwell Contracting, Inc. continued stockpiling the proposed clay layer material on site. Grading of the initial cover material began at Sta. E120+32 to the radius at downcomer No. 19. Waste Management, Inc. began removing the overburden on the clay berm west of the leachate containment area.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/27/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on September 27, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing.

Mr. Donald Spencer of Coxwell Contracting, Inc. was informed, the clay layer test strip failed to meet the coefficient of permeability of $\leq 1.0 \times 10^{-7}$. Mr. John Coxwell of Coxwell Contracting, Inc. located another source of clay. Our representative visited the pit with Mr. Coxwell to observe the clayey soils. The material observed will be utilized for a new test strip.

Griffin Dewatering mobilized the drill rig to install gas well G-3. Installation is scheduled for Tuesday, September 28, 1993.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/28/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on September 28, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing.

Coxwell Contracting, Inc. placed test strip No. 2. Griffin Dewatering installed gas well G-3. Mr. Donald Spencer of Coxwell Contracting, Inc. was informed Griffin Dewatering did not have suppliers certifications available for the bentonite or the gravel to be used in the gas well. Also the chain-of-custody was not followed for the transportation of gravel to the site.

Gas well G-3 was installed according to the standard detail with the exception of the bentonite plug. Due to the clay layer not being installed, the bentonite plug was placed at the existing elevation to temporarily seal the well.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/29/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on September 29, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Griffin Dewatering demobilized the drill rig. Coxwell Contracting, Inc. continued to establish grade on slopes 5 and 6. Mr. Donald Spencer of Coxwell Contracting, Inc. submitted the letter of certification for the No. 2 aggregate placed in gas well G-3.

Our representative discussed the gas well installation with Mrs. Juanitta Clem of England, Thims & Miller, Inc. It was determined the aggregate gradation shall meet the requirements of ASTM D-448 for No. 2 aggregate, and the bentonite certification will be required for the permanent bentonite plug.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **9/30/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on September 30, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued working the initial cover on slopes 5 and 6, west of the leachate containment area. Areas with less than 18 inches of initial cover were located in slope No. 5. Excavation of solid waste will be performed on October 1, 1993.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/1/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 1, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began removing solid waste from the terrace between slopes 5 and 6, from Station N98+20 to Station N95+44.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/4/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 4, 1993. The purpose of this visit was to observe the contractors activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. placed test strip No. 3, grading of slope Nos. 5 and 6 was continued.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/11/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 11, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. removed the silt from terrace No. 1. Sunshine State Surveyors performed as-builts on slopes 5 and 6 from Station E117+80 to E123+00. The surveyors were unable to provide results of the as-built elevations. Mrs. Juanitta Clem of England, Thims & Miller, Inc. was informed the as-builts were not provided. Mrs. Clem had the elevations faxed to the site.

Two samples of topsoil were obtained from the Marietta pit. These samples were returned to LAW's laboratory for verification of pH value and organic content.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B Wilde
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/12/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 12, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began placing the first lift of the compacted clay layer on slope No. 6, from Sta. E117+80 to Sta. E121+50. Sunshine State Surveyors reshot the as-built elevations on slopes 5 and 6, from Sta. E117+80 to Sta. E124+00. The elevations were within tolerance with the exception of terrace No. 1 at downcomer No. 19, and terrace No. 1 at Sta. E123+92.

The clay layer material was placed in sufficient thicknesses to allow enough material to be placed on slope No. 5. The clay berm from Sta. E117+80 to E120+32 was exposed to allow for tie-in of the clay layer on slope No. 5 to the clay berm. The above mentioned as-built discrepancies were corrected to allow for re-survey.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wilde

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/13/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 13, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing the first lift of the compacted clay layer on slope No. 6, from Sta. E121+50 to Sta. E124+00. The contractor began placing the clay layer material on terrace No. 1 and slope No. 5.

Sunshine State Surveyors reshot the as-builts that were out of tolerance on October 12, 1993. Slope Nos. 5 and 6 were surveyed from the northeast intersection to Sta. N96+25. All elevations were within tolerance.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/14/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 14, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing clay material on slope Nos. 5 and 6. The first lift of the compacted clay layer on slope Nos. 5 and 6 from Sta. E117+80 to Sta. E120+18 was tested for compaction and thickness. The clay layer met the specified compaction and thickness requirements. The required laboratory test samples were obtained and returned to LAW's laboratory.

A field exploration was performed on a borrow pit in Lawtey, Florida. A sample of clay was obtained for qualification testing.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/15/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 15, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began grading and compacting the first lift of compacted clay layer from Sta. E120+37 to Sta. E124+00 of slope Nos. 5 and 6. Due to inclement weather the contractor discontinued work at 1:00 PM.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/18/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 18, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. removed silt from the roadside swell and terrace No. 3. No clay was hauled today due to the site being wet. Waste Management recorded 4.3 inches of rain from 12:00 PM, Friday to 7:00 AM, Monday. HDPE pipe and fixtures were delivered to the site today.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/19/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 19, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began over-excavating the location of downcomer 19 on slope Nos. 5 and 6. The solid waste was removed and the initial cover placed in the trench. Grades were established on slope Nos. 7 and 8, and terrace No. 3. The contractor began reworking the initial cover to meet the plan elevations.

The compaction and thickness was achieved on the initial cover for downcomer No. 19 on slope No. 6 and slope No. 5 up to the temporary pipe.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/20/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 20, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing clay layer material on slope Nos. 5 and 6 from Sta. E120+37 to Sta. E124+00. Two 6-inch layers of compacted clay layer material were placed in the trench on slope Nos. 5 and 6 for downcomer 19. The compacted clay layers for downcomer 19 met the compaction and thickness requirements. A sample of the compacted clay for downcomer 19 was obtained for laboratory hydraulic conductivity testing.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/21/93**

PROJECT: ***Trailridge Side Slope Closure Phase I and II*** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 21, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing clay layer material on slope Nos. 5 and 6 from Sta. E120+37 to Sta. E124+00.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/22/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 22, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing clay layer material on slope Nos. 5 and 6 from Sta. N97+79 to N96+25. Our representative contacted Mrs. Juanitta Clem of England, Thims and Miller, Inc., concerning downcomer No. 21. Mrs Clem was informed that inlet S-21 did not line up with the northeast corner of terrace Nos. 1, 2 and 3. Mrs. Clem stated that downcomer 21 could be placed to meet the corners of the terraces and the terrace drains adjusted, respectively.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/23/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 23, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. graded and compacted the clay layer material on side slope Nos. 5 and 6 from Sta. E120+37 to Sta. E124+00. Mr. Donald Spencer of Coxwell Contracting, Inc. was informed the clay layer material was fifteen percent above optimum moisture content. Mr. Spencer was informed that working the material with the bulldozers would not allow the material sufficient depth to aerate the material. Mr. Spencer was also informed the material should be ripped with an harrow to allow the material to dry.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/24/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 24, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued working the clay layer material on side slope Nos. 5 and 6 from Sta. E120+37 to Sta. E124+00. A light rain fell periodically throughout the day.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/25/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 25, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. removed solid waste on terrace No. 3 from Sta. N97+32 to Sta. N96+25. The excavation was backfilled with initial cover material. No clay was hauled today, due to inclement weather.

The contractor checked the elevations of terrace Nos. 3 and 4. Terrace No. 3 was found to have settled 0.33 feet, and terrace No. 4 was found to have settled 0.66 feet. The contractor was informed, maintenance of the slopes is their responsibility.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/26/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 26, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

No work was performed today due to inclement weather.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/27/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 27, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began placing initial cover material on slopes 7 and 8. Mr. Donald Spencer of Coxwell Contracting, Inc. informed our representative the clay layer material on slopes 5 and 6 is too wet to work. Mr. Spencer was informed the compaction on the clay layer material would not be reduced from the specified 90 percent.

Our representative contacted Mrs. Juanitta Clem of England, Thims & Miller, Inc. concerning the as-built elevations for terrace No. 2. Mrs. Clem was informed the contractor wants to maintain the haul road presently in place on terrace No. 2. Due to the haul road being 20 feet wide, the elevation should be obtained five feet up the slope of slope No. 7 to certify slope No. 7 for clay layer installation. Then upon removal of the haul road from terrace No. 2, the elevations will be obtained at the plan locations.

To certify terrace No. 2, Mrs. Clem stated this would be acceptable. Mrs. Clem was also concerned with clay layer construction proceeding on slopes 7 and 8 prior to compaction being achieved on slopes 5 and 6. Mrs. Clem stated she would discuss the clay installation with Mr. Doug Miller of England, Thims & Miller, Inc and have Mr. Miller discuss the clay installation with Mr. John Coxwell of Coxwell Contracting, Inc.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wilde
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/28/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 28, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued preparing slopes 7 and 8 for as-built elevations. Compaction of slopes 5 and 6 was continued. Mr. Donald Spencer was again informed compacting the clay layer would not achieve compaction, due to excessive moisture.

Sunshine State Surveyors performed the as-built elevations on the initial cover on slope No. 8. Following the as-built survey the specified compaction an thickness tests were performed on slope No. 8. Slope No. 8 met the specified compaction and specified thickness.

The contractor continued hauling clay layer material this afternoon. The clay layer material was placed on the second lift of compacted clay layer on slope No. 6. from Sta. E117+80 to Sta. E120+27.

The contractor informed our representative, clay layer material will be imported on October 29, 1993. The contractor intends to place clay layer material on slope No. 8. Mr. David Coxwell of Coxwell Contracting, Inc. informed our representative hydraulic connections will be installed on one of the bulldozers on site to accommodate a harrow to scarify the clay layer material. The scarification of the clay layer materials is intended to aerate the material to a moisture suitable for compaction.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **10/29/93**

PROJECT: ***Trailridge Side Slope Closure Phase I and II*** ***LAW PROJECT NO:*** ***446-01631-13***

A representative of Law Engineering, Inc. (LAW) visited the subject project on October 29, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The material was placed on slope No. 8 from Sta. N96+25 to Sta. N97+32, and from Sta. E122+40 to Sta. E119+30. The location of downcomer 19 on slope No. 8 was excavated to initial cover grade. The initial cover met the specified requirements for compaction and thickness.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/1/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 1, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began dewatering the access road and the haul roads. The silt was removed from the roadside swale and the dilapidated bay bales were replaced. No clay layer material was imported today due to the site being too wet. The clay borrow pit was visited, the contractor was removing stormwater from the borrow pit.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/2/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 2, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began scarifying the clay layer material on slope Nos. 5 and 6.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/3/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 3, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The clay layer material was placed on slope 8, from Sta. E119+30 to Sta. E117+80.

Scarification of the clay layer material on slopes 5 and 6 was continued. The clay layer on slopes 5 and 6 was compacted. Slope 8 was compacted from Sta. N96+25 to Sta. E120+37. Mrs. Juanitta Clem of England, Thims & Miller, Inc. informed our representative, the required compaction for the compacted clay layer has been lowered to 85 percent.

Slopes 5 and 6 were found to meet the specified compaction. Slope 8 was found to meet the specified compaction from Sta. N96+25 to Sta. E120+37. The specified samples for atterburg limits percent fines and permeability were obtained and returned to LAW's laboratory. Thickness tests were performed and found to be acceptable.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wilder
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/4/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 4, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The clay layer material was being stockpiled on top of the landfill. Compaction and thickness was achieved on the compacted clay layer for downcomer 19 on slope No. 8. The specified laboratory test samples were obtained for this area.

Side slope No. 7 was as-built surveyed by Sunshine State Surveyors. The elevations were found to be acceptable. Compaction and thickness tests were performed on slope No. 7. The compaction and thicknesses met the specified requirements. Coxwell Contracting, Inc. began placing clay layer material on slope No. 7.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: ***England, Thims & Miller, Inc.*** **DATE:** ***11/5/93***

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 5, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The placement of the first layer of clay on slope No. 7 was completed. The contractor began stockpiling clay layer material on slope No. 6. Mrs. Juanitta Clem of England, Thims & Miller, Inc. was informed, the clay borrow source presently being used is nearly exhausted. Mrs. Clem was also informed the contractor would relocate to the Lawtey Pit. Mrs. Clem was informed the Lawtey Pit has been pre-qualified. Mrs. Clem informed our representative, a 2-lift test strip would be constructed, due to terrace No. 2 not being covered with the first layer of clay.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/8/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 8, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. spread the stockpile of clay on slope No. 6. No clay layer material was imported due to the site being too wet.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/9/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 9, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. excavated downcomer 19 on slope No. 7. Mr. Donald Spencer of Coxwell Contracting was informed, it is not advisable to excavate the downcomer location due to the weather forecast of rain.

The contractor excavated the downcomer location and placed the first 6-inch layer of clay. All solid waste was removed and deposited on the active face. The contractor stopped work at 2:00 PM due to inclement weather.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/12/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 12, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The material was placed on slopes 5 and 6. Due to conditions of the borrow pit, only five trucks were importing clay layer material. No work was performed on November 10 and 11, 1993, due to inclement weather.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/13/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 13, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The clay layer material was stockpiled on top of the landfill. Terrace No. 2 was excavated at the location of downcomer 19. The solid waste was transported to the active face. The second lift of compacted clay layer on slopes 5 and 6, is being graded.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/14/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 14, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The material was stockpiled on top of the landfill. Grading of the second layer of clay was continued on slopes 5 and 6.

INSPECTOR Harlon Wiggins **REVIEWED BY** Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/15/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 15, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The material was stockpiled on top of the landfill. Grading of the second lift of slopes 5 and 6 was continued east of downcomer 19. Slope 5 was scarified from Sta. E117+80 to Sta. E120+27.

INSPECTOR **Harlon Wiggins** **REVIEWED BY** Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/16/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 16, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued stockpiling clay layer material on top of the landfill. Excavation of downcomer 21 was begun on slopes 5 and 6. Field testing of the second layer of clay was completed on slopes 5 and 6.

Mr. Donald Spencer of Coxwell Contracting attempted locating the rain flap at the toe of downcomer 21. Mrs. Juanitta Clem of England, Thims & Miller, Inc. was present. The downcomer location was excavated ten feet outside of the clay berm. This area was excavated approximately three feet below top of the clay berm.

Our representative stated the top of subbase for liner construction was approximately nine feet below the top of the clay berm. The excavation would need to be six feet deep to locate the rain flap.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/17/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 17, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued importing clay layer material. The material was placed on slopes 7 and 8. The pipe crew removed the temporary downcomer pipe at D-19. The primary and secondary HDPE liner system was found to be damaged underneath the temporary pipe. Mrs. Juanitta Clem of England, Thims & Miller, Inc. visited the site to observe the liner system. The contractor exposed a 12 foot by 2 foot area of liner system where the typical end treatment had been damaged.

As requested by Mrs. Clem, the contractor removed the upper joint of the temporary downcomer at downcomer 21. The three foot rain flap was exposed and found to be cut to accommodate the temporary downcomer. A 2 foot by 4 foot area of the rain flap had been removed. The contractor uncovered the rain flap to the west end of the flap and placed stakes 5 feet apart to mark the rain flap location.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wilder
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/18/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 18, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began grading the second lift of clay on slopes 7 and 8. Excavation of downcomer 21 on slope 7 was completed. The pipe crew backfilled the first joint of pipe at S-21 and sealed the pipe and structure S-21. Mr. Jimmy Purvis of Waste Management informed our representative, National Seal will be on site Friday, November 19, 1993.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B Wilde
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/19/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 19, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued grading the second layer of clay on slopes 7 and 8. National Seal arrived on site at 11:00 AM to repair the HDPE liner. National Seal cut back the primary liner and extrusion welded the primary liner to the secondary liner at downcomer 19. National Seal also repaired the rain flap at downcomer 21.

Coxwell Contracting, Inc. found that the downcomer pipe at D-19 was one foot above grade. Mrs. Juanitta Clem stated that Coxwell will have to come out of the inlet and meet the 3:1 slope with an elbow. The HDPE liner will have to be exposed and folded back underneath the downcomer pipe.

INSPECTOR **Harlon Wiggins** **REVIEWED BY** Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/20/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 20, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued grading slope 7. The pipe crew did not work today. Mr. David Coxwell of Coxwell Contracting, Inc. is contacting the ADS supplier to obtain a 30-inch elbow for inlet S-19. The contractor began removing excess earthwork material between the roadside swale and the anchor berm.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/22/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 22, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began importing topsoil. The topsoil was placed on slopes 5 and 6 from Sta. E117+80 to Sta. E119+80. The pipe crew removed and relaid the 30-inch downcomer pipe (D-19), on slope 5. A temporary connection was made at inlet S-19 until the 30 degree elbow arrived on site.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/23/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 23, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 5 and 6 from Sta. E117+80 to Sta. E119+80. The pipe crew continued placing the 30-inch ADS on downcomer 19. Placement of the underdrain on terrace 1 was also continued.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/24/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 24, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slope 6 east of downcomer 19. The pipe crew completed placing downcomer 19 up to the top of slope 6. Mr. David Coxwell of Coxwell Contracting, informed our representative that sod may be placed on Friday, November 26, 1993. Mr. Coxwell was informed that our representative will not be on site Friday.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wilde
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/29/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 29, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 5 and 6, east of downcomer 19. The pipe crew began placing downcomer 21, on slopes 5 and 6. The sod subcontractor continued placing sod on slope 6 from Sta. E117+80 to Sta. E119+80.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **11/30/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on November 30, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 5 and 6, east of downcomer 19. The pipe crew continued placing underdrain on terrace 1, and continued work on downcomer 21. The sod subcontractor continued placing sod on slopes 5 and 6 from Sta. E117+80 to Sta. E119+80.

Mr. Ron Leming of Coxwell Contracting, Inc. informed our representative that the welded 18-inch ADS pipe on terrace 1 of downcomer 21 had cracked overnight. ADS is scheduled to visit the site on December 1, 1993, to repair this pipe.

The topsoil on slope 6 between downcomer 19 and downcomer 21 met the specified compaction and specified thickness requirements. Organic content and Ph samples were obtained, as specified for the topsoil.

Mrs. Juanitta Clem of England, Thims & Miller, Inc. was informed, the final cover as-built elevations could not be taken on the downcomer pipes at the terrace locations due to the rip rap terrace drains being constructed over the downcomer pipes. Mrs. Clem stated the invert elevations of the terrace drains shall be taken on the invert of the terrace drain pipes, and the top of terrace elevations shall be taken on the rip rap placed on the ditch blocks. Mrs. Clem stated that the elevations shall be taken at both terrace drains for each location.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/1/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 1, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 5 and 6. ADS repaired the 18-inch pipe on downcomer 21. The pipe crew placed the underdrain on terrace 3. The pipe crew also removed the existing hay bales west of the leachate containment ditch paving.

Mr. Jimmy Purvis of Waste Management requested the existing soil remain underneath the primary and secondary leachate collection pipes, to support the pipes.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/2/93**

PROJECT: ***Trailridge Side Slope Closure Phase I and II*** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 2, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 5 and 6. Sod placement was also continued on slopes 5 and 6. The pipe crew continued installing the 30-inch downcomer 19 on slope 7.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/3/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 3, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 5 and 6. The pipe crew continued placing the 30-inch downcomer 19. The contractor placed the initial cover and two 6-inch lifts of compacted clay on terrace 4 at downcomer 19.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/6/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 6, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 5 and 6. The ditch block on downcomer 19 on terrace 1 was constructed. The sod contractor continued placing sod on slopes 5 and 6.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/7/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 7, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued grading the topsoil on slopes 5 and 6. Topsoil was placed on slope 8. The sod contractor continued placing sod on slopes 5 and 6. The pipe crew was not on site today.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/8/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 8, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slope 8. Grading of the topsoil was continued on slope 6. The sod contractor continued placing sod on slopes 5 and 6. The existing sod was removed from the berm between S-21 and the north leachate containment wall. The berm was re-graded to receive new sod.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wilde
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/9/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 9, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. placed topsoil on slope 8. The sod contractor continued placing sod on slopes 5 and 6. Coxwell Contracting, Inc. placed the sand-cement rip rap drains on Terrace 1 and began removing the haul road on Terrace 2.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/10/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 10, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slope 8. Coxwell Contracting, Inc. removed the haul road on Terrace 2 from downcomer 19 to downcomer 21. The initial cover was established and two 6-inch layers of clay placed. The sod contractor continued placing sod on slopes 5 and 6.

Sunshine State Surveyors performed as-builts on slopes 5 and 6 from Sta. E117+80 to downcomer 21. The east 18-inch terrace drain pipe on downcomer 19 of Terrace 1 was found to be 0.4 feet above grade. The fall was measured 50 feet from the drain and found to be 1.02 percent. Mr. Donald Spencer was informed the rip rap shall be at the same elevation as the pipe invert, as directed by Mrs. Juanitta Clem of England, Thims & Miller, Inc.

Coxwell Contracting, Inc. replaced the ditch paving around inlet S-21.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/13/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 13, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began preparing the initial cover on the corner of slopes 5 and 6 to receive clay. The haul road on Terrace 2 was removed from downcomer 19 to Sta. E117+80. The forms were removed from the ditch paving at S-21. The topsoil was redressed around the ditch paving to receive sod.

Coxwell Contracting, Inc. removed solid waste on Terrace 1 from Sta. N96+25 to Sta. N95+50.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/14/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 14, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Sunshine State Surveyors preformed the as-built survey on the initial cover on Terrace 2 from downcomer 19 to Sta. E117+80.

Coxwell Contracting, Inc. stopped work at 9:30 AM due to inclement weather. One employee remained on site to supervise the sod contractor, who continued placing sod.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/15/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 15, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. began placing clay layer material on Terrace 2 from downcomer 19 to Sta. E117+80. The contractor also removed solid waste on Terrace 2 from downcomer 21 to Sta. N96+25. Initial cover was placed in the excavated area.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/16/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 16, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. completed the initial cover on Terrace 2 and slopes 5 and 6. Sunshine State Surveyors performed the as-built survey on the initial cover on slopes 5 and 6, and Terrace 2. Coxwell Contracting, Inc. began placing clay layer material on Terrace 2.

The pipe crew returned to the site and began placing the underdrain on Terrace 2, and continued placing the terrace drains on downcomer 19.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wilde
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/17/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 17, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 7 and 8. The pipe crew completed the underdrain on Terrace 3. Also, the 18-inch ADS pipe was completed on downcomer 21. The terrace drains on downcomer 19 and downcomer 21 at not complete.

INSPECTOR **Harlon Wiggins**

REVIEWED BY Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/18/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 18, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 7 and 8. The pipe crew placed the Bentonite Plug around the gas well and completed downcomers 19 and 21.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/20/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 20, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. continued placing topsoil on slopes 7 and 8. Slopes 7 and 8 were graded from Sta. E117+80 to Sta. E119+80.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/21/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 21, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. regraded slopes 7 and 8, from Sta. E117+80 to Sta. E119+80. Waste Management recorded 1.5 inches of rainfall from the previous night. The surveyors were rescheduled for December 22, 1993. The sod contractor unloaded two loads of sod.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **12/22/93**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 22, 1993. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. completed regrading slopes 7 and 8. Sunshine State Surveyors performed as-built elevations on slopes 7 and 8 from Sta. E117+80 to Sta. E119+80. The contractor began placing clay layer material on slopes 5 and 6, from Sta. N96+25 to the project limits.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **1/3/94**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on January 3, 1994. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. repaired minor washouts and removed topsoil from terrace 2 and 3, caused by the inclement weather from the previous weekend. The contractor was informed LAW's services would be performed on a part-time basis.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **1/5/94**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on January 5, 1994. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Sunshine State Surveyors performed the as-built survey on the 7-1/2 foot backslope on slopes 6 and 8. Coxwell Contracting, Inc. was engaged in grading topsoil on slopes 7 and 8. One load of sod was delivered to the site.

INSPECTOR Harlon Wiggins **REVIEWED BY** Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **1/6/94**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

A representative of Law Engineering, Inc. (LAW) visited the subject project on January 6, 1994. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Sunshine State Surveyors performed as-builts on the topsoil on slopes 7 and 8 from D19 to D21. Coxwell Contracting, Inc. placed the clay layer on slopes 5 and 6. The sod contractor continued placing sod on slopes 7 and 8.

INSPECTOR **Harlon Wiggins** **REVIEWED BY** Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: **England, Thims & Miller, Inc.** **DATE:** **1/11/94**

PROJECT: **Trailridge Side Slope Closure Phase I and II** **LAW PROJECT NO:** **446-01631-13**

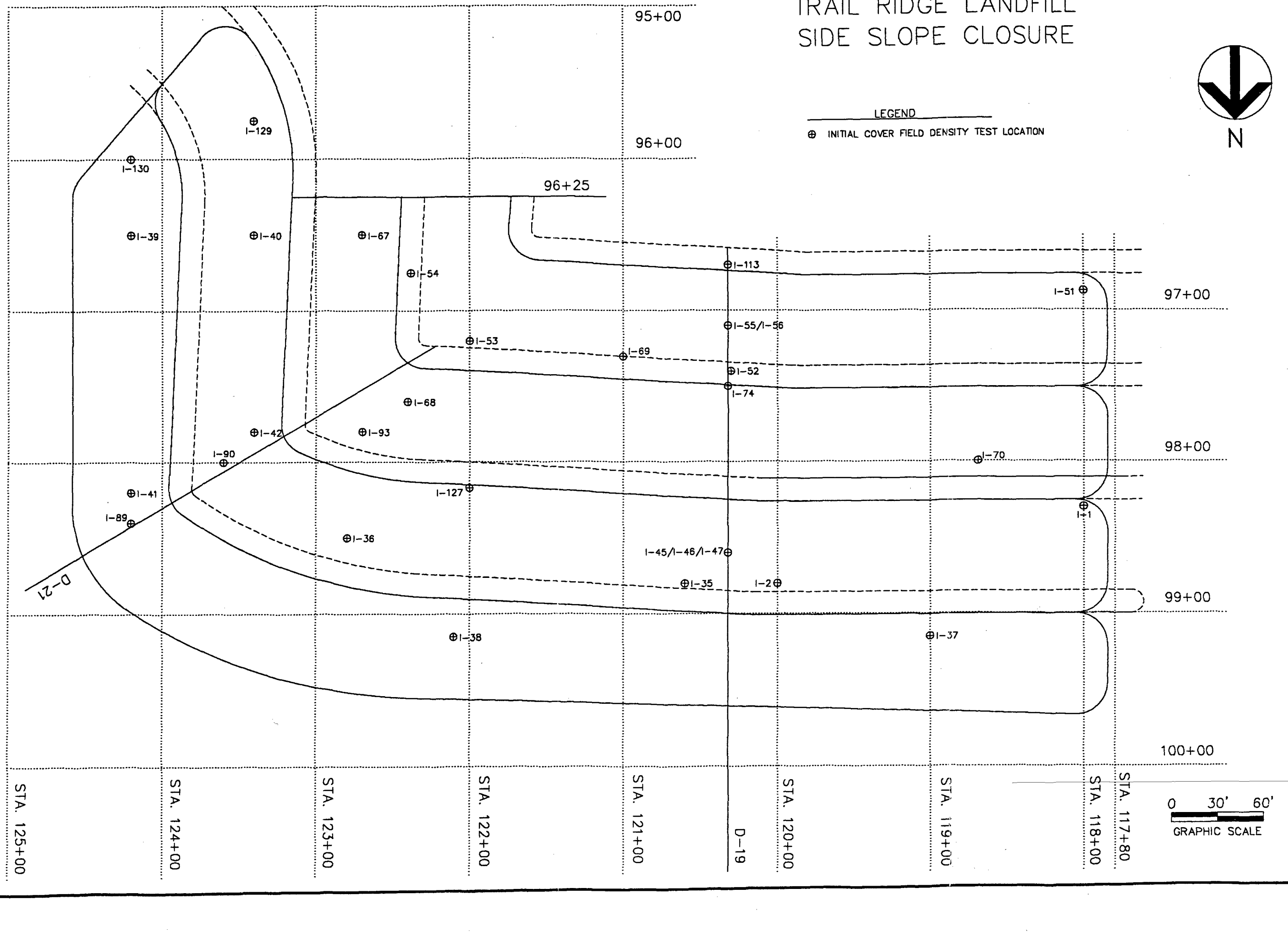
A representative of Law Engineering, Inc. (LAW) visited the subject project on January 11, 1994. The purpose of this visit was to observe the contractors' activities and perform construction materials testing for the subject project.

Coxwell Contracting, Inc. completed placing the topsoil on slopes 5, 6, 7 and 8. The topsoil was tested for compaction and thickness. Sunshine State Surveyors performed the as-built elevations on the topsoil.

INSPECTOR Harlon Wiggins

REVIEWED BY Bryant B. Wildes
Bryant B. Wildes
Chief Engineering Technician

TRAIL RIDGE LANDFILL
SIDE SLOPE CLOSURE



INITIAL COVER

The initial cover consisted of on-site sands. No soil was brought to amend the on-site soils. The location of density testing and thickness measurements are shown on the plan included in this section. The thickness measurement results are also included in this section. The results of the density testing are included in the Appendix.

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 QA/QC Plan.

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

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 9-21-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 98+60 E 119+85	21"	Test strip Area			

BDW
9/29/93

LAW ENGINEERING, INC

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-11-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 98+80 E 120+60	19"	side slope No. 6			
N 98+50 E 122+80	20"	side slope No. 6			
N 99+15 E 119+00	20"	side slope No. 5			
N 99+15 E 122+10	18½"	side slope No. 5			
N 98+30 E 118+00	19"	side slope No. 6			

BBW
10/28/93

LAW ENGINEERING, INC

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-13-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 96+50 E 124+20	19"	side slope no. 5			
N 96+50 E 123+40	20"	side slope no. 6			
N 98+20 E 124+20	20"	side slope no. 5			
N 97+80 E 123+40	18½"	side slope no. 6			
		BBW 10/28/93			

LAW ENGINEERING, INC

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-19-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 98+60 E 120+32	20"	SLOPE NO. 6 DOWNCOMER 19			
		BTBW 10/28/93			

LAW ENGINE NG, INC

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-28-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 96+90 E 118+00	28"	side slope NO-8			
N 97+40 E 120+30	24"	side slope NO-8			
N 97+20 E 122+00	27"	side slope NO-8			
N 96+75 E 122+38	23"	side slope NO-8			

BTW 10/29/93

LAW ENGINEERING, INC

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-29-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 97+10 E 120+32	20"	Downcomer 19, Slope 8			

Bryant B. Wilder
11/3/93

LAW ENGINEERING, INC

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-4-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 96+50 E 122+70	20"	Side Slope 7			
N 97+60 E 122+40	21"	Side Slope 7			
N 97+30 E 121+00	23"	Side Slope 7			
N 98+00 E 118+70	19"	Side Slope 7			
					BTBW

LAW ENGINE VG, INC

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-9-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 97+50 E 120+32	19"	Side Slope 7 Downcomer 19			
					DTW 11/15/93

LAW ENGINE VG, INC

RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-17-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N98+00 E124+20	20"	side slope 5 D-21			
N98+30 E123+50	21"	side slope 6 D-21			
N97+55 E122+70	19¼"	side slope 7 D-21			
					HSW 11/19/93

LAW ENGINEERING, INC

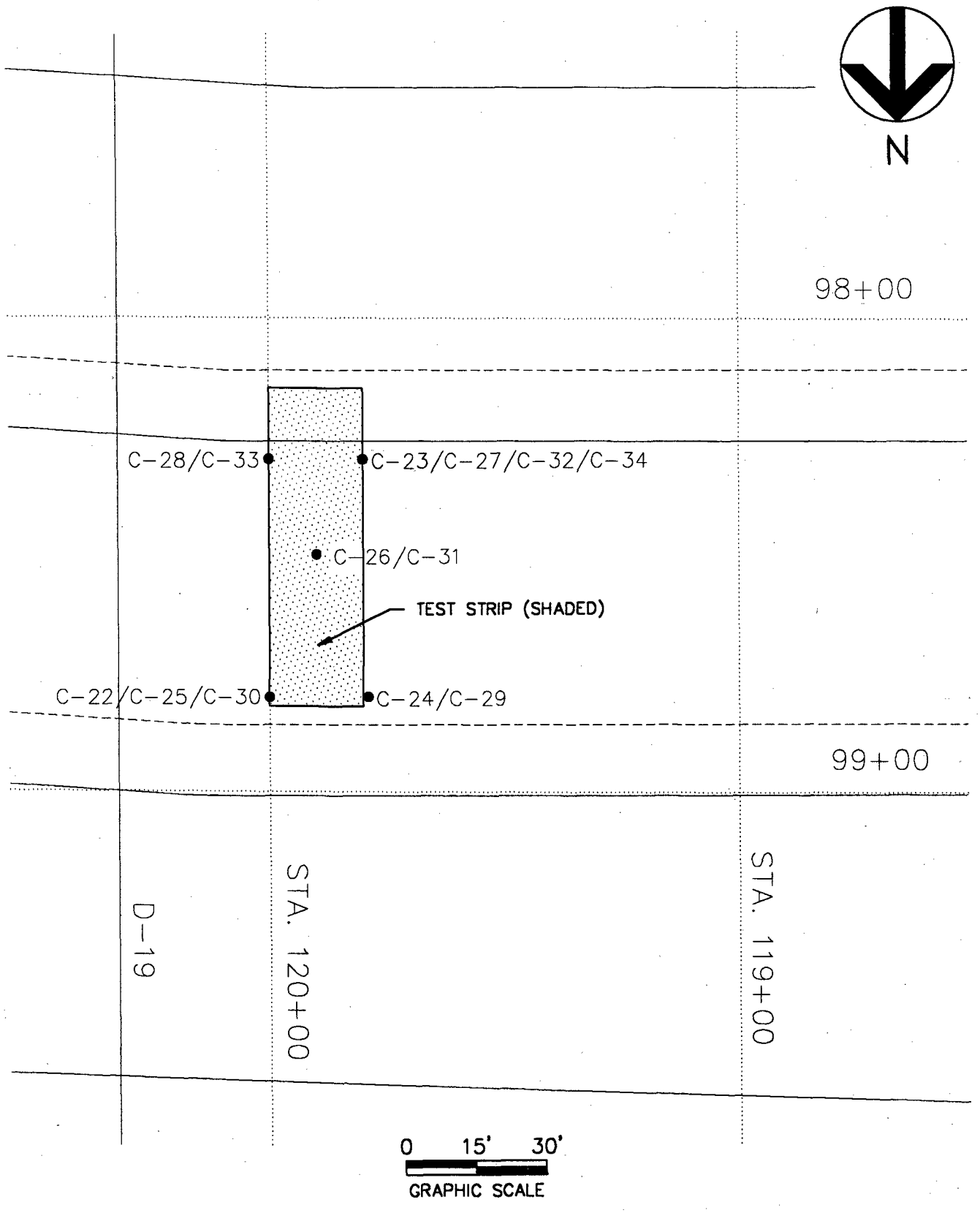
RECORD OF INITIAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 12-16-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 96+00 E 124+20	21"	Side Slope 5			
N 95+75 E 123+90	26"	Side Slope 6			
N 96+50 E 123+10	20"	Terrace 2			
					BTW 12/21/93

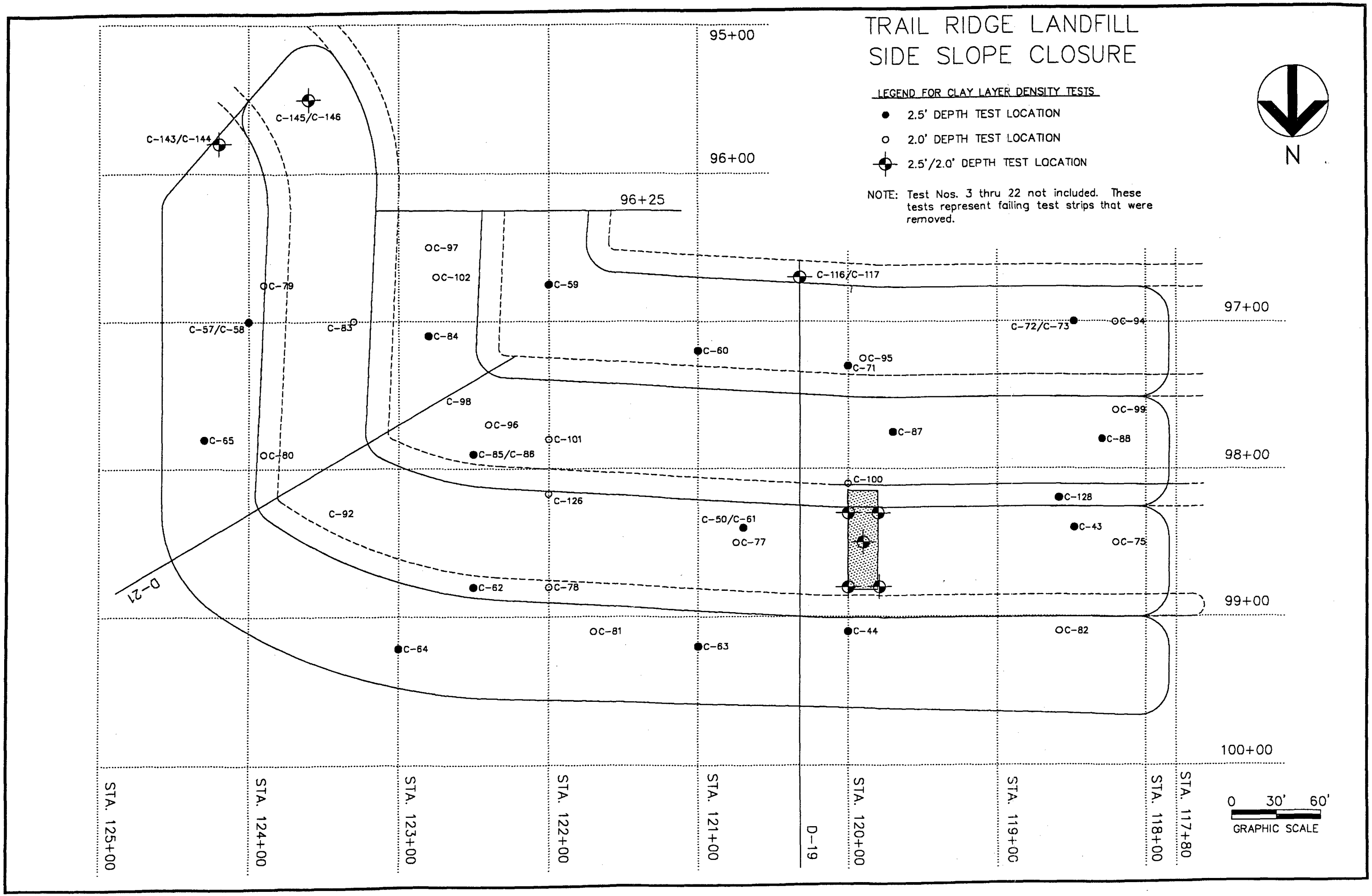
LAW ENGINEERING, INC



LEGEND

● CLAY LAYER FIELD DENSITY TEST LOCATION

TRAIL RIDGE LANDFILL
SIDE SLOPE CLOSURE


TRAIL RIDGE LANDFILL
SIDE SLOPE CLOSURE
LEGEND FOR CLAY LAYER DENSITY TESTS
2.5' DEPTH TEST LOCATION
2.0' DEPTH TEST LOCATION
2.5'/2.0' DEPTH TEST LOCATION
NOTE: Test Nos. 3 thru 22 not included. These tests represent failing test strips that were removed.
N
95+00
96+00
96+25
97+00
98+00
99+00
100+00
C-145/C-146
C-143/C-144
C-97
C-102
C-59
C-116/C-117
C-79
C-57/C-58
C-83
C-84
C-60
C-72/C-73
C-94
C-95
C-71
C-98
C-96
C-101
C-99
C-87
C-88
C-65
C-80
C-85/C-86
C-100
C-126
C-128
C-92
C-50/C-61
C-77
C-43
C-75
D-21
C-62
C-78
C-81
C-44
C-82
C-64
C-63
STA. 125+00
STA. 124+00
STA. 123+00
STA. 122+00
STA. 121+00
D-19
STA. 120+00
STA. 119+00
STA. 118+00
STA. 117+80
0 30' 60'
GRAPHIC SCALE

TRAIL RIDGE LANDFILL
SIDE SLOPE CLOSURE

LEGEND FOR CLAY LAYER PERMEABILITY TESTS

- ● 2.5' DEPTH TEST LOCATION
- ○ 2.0' DEPTH TEST LOCATION
- ⊕ 0.0' DEPTH TEST LOCATION (DOWNCOMER PIPE)
- ▲ 2.5'/2.0' DEPTH TEST LOCATION

N

95+00
96+00
96+25
97+00
98+00
99+00
100+00

C-37 C-49 C-50 C-38 C-42 C-54 C-43 C-57 C-56 C-55 C-58 C-41 C-47 C-53 C-51 C-45 C-60 C-59 C-27/C-32 C-26/C-31 C-52 C-25/C-30 C-44 C-36 TEST STRIP LOCATION C-39 C-46 C-24/C-29 C-23/C-28 C-34 C-40 C-48 D-21 D-19

STA. 125+00
STA. 124+00
STA. 123+00
STA. 122+00
STA. 121+00
STA. 120+00
STA. 119+00
STA. 118+00
STA. 117+80

0 30' 60'
GRAPHIC SCALE

COMPACTED CLAY LAYER

The clay material was obtained from off-site sources. Four off-site sources were considered. These sources were known as: Baker Pit, Bradford Pit, Nassau Pit and Alternate Source. The verification of permeability for these respective sources were reported as follows:

Baker Pit	Letter Dated October 11, 1993
Bradford Pit	Letter Dated October 11, 1993
Nassau Pit	Sample No. 33 Report Dated October 21, 1993
Alternate Source	Sample No. 35 Report Dated November 1, 1993

These documents are included in this section. Our field representative, Mr. Harlon Wiggins, routinely visited the source ultimately used, the Nassau Pit, in order to verify the continued homogeneity of the soil strata. Test strips were constructed sequentially for the first 3 sources as follows:

Test Strip	Borrow Source	Test Reports	Results
1	Baker Pit	Sample 3 - 12	Test Strip Not Accepted
2	Bradford Pit	Sample 13 - 22	Test Strip Not Accepted
3	Nassau Pit	Sample 23 - 32	Test Strip Accepted

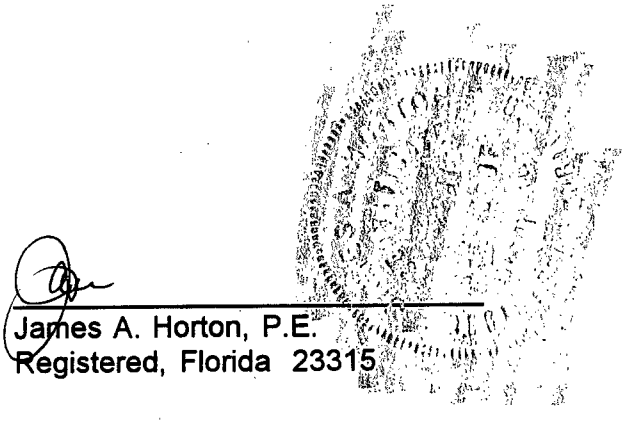
Each of the test strips was conducted in the same location. In the case of the first two test strips, the material was removed once the test strip was not accepted. Test locations for Test

Strip 3 are shown on the test strip drawing included in this section. The density test results associated with these locations did not meet the specified density. Accordingly, the second lift of Test Strip 3 was removed. The first lift was re-prepared and compacted as part of the initial lift of the surrounding clay layer.

The moisture content and percent fines testing and Atterberg limits determination results included in this section noted with on-site stockpile sample locations are the required test strip testing results for the respective three test strips. Those stockpile samples designated 13 through 17 are for test strip 3, the one accepted. Test strip 1 and 2 test locations are documented in our file but are not presented. No material from the alternate source was used.

The installed compacted clay layer testing locations are shown on the plan included in this section. The results of the thickness, hydraulic conductivity percent fines and Atterberg limits testing also included in this section. The results of the density testing 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 QA/QC Plan.



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

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
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.

November 2, 1993

Ms. Mary C. Nogas, P.E.
Waste Management Section
Northeast District
Department of Environmental Protection
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256

Reference: Trail Ridge Landfill
Permit No. SC16-184444
Side Slope Closure Units 5, 6, 7 & 8
ET&M No. E93-143

Dear Ms. Nogas:

By this letter and on behalf of Trail Ridge Landfill, Inc., we hereby notify the Department that the test strip for the referenced project has been completed and based upon the test strip results, the field density of the clay layer has been revised to "not less than 85% of Standard Proctor Density (ASTM D 698)".

Construction is continuing based on this revision. Should you have any questions regarding this revision to the QA/QC Plan for the closure of exterior side slope units, please contact me or Juanitta Clem.

Sincerely,

ENGLAND, THIMS & MILLER, INC.

Douglas C. Miller, P.E.
Vice President

attachment

cc: Greg Mathes
Jim Lukens
Chris Pearson

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES

October 11, 1993

Mr. Doug Miller
England Thims & Miller, Inc.
3131 St. Johns Bluff Road
Jacksonville, Florida 32216

Subject: Report of Material Pre-Qualification Evaluation
Compacted Clay Layer Material
Trailridge Landfill
Jacksonville, Florida
LAW Project No. 446-01631-13

Dear Mr. Miller:

Law Engineering, Inc. (LAW) has completed an evaluation of two samples of proposed compacted clay layer materials submitted for pre-qualification for the subject project. This material was submitted on September 9, 1993 by J.B. Coxwell Contracting, Inc. The two samples were designated from the Baker Pit and from the Bradford Pit. The evaluation was performed in accordance with the project specifications dated August 25, 1993.

Because the submitted materials did not have accompanying laboratory analysis data, we performed several verification tests on the material. The testing performed and the associated results are as follows:

BAKER PIT

Hydraulic Conductivity by ASTM D5084 - Constant Rate of Flow Method		6.2×10^{-8} cm/sec
Percent Fines by ASTM D1140		93%
Atterburg Limits by ASTM D4318	Liquid Limit	87
	Plastic Limit	30
	Plasticity Index	57

BRADFORD PIT

Hydraulic Conductivity by ASTM D5084 - Constant Rate of Flow Method		2.6×10^{-9} cm/sec
Percent Fines by ASTM D1140		38%

Atterburg Limits by ASTM D4318	Liquid Limit	54
	Plastic Limit	18
	Plasticity Index	36

Based on our review of these results, it appears that both materials meet the project specification requirements for use as a clay liner material.

We appreciate the opportunity to be of continuing services on this project. Please contact us if you have any questions.

Sincerely,

LAW ENGINEERING, INC.

Harlon Wiggins
Senior Engineering Technician

James A. Horton, P.E.
Branch Manager

HW/JAH:lmc

KEY TO PERMEABILITY ELEVATIONS

1st Lift of Clay	-2.5'
2nd Lift of Clay	-2.0'
Downcomer Clay Layer	-0'

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 9/24/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On September 24, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
3	93.6	5.5×10^{-5}	N98+30, E119+80, Elev. -2.5'
4	102.1	1.5×10^{-5}	N98+80, E119+82, Elev. -2.5'
5	104.7	7.5×10^{-5}	N98+80, E119+93, Elev. -2.5'
6	102.3	3.2×10^{-6}	N98+40, E119+91, Elev. -2.5'
7	100.5	2.2×10^{-5}	N98+60, E119+92, Elev. -2.5'
8	102.6	3.6×10^{-6}	N98+30, E119+92, Elev. -2.0'
9	89.0	1.1×10^{-5}	N98+80, E119+82, Elev. -2.0'
10	104.4	2.2×10^{-6}	N98+80, E119+93, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 9/27/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On September 27, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
11	81.8	2.1×10^{-5}	N98+40, E119+91, Elev. -2.0'
12	105.6	6.2×10^{-6}	N98+60, E119+82, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 10/6/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On October 1, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
13	106.0	6.8×10^{-7}	N98+80, E119+80, Elev. -2.5'
14	101.0	3.4×10^{-5}	N98+80, E120+00, Elev. -2.5'
15	103.0	1.1×10^{-6}	N98+50, E119+90, Elev. -2.5'
16	104.0	8.6×10^{-8}	N98+30, E120+00, Elev. -2.5'
17	98.5	1.6×10^{-5}	N98+30, E119+80, Elev. -2.5'
18	101.1	1.3×10^{-7}	N98+80, E119+80, Elev. -2.0'
19	97.0	1.6×10^{-5}	N98+80, E120+00, Elev. -2.0'
20	102.4	5.6×10^{-7}	N98+50, E119+90, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 10/6/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On October 5, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
21	98.0	2.8×10^{-6}	N98+30, E119+80, Elev. -2.0'
22	101.9	1.9×10^{-7}	N98+30, E120+00, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 10/11/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On October 10, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
23	69.9	3.5×10^{-9}	N98+80, E119+80, Elev. -2.5'
24	77.0	8.8×10^{-9}	N98+80, E120+00, Elev. -2.5'
25	76.6	7.8×10^{-9}	N98+50, E119+90, Elev. -2.5'
26	78.0	2.0×10^{-8}	N98+30, E119+80, Elev. -2.5'
27	76.9	7.3×10^{-9}	N98+30, E120+00, Elev. -2.5'
28	84.1	4.5×10^{-9}	N98+80, E119+80, Elev. -2.0'
29	83.0	8.9×10^{-8}	N98+80, E120+00, Elev. -2.0'
30	81.7	4.7×10^{-9}	N98+50, E119+90, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 10/12/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On October 12, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below:

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
31	82.0	5.1×10^{-9}	N98+30, E119+80, Elev. -2.0'
32	76.1	1.9×10^{-8}	N98+30, E120+00, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 10/21/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On October 21, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
33	90% Compaction	1.1×10^{-8}	Material Verification Clay Sample No. 3
34	78.2	5.4×10^{-9}	N98+75, E118+40, Elev. -2.5'

Respectfully submitted,
LAW ENGINEERING, INC.

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Chief Engineering Technician

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P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 11/1/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On November 1, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
35	90% Compaction	8.4×10^{-9}	Alternate Clay Source
36	73.4	2.6×10^{-9}	N98+60, E120+32, Elev.-0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

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P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 11/9/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On November 9, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
37	81.5	8.1×10^{-9}	N97+00, E124+00, Elev. -2.5' - Side Slope No. 6
38	78.8	1.1×10^{-8}	N97+00, E122+00, Elev. -2.5' - Side Slope No. 8
39	78.7	8.1×10^{-9}	N98+80, E122+50, Elev. -2.5' - Side Slope No. 6
40	79.9	8.5×10^{-9}	N99+20, E123+00, Elev. -2.5' - Side Slope No. 5
41	78.5	5.8×10^{-9}	N97+30, E124+30, Elev. -2.5' - Side Slope No. 5
42	73.6	1.4×10^{-8}	N97+20, E120+32, Elev. -0' - Downcomer 19, Side Slope No. 8
43	77.1	1.0×10^{-8}	N97+25, E119+30, Elev. -2.5' - Side Slope No. 8

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. DATE: 11/30/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On November 22, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
44	80.4	1.6×10^{-8}	N98+50, E118+20, Side Slope 6, Elev. -2.0'
45	83.4	1.1×10^{-8}	N98+00, E120+32, Side Slope 7, Downcmer 19, Elev. -0'
46	85.2	1.7×10^{-8}	N98+80, E122+00, Side Slope 6, Elev. -2.0'
47	87.8	2.2×10^{-8}	N97+90, E123+90, Side Slope 5, Elev. -2.0'
48	82.5	1.0×10^{-8}	N98+20, E118+75, Side Slope 5, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. DATE: 11/30/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On November 24, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
49	86.4	9.9×10^{-9}	N97+00, E123+30, Side Slope 6, Elev. -2.0'
50	81.5	1.6×10^{-8}	N97+10, E122+80, Side Slope 7, Elev. -2.5'
51	80.0	5.6×10^{-9}	N97+75, E119+70, Side Slope 7, Elev. -2.5'
52	87.0	5.5×10^{-9}	N98+00, E124+20, Side Slope 5 D-21, Elev. -0'
53	88.6	1.6×10^{-8}	N98+30, E123+50, Side Slope 6 D-21, Elev. -0'
54	82.3	5.5×10^{-9}	N97+00, E118+20, Side Slope 8, Elev. -2.0'
55	86.8	2.1×10^{-8}	N97+70, E122+40, Side Slope 8, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 12/3/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On November 28, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
56	82.6	1.6×10^{-8}	N97+50, E122+70, Side Slope 7 - D-21, Elev. -0'
57	83.9	2.2×10^{-8}	N97+60, E118+20, Side Slope 7, Elev. -2.0'
58	85.7	5.4×10^{-9}	N97+80, E122+00, Side Slope 7, Elev. -2.0'

Respectfully submitted,
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Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 12/16/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On December 15, 1993 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
59	81.7	5.5×10^{-9}	N98+17, E122+00, Elev. -2.0'

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF PERMEABILITY TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 1/12/94

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

On January 10, 1994 tests for coefficient of permeability were completed on soils obtained from the subject project. The tests were performed in substantial compliance with ASTM Standard D 5084. Test data and sample location are presented below.

SAMPLE NO.	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC)	LOCATION
60	83.7	4.9×10^{-9}	N98+20, E118+60, Elev. -2.5' - Terrace 2

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF PERCENT FINES TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 9/21/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	PERCENT WATER	PERCENT FINES	REMARKS
3	On site stockpile		20.6	44.72	
4	On site stockpile		18.9	38.10	
5	On site stockpile		23.2	52.15	
6	On site stockpile		18.8	40.98	
7	On site stockpile		18.4	38.91	

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING, INC.
P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF PERCENT FINES TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 9/29/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	PERCENT WATER	PERCENT FINES	REMARKS
8	On site stockpile		20.1	45.11	
9	On site stockpile		22.0	47.56	
10	On site stockpile		22.0	49.72	
11	On site stockpile		21.6	51.12	
12	On site stockpile		22.4	50.44	

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

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P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF PERCENT FINES TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 10/6/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	PERCENT WATER	PERCENT FINES	REMARKS
13	On site stockpile		43.7	92.42	
14	On site stockpile		41.4	95.70	
15	On site stockpile		37.4	89.09	
16	On site stockpile		40.1	91.62	
17	On site stockpile		38.0	89.33	

Respectfully submitted,
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P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF PERCENT FINES TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 10/18/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	PERCENT WATER	PERCENT FINES	REMARKS
18	N98+30, E118+30	-2.5'	33.7	88.04	
19	N98+92, E119+40	-2.5'	34.0	91.65	
20	N99+05, E118+60	-2.5'	33.1	91.65	
21	N99+25, E119+90	-2.5'	36.5	87.76	

Respectfully submitted,
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JACKSONVILLE, FLORIDA 32207
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RECORD OF PERCENT FINES TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 11/10/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	PERCENT WATER	PERCENT FINES	REMARKS
22	N96+75, E122+00	-2.5'	36.5	86.26	Side Slope No. 8
23	N97+20, E121+00	-2.5'	30.6	84.37	Side Slope No. 8
24	N97+00, E124+00	-2.5'	30.2	86.37	Side Slope No. 6
25	N97+30, E124+25	-2.5'	27.0	84.61	Side Slope No. 5
26	N98+40, E121+00	-2.5'	31.3	84.61	Side Slope No. 6
27	N98+80, E122+50	-2.5'	31.2	84.69	Side Slope No. 6
28	N99+20, E121+00	-2.5'	31.0	86.17	Side Slope No. 5
29	N99+20, E123+00	-2.5'	30.6	86.99	Side Slope No. 5
30	N97+80, E124+30	-2.5'	36.2	88.77	Side Slope No. 5

Respectfully submitted,
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RECORD OF PERCENT FINES TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 11/18/93

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	PERCENT WATER	PERCENT FINES	REMARKS
31	N96+90, E118+20	-2.5'	27.3	80.25	Side Slope No. 8
32	N97+30, E119+30	-2.5'	16.3	86.40	Side Slope No. 8
33	N98+50, E119+00	-2.0'	25.6	74.70	Side Slope No. 6
34	N98+80, E122+00	-2.0'	33.1	82.86	Side Slope No. 6
35	N99+10, E118+40	-2.0'	30.4	78.10	Side Slope No. 5
36	N99+30, E121+60	-2.0'	30.5	77.32	Side Slope No. 5
37	N98+40, E123+16	-2.0'	34.6	84.07	Side Slope No. 6
38	N97+30, E123+40	-2.0'	34.5	76.95	Side Slope No. 6
39	N97+40, E124+10	-2.0'	19.8	82.02	Side Slope No. 5
40	N99+20, E123+20	-2.0'	24.6	80.32	Side Slope No. 5
41	N99+10, E120+80	-2.0'	33.2	76.20	Side Slope No. 5
42	N99+20, E118+60	-2.0'	33.8	74.16	Side Slope No. 5
43	N96+50, E123+30	-2.0'	23.7	81.54	Side Slope No. 6

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

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P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF PERCENT FINES TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 1/6/94

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	PERCENT WATER	PERCENT FINES	REMARKS
44	N97+10, E122+80	-2.5'	35.2	86.88	Side Slope No. 7
45	N97+90, E122+50	-2.5'	29.7	81.04	Side Slope No. 7
46	N97+75, E119+70	-2.5'	31.0	78.59	Side Slope No. 7
47	N97+80, E118+30	-2.5'	31.0	80.81	Side Slope No. 7
48	N97+00, E118+20	-2.0'	33.7	82.84	Side Slope No. 8
49	N97+25, E119+90	-2.0'	35.1	83.72	Side Slope No. 8
50	N97+70, E122+40	-2.0'	33.0	89.88	Side Slope No. 8
51	N96+50, E122+80	-2.0'	34.3	87.26	Side Slope No. 8
52	N97+60, E118+20	-2.0'	34.5	87.50	Side Slope No. 7
53	N98+10, E120+00	-2.0'	31.3	84.48	Side Slope No. 7
54	N97+80, E122+00	-2.0'	25.3	84.32	Side Slope No. 7
55	N96+70, E122+75	-2.0'	24.9	82.85	Side Slope No. 7

Respectfully submitted,
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Chief Engineering Technician

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P.O. BOX 5728 - 3901 CARMICHAEL AVE.
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF ATTERBURG LIMITS TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 1/10/94

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
3	On site stockpile		50	22	28
4	On site stockpile		48	21	27
5	On site stockpile		58	22	36
6	On site stockpile		51	21	30
7	On site stockpile		46	20	26

Respectfully submitted,
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RECORD OF ATTERBURG LIMITS TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 1/10/94

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
8	On site stockpile		58	20	38
9	On site stockpile		53	20	33
10	On site stockpile		75	23	52
11	On site stockpile		69	24	45
12	On site stockpile		71	23	48

Respectfully submitted,
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Chief Engineering Technician

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(904) 396-5173

RECORD OF ATTERBURG LIMITS TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 1/10/94

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
13	On site stockpile		101	28	73
14	On site stockpile		104	28	76
15	On site stockpile		97	32	65
16	On site stockpile		112	27	85
17	On site stockpile		95	30	65

Respectfully submitted,
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Bryant B. Wildes

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Chief Engineering Technician

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RECORD OF ATTERBURG LIMITS TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 1/10/94

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
18	N98+30, E118+30	-2.5'	89	25	64
19	N98+92, E119+40	-2.5'			
20	N99+05, E118+60	-2.5'	87	25	62
21	N99+25, E119+90	-2.5'			

Respectfully submitted,
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Bryant B Wildes

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PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
22	N96+75, E122+00	-2.5'	98	29	69
23	N97+20, E121+00	-2.5'			
24	N97+00, E124+00	-2.5'	91	32	59
25	N97+30, E124+25	-2.5'			
26	N98+40, E121+00	-2.5'	93	31	62
27	N98+80, E122+50	-2.5'			
28	N99+20, E121+00	-2.5'	101	31	70
29	N99+20, E123+00	-2.5'			
30	N97+80, E124+30	-2.5'	99	30	69

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RECORD OF ATTERBURG LIMITS TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 1/10/94

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
31	N96+90, E118+20	-2.5'			
32	N97+30, E119+30	-2.5'	98	30	68
33	N98+50, E119+00	-2.0'			
34	N98+80, E122+00	-2.0'	91	28	63
35	N99+10, E118+40	-2.0'			
36	N99+30, E121+60	-2.0'	86	28	58
37	N98+40, E123+16	-2.0'			
38	N97+30, E123+40	-2.0'	92	28	64
39	N97+40, E124+10	-2.0'			
40	N99+20, E123+20	-2.0'	95	29	66
41	N99+10, E120+80	-2.0'			
42	N99+20, E118+60	-2.0'	98	30	68
43	N96+50, E123+30	-2.0'			

Respectfully submitted,
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RECORD OF ATTERBURG LIMITS TESTING

CLIENT: England, Thims & Miller, Inc. DATE: 1/10/94

PROJECT: Trailridge Landfill PROJECT NO: 446-01631-13
Side Slope Closure Phase I and II

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE ELEVATION	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
44	N97+10, E122+80	-2.5'	90	34	56
45	N97+90, E122+50	-2.5'			
46	N97+75, E119+70	-2.5'	95	31	64
47	N97+80, E118+30	-2.5'			
48	N97+00, E118+20	-2.0'	96	30	66
49	N97+25, E119+90	-2.0'			
50	N97+70, E122+40	-2.0'	92	32	60
51	N96+50, E122+80	-2.0'			
52	N97+60, E118+20	-2.0'	98	29	69
53	N98+10, E120+00	-2.0'			
54	N97+80, E122+00	-2.0'	92	33	59
55	N96+70, E122+75	-2.0'			

Respectfully submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 9-21-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+30 E 119+80	-2.5'	7	acceptable	Test strip
N 98+80 E 119+82	-2.5'	7	acceptable	Test strip
N 98+80 E 119+93	-2.5'	7 1/2	acceptable	test strip
N 98+40 E 119+91	-2.5'	9	acceptable	test strip
N 98+60 E 119+92	-2.5'	7	acceptable	test strip
N 98+30 E 119+80	-2.0'	13"	acceptable	test strip
N 98+80 E 119+82	-2.0'	13"	acceptable	test strip
N 98+80 E 119+93	-2.0'	12 1/2"	acceptable	test strip
N 98+40 E 119+91	-2.0'	13"	Acceptable	test strip
N 98+60 E 119+92	-2.0'	12 1/2"	acceptable	test strip

BBW 9/29/93

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 9-28-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+80 E 119+80	-2.5'	7"		
N 98+80 E 120+00	-2.5'	8"		
N 98+50 E 119+90	-2.5'	6"		
N 98+30 E 120+00	-2.5'	7"		
N 98+30 E 119+80	-2.5'	7"		
N 98+80 E 119+80	-2.0'	12		
N 98+80 E 120+00	-2.0'	12		
N 98+50 E 119+90	-2.0'	12		
N 98+30 E 119+80	-2.0'	13		
N 98+30 E 120+00	-2.0'	13		
				BBW 10/8/93

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-4-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+80 E 119+80	-2.5'	6 1/2"		
N 98+80 E 120+00	-2.5'	7"		
N 98+50 E 119+90	-2.5'	7"		
N 98+30 E 119+80	-2.5'	6"		
N 98+30 E 120+00	-2.5'	6 3/4"		
N 98+80 E 119+80	-2.0'	12 1/2"		
N 98+80 E 120+00	-2.0'	13"		
N 98+50 E 119+90	-2.0'	13"		
N 98+30 E 119+80	-2.0'	12"		
N 98+30 E 120+00	-2.0'	12 3/4"		
				BBW 10/20/93

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-14-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+30 E 118+30	-2.5'	6"		
N 98+92 E 119+40	-2.5'	6"		
N 99+05 E 118+60	-2.5'	6 3/4"		
N 99+25 E 119+90	-2.5'	6 1/2"		
		BBW 10/28/93		

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-20-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+60 E 120+32	-0'	13"		Down comer 19
				RBW 10/28/93

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-3-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+40 E 121+00	-2.5'	7"	side slope 6	
N 99+10 E 121+00	-2.5'	7"	side slope 5	
N 98+90 E 121+90	-2.5'	6 1/2"	side slope 6	
N 99+30 E 121+90	-2.5'	7"	side slope 5	
N 98+50 E 123+45	-2.5'	8"	side slope 6	
N 99+10 E 123+40	-2.5'	6 3/4"	side slope 5	
N 97+80 E 123+60	-2.5'	7"	side slope 6	
N 97+80 E 124+40	-2.5'	6 1/2"	side slope 5	
N 96+50 E 123+60	-2.5'	8 1/2"	side slope 6	
N 96+50 E 124+40	-2.5'	9"	side slope 5	

RBW 11/4/93

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-3-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 96+50 E 122+35	-2.5	8"		Side slope
N 97+20 E 122+00	-2.5	6 1/2"		Side slope
N 97+40 E 122+40	-2.5	6 3/4"		Side slope
N 97+00 E 120+10	-2.5	7"		Side slope

BBW
11/4/94

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-4-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N97+20 E120+32	-0'	13"		DOWNCOMER 19 Side Slope 8

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-5-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 96+90 E 119+50	-2.5'	7"		Side slope 8
N 97+42 E 119+00	-2.5'	7 1/2"		Side slope 8
N 97+00 E 118+70	-2.5'	6 3/4"		Side slope 8
N 97+35 E 118+10	-2.5'	7"		Side slope 8

BTBW

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-15-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+50 E 118+20	-2.0	13		Side Slope 6
N 98+90 E 120+00	-2.0	13 1/4		Side Slope 6
N 98+40 E 121+00	-2.0	12 1/2		Side Slope 6
N 98+50 E 122+70	-2.0	13		Side Slope 6

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-16-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 99+05 E 118+00	-2.0'	13"		Side slope 5
N 99+30 E 119+40	-2.0'	14"		side slope 5
N 99+15 E 120+60	-2.0'	12 3/4"		side slope 5
N 99+05 E 122+00	-2.0'	13 1/2"		side slope 5
N 99+20 E 123+50	-2.0'	13"		side slope 5
N 98+40 E 124+10	-2.0'	14"		side slope 5
N 98+20 E 124+15	-2.0'	13 3/4"		side slope 5
N 97+30 E 124+20	-2.0'	12 1/2"		side slope 5
N 98+30 E 118+00	-2.0'	13 1/4"		side slope 6
N 98+60 E 118+80	-2.0'	13"		side slope 6
N 98+90 E 119+60	-2.0'	12 1/2"		side slope 6

BTW 11/19/93

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-16-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+70 E 120+40	-2.0'	14"		side slope 6
N 98+30 E 121+20	-2.0'	13 1/2"		side slope 6
N 98+60 E 122+00	-2.0'	12 3/4"		side slope 6
N 98+70 E 122+80	-2.0'	12 3/4"		side slope 6
N 98+40 E 123+60	-2.0'	13 1/4"		side slope 6
N 98+20 E 123+90	-2.0'	13"		side slope 6
N 98+00 E 123+90	-2.0'	14"		side slope 6
N 97+00 E 123+50	-2.0'	14"		side slope 6
N 96+50 E 123+20	-2.0'	13 1/2"		side slope 6
				11/19/93

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-17-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+00 E 124+20	-0'	14"		
N 98+30 E 123+50	-0'	13"		Side slope 5 D-21
				Side slope 6 D-21

11/19/93

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-18-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 97+00 E 118+00	-2.0'	13"		side slope 8
N 97+25 E 118+60	-2.0'	14"		Side slope 8
N 97+50 E 119+20	-2.0'	14"		Side slope 8
N 97+30 E 120+00	-2.0'	13"		Side slope 8
N 97+10 E 120+80	-2.0'	12 3/4"		Side slope 8
N 97+40 E 121+60	-2.0'	13 1/2"		Side slope 8
N 97+70 E 122+40	-2.0'	13"		Side slope 8
N 96+50 E 122+80	-2.0'	14"		Side slope 8

RBW 11/19/93

LAW ENGINEER: C. INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-20-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 97+55 E 118+20	-2.0'	13"		side slope 7
N 97+70 E 119+00	-2.0'	14"		side slope 7
N 98+00 E 119+80	-2.0'	13 1/2"		side slope 7
N 98+15 E 120+60	-2.0'	12 3/4"		side slope 7
N 97+80 E 121+20	-2.0'	13"		side slope 7
N 97+60 E 122+00	-2.0'	13 1/2"		side slope 7
N 97+20 E 122+60	-2.0'	13 1/4"		side slope 7
N 96+50 E 122+40	-2.0'	12 1/2"		side slope 7

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-29-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 99+10 E 120+32	-0'	13"		Side Slope 5 Downcomer 19
N 98+80 E 120+32	-0'	15"		Side Slope 6 Downcomer 19
N 98+40 E 120+32	-0'	14"		Side Slope 6 Downcomer 19
N 98+30 E 124+10	-0'	13 1/2"		Side Slope 5 Downcomer 21
N 98+10 E 123+65	-0'	12 3/4"		Side Slope 6 Downcomer 21
N 98+90 E 123+30	-0'	14"		Side Slope 6 Downcomer 21
				BBW

12-1-93

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 12-3-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N96+70 E120+32	-0'	13"		Terrace 4 Down comer 19

BBW 12/7/93

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 12-16-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+20 E 118+00	-2.0	12½"		Terrace 2
N 98+20 121+20	-2.0	13"		Terrace 2

BTW
12/21/93

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 12-16-93

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 98+10 E 123+00	-0'	13"		D 21 side slope 7
N 97+60 E 122+68	-0'	14"		D 21 side slope 7
N 98+40 E 120+32	-0'	13 1/2"		D 19 side slope 7
N 97+70 E 120+32	-0'	12 3/4"		D 19 side slope 7
N 97+30 E 120+32	-0'	15"		D 19 side slope 8
N 96+80 E 120+32	-0'	14 1/4"		D 19 side slope 8
				RBW 1/4/94

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 1-11-94

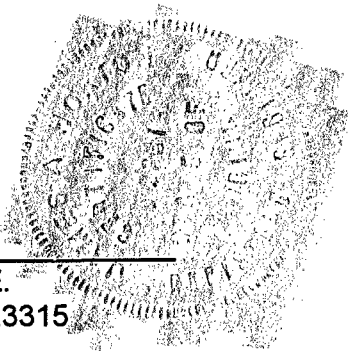
LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 95+80 E 124+20	-2.5'	6 1/2"		side slope 5
N 95+50 E 123+60	-2.5'	6 3/4"		side slope 6
N 95+80 E 124+20	-2.0'	12 1/2"		side slope 5
N 95+50 E 123+60	-2.0'	13"		side slope 6
				BBW 2/7/94

LAW ENGINEERING, INC

TOP SOIL

The top soil material came from a location designated as the Crystal Springs Pit. The test report dated October 18, 1993, was the pre-qualification verification of material properties. The on-site testing locations are shown on the plan included in this section. The results of the thickness measurements and organic content and pH are also included in this section. The density test results 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 QA/QC Plan.



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

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Soil Testing

Client: England, Thims & Miller, Inc.

Date: 10/18/93

Project: Trailridge Landfill
Side Slope Closure Phase I & II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed testing of soil samples obtained by our field representative. The results are as follows:

SAMPLE NO.	PH	REQUIRED PH	PERCENT ORGANICS	REQUIRED PERCENT ORGANICS
1	5.4	5.0 to 7.0	3.40	1.5 to 10.0

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes, Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Soil Testing

Client: England, Thims & Miller, Inc.

Date: 12/2/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed percent organic and pH testing of topsoil samples obtained by our field representative. The results are outline below.

SAMPLE NO.	LOCATION	PH	PERCENT ORGANIC
1	Slope 5 - Sta. E118+30, N99+15	6.22	2.96
2	Slope 6 - Sta. E119+20, N98+40	6.10	2.87
3	Slope 6 - Sta. E120+80, N98+60	5.97	3.17
4	Slope 6 - Sta. E122+50, N98+80	6.12	3.13

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728—3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Topsoil Testing

Client: England Thims & Miller, Inc.

Date: 12/10/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed pH and percent organic testing of topsoil samples obtained by our field representative. The results are outlined below.

SAMPLE NO.	LOCATION	PH	PERCENT ORGANICS
5	Side Slope 5, Station N99+15, E121+00	5.21	3.45
6	Side Slope 5, Station N99+20, E123+80	5.24	3.38
7	Side Slope 5, Station N97+00, E124+40	4.31	4.31
8	Side Slope 5, Station N98+00, E124+15	4.42	4.09
9	Side Slope 6, Station N97+80, E123+70	5.01	3.61
10	Side Slope 6, Station N97+00, E123+30	5.00	3.35

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Soil Testing

Client: England, Thims & Miller, Inc.

Date: 12/14/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed soil pH and percent organic testing of samples obtained by our field representative on December 10, 1993. The results, which are outlined below, include pH retests for samples 7 and 8, which originally did not meet the project specifications.

SAMPLE NO.	LOCATION	PH	PERCENT ORGANICS
7A	Retest No. 7	5.01	N/P
8A	Retest No. 8	5.14	N/P
11	Sta. N97+00, E118+00	5.06	2.97
12	Sta. N97+30, E119+60	5.12	3.12
13	Sta. N96+80, E121+40	5.14	3.89
14	Sta. N96+75, E122+00	5.34	4.29

N/P - Not Performed

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728—3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Soil Testing

Client: England, Thims & Miller, Inc.

Date: 1/12/94

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed pH and percent organics testing of topsoil samples obtained by our representative in the field. The results are outlined below.

SAMPLE NO.	LOCATION	PH	PERCENT ORGANICS
15	Side Slope 7 Sta. N97+70, E118+00	5.17	3.17
16	Side Slope 7 Sta. N98+00, E120+00	5.26	2.68
17	Side Slope 7 Sta. N97+80, E121+60	5.66	3.54
18	Side Slope 7 Sta. 98+00, E122+70	5.09	2.18
19	Side Slope 7 Sta. 97+00, E122+80	5.17	3.04

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

RECORD OF FINAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-23-93

LOCATION	THICKNESS	REMARKS
N 98+50 E 118+00	24"	Side slope 6
N 99+20 E 118+90	26"	Side slope 5

LOCATION	THICKNESS	REMARKS

12-1-93 LAW ENGINEE G, INC

RECORD OF FINAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-30-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 98+60 E 120+80	24"	Side Slope 6			
N 98+80 E 122+50	22 3/4"	Side Slope 6			
				BBW	

12-1-93

LAW ENGINEERING, INC

RECORD OF FINAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 12-2-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 99+15 E 121+00	23"	side slope 5			
N 98+20 E 123+80	24"	side slope 5			
					BRW 12/7/93

LAW ENGINEE IG, INC

RECORD OF FINAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 12-7-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N97+00 E124+40	24"	side slope 5			
N98+00 E124+15	22"	side slope 5			
N97+80 E123+70	22 1/4"	side slope 6			
N97+00 E123+30	23 1/2"	side slope 6			
					BTW 12/8/93

LAW ENGINEE IG, INC

RECORD OF FINAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 12-22-93

LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N 97+70 E 118+00	26"	Side Slope 7			
N 98+10 E 119+50	24"	Side Slope 7			
N 97+10 E 118+00	24 1/2"	Side Slope 8			
N 97+40 E 118+00	27"	Side Slope 8			
					RBW 1/4/94

LAW ENGINEE[illegible]G, INC

RECORD OF FINAL COVER THICKNESS

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 1-11-94

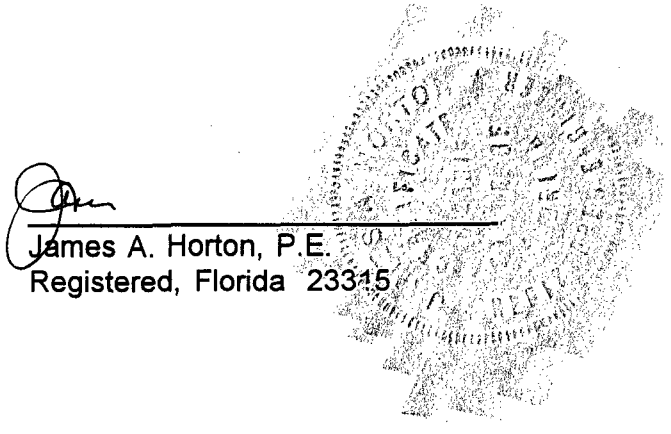
LOCATION	THICKNESS	REMARKS	LOCATION	THICKNESS	REMARKS
N98+20 E121+50	26"	side slope 7			
N97+20 E121+50	27"	side slope 8			
N97+00 E122+00	24"	side slope 8			
N96+70 E122+70	26"	side slope 7			
N97+70 E122+80	23 1/2"	side slope 7			
N95+50 E123+60	27 1/4"	side slope 6			
N95+80 E124+20	25"	side slope 5			
					BDW 2/7/94

LAW ENGINEE IG, INC

DOWNCOMER PIPES

The clay material used was the same as that noted in the compacted clay layer section. The testing locations and results are also included in that section. Similarly, the results of the initial cover (clay layer subgrade) testing is included in the Initial Cover 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 QA/QC Plan.

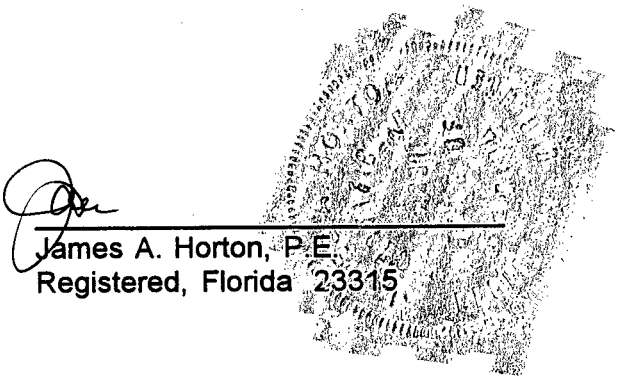


James A. Horton, P.E.
Registered, Florida 23315

UNDERDRAIN FILTER SAND

The filter sand was obtained at an off-site borrow source in Edgar, Florida. The report included in this section dated November 18, 1993, was the pre-qualification verification of material properties. The installation verification testing results are included in this section. The locations of the testing are shown on the reports of test results. Chain of custody truck tickets are also included.

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 QA/QC Plan.



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

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Soil Testing

Client: England, Thims & Miller, Inc.

Date: 11/18/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed testing of a soil sample obtained by our field representative on November 16, 1993. The maximum dry density and optimum moisture of the sample was determined, also the coefficient of permeability of the sample at 100 percent relative compaction was determined. Additionally, a sieve analysis was performed to determine the effective grain size. The results are outlined below.

SAMPLE NO.	MAXIMUM DRY DENSITY (LBS/FT^3)	OPTIMUM MOISTURE (PERCENT)	COEFFICIENT OF PERMEABILITY (CM/SEC)	REQUIRED MINIMUM COEFFICIENT OF PERMEABILITY (CM/SEC)	EFFECTIVE GRAIN SIZE (MM)	REQUIRED EFFECTIVE GRAIN SIZE (MM)
1	108.6	12.9	1.9×10^{-2}	1.0×10^{-3}	.2532	.2 - .5

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Filter Bed Sand Permeability Testing

Client: England, Thims & Miller, Inc.

Date: 11/26/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, a representative of Law Engineering, Inc. (LAW) has completed testing of a sand sample delivered to our laboratory by our field representative on November 19, 1993. The results of the testing are outlined below.

TEST NO.	LOCATION	PERCENT COMPACTION OF RELATIVE DENSITY	COEFFICIENT OF PERMEABILITY (CM/SEC)
Perm #1	Station 119+70 Terrace No. 1	100%	2.1×10^{-2}

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Filter Bed Sand Permeability Testing

Client: England, Thims & Miller, Inc.

Date: 11/30/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed constant head permeability testing of a filter bed sand sample obtained by our field representative on November 29, 1993. The results are outlined below.

SAMPLE NO.	LOCATION	PERCENT RELATIVE DENSITY	COEFFICIENT OF PERMEABILITY (CM/SEC)
2	Terrace No. 1 Station E121+30	100%	2.1×10^{-2}

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Filter Bed Sand Permeability Testing

Client: England, Thims & Miller, Inc.

Date: 12/1/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed constant head permeability testing of a filter bed sand sample obtained by our field representative on November 30, 1993. The results are outlined below.

SAMPLE NO.	LOCATION	PERCENT RELATIVE DENSITY	COEFFICIENT OF PERMEABILITY (CM/SEC)
3	Terrace No. 1 Station N97+00	100%	4.7×10^{-2}

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Filter Bed Sand Permeability Testing

Client: England, Thims & Miller, Inc. Date: 12/2/93

Project: Trailridge Side Slope
Closure Phase I and II Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed constant head permeability testing of the filter bed sand samples obtained by our field representative on December 1, 1993. The results are outline below.

SAMPLE NO.	LOCATION	PERCENT RELATIVE DENSITY	COEFFICIENT OF PERMEABILITY (CM/SEC)
Perm. 4	Terrace 3, Sta. E118+60	100%	3.1×10^{-2}
Perm. 5	Terrace 3, Sta. E121+30	100%	2.3×10^{-2}

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728—3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Filter Bed Sand Permeability Testing

Client: England, Thims & Miller, Inc.

Date: 12/14/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed constant head permeability testing of the filter bed sand samples obtained by our field representative on December 6, 1993. The results are outlined below.

SAMPLE NO.	LOCATION	PERCENT RELATIVE DENSITY	COEFFICIENT OF PERMEABILITY (CM/SEC)
6	Sta. E122+35, N96+75	100	1.6×10^{-2}

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

P.O. Box 5728—3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Filter Bed Sand Permeability Testing

Client: England, Thims & Miller, Inc.

Date: 12/30/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

As requested, Law Engineering, Inc. (LAW) has completed constant head permeability testing of the filter bed sand samples obtained by our field representative on December 18, 1993. The results are outlined below.

SAMPLE NO.	LOCATION	PERCENT RELATIVE DENSITY	COEFFICIENT OF PERMEABILITY (CM/SEC)
7	Terrace #2 Sta. N98+18, E118+90	100	3.6×10^{-2}
8	Terrace #2 Sta. N97+90, E122+30	100	3.4×10^{-2}
9	Terrace #2 Sta. N97+00, E123+10	100	3.5×10^{-2}

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 11-16 1993

Name Mid-Fla. Hauling

Address JB Caswell Trail Fidge

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
1	T/C FwA		73 230
			23 000
	MF 5219		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25415 Rec'd by

GS-46 GREENE'S PRINTING INC. - OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 11-18 19 93

Name Trail Ridge Landfill

Address

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
1	T/L FWA		73 280
			23 000
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25452 Rec'd by [signature] (3)

GS-46 GREENE'S PRINTING INC. - OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 11-18-93 19 93

Name Trail Ridge Landfill

Address Stark FL MF552

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
1	T/L FWA		73 280
			23 000
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25451 Rec'd by [signature] (2)

GS-46 GREENE'S PRINTING INC. - OCALA, FL 32670 14007-AJ

THE Feldspar

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 11-19-? 19 93

Name Mid florida Haulers

Address MF 555

SOLD BY	CASH	C O D	CHARGE	ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
1	T/L FWA		23 230
	—		23 020
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25464 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 11-19 19 93

Name J B Coswell

Address MF 549

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
1	T/L FWA		23 280
			23 000
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25466 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 4-23 19 93

Name Mid Fla Hauling

Address

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE RETD	PAID OUT
			✓			

QUAN	DESCRIPTION	PRICE	AMOUNT
		73	010
1	FWA	23	000
	555		
	Thanks		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25492 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 4-23 19 93

Name Mid Fla Hauling

Address

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE RETD	PAID OUT
			✓			

QUAN	DESCRIPTION	PRICE	AMOUNT
		73	000
1	FWA	23	000
	Thank You		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25493 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12-1 19 93
Name M.J Florida
Address

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE RETD	PAID OUT
			✓			

QUAN	DESCRIPTION	PRICE	AMOUNT
			73280
	1T/L FWA		23000
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25562 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12-1 19 93
Name M.J Florida (J B Cosnell)
Address

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE RETD	PAID OUT
			✓			

QUAN	DESCRIPTION	PRICE	AMOUNT
			73280
	1T/L FWA		23000
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25554 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12·15 1993

Name Mid Florida Hauling

Address (JB Coswell)

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
			73280
	1 T/L FWA		23000
	#547		
	Jas 9322		
	[signature]		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25762 Rec'd by [signature]

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12·15 1993

Name Mid Florida Hauling

Address (JB Coswell)

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
			73280
	1 T/L FWA		23360
	#546		
	Jas 9322		
	[signature]		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25764 Rec'd by [signature]

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12·15 1993

Name Mid Florida Hauling

Address (JB Coswell)

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
			73280
	1 T/L FWA		23140
	#555		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25763 Rec'd by [signature]

GS-46

THE Feldspar

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12·17 19 93
Name Mid Florida Hauling
Address Trial Ridge Land Fill

SOLD BY	CASH	C.O.D.	CHARGE / ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
			73280
	1T/L FWA		23140
	JOB #9322		
	Thank You!		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25803 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 · 14007-AJ

THE Feldspar

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12·17 19 93
Name Mid Florida Hauling
Address Trial Ridge Land Fill

SOLD BY	CASH	C.O.D.	CHARGE / ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
			73280
	1T/L FWA		23500
	Thank You!		
	JOB #9322		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25800 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 · 14007-AJ

THE Feldspar

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12·17 19 93
Name Mid Florida Hauling
Address Trial Ridge Land Fill

SOLD BY	CASH	C.O.D.	CHARGE / ON ACCT	MDSE RETD	PAID OUT

QUAN	DESCRIPTION	PRICE	AMOUNT
			73280
	1T/L FWA		23000
	Thank You!		
	JOB #9322		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

25799 Rec'd by

THE Feldspar

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12-17-1993
Name Mid Florida Hauling
Address Trial Ride Landfill

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE RETD	PAID OUT	
			✓				

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73280
1 T/L	Fuel		23000
	#549		
	Thank You!		
	TAX		
	TOTAL		

25798 Rec'd by

GS-46 GREENE'S PRINTING INC. - OCALA, FL 32670 14007-AJ

THE Feldspar

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 12-17-1993
Name Mid Florida Hauling
Address Trial Ride Landfill

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE RETD	PAID OUT	
			✓				

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73280
1 T/L	Fuel		23500
	Thank You!		
	TAX		
	TOTAL		

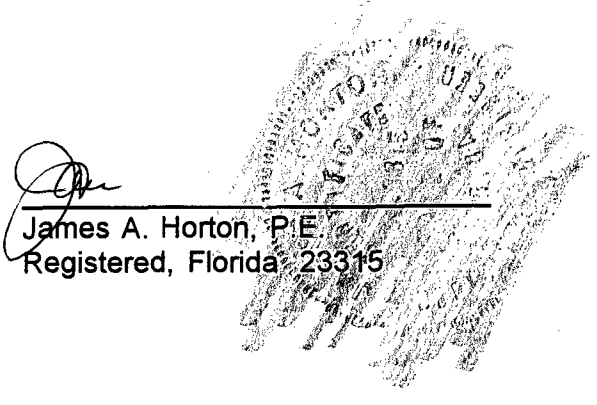
25796 Rec'd by

GS-46 GREENE'S PRINTING INC. OCALA, FL 32670 14007-AJ

GAS WELL BACKFILL

The gradation of the gravel for the gas well is included in this section. We note that the report dated October 4, 1993, contains two gradations. These gradations were for the same sample with a different range of sieve sizes. The gradation designated ASTM 448 - Grading No. 24 are the sieve sizes equivalent to the required FDOT No. 2 Course Aggregate. Chain of custody truck tickets are also included. The certification from the supplier for the bentonite is also included. A log of the gas well is also provided.

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 QA/QC Plan.



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

LAW ENGINEERING

P.O. Box 5728—3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Coarse Aggregate Gradation

Client: England, Thims & Miller, Inc.

Date: 10/4/93

Project: Trailridge Side Slope
Closure Phase I and II

Project No: 446-01631-13

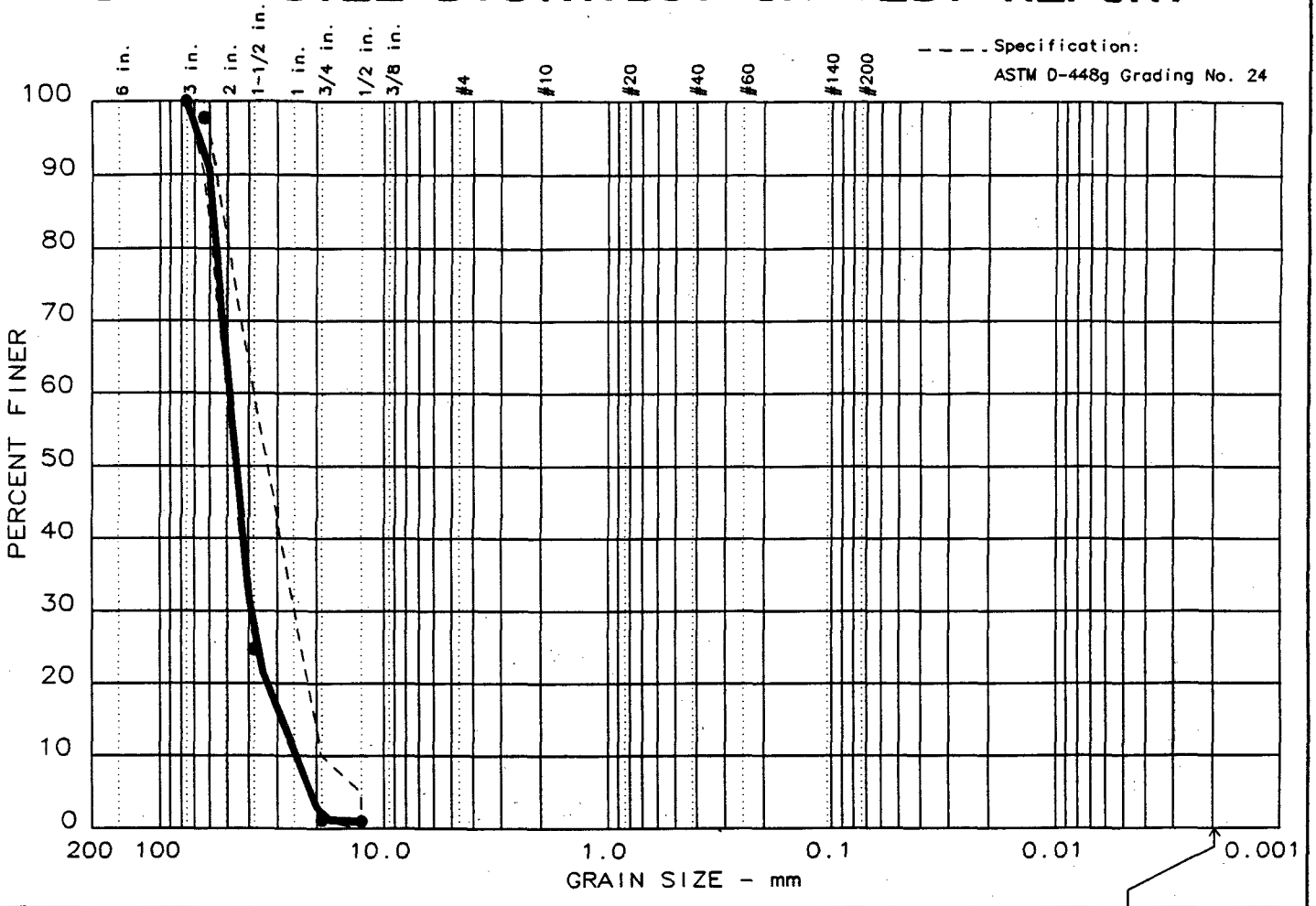
As requested, Law Engineering, Inc. (LAW) has completed gradation testing of coarse aggregate sample No. 1. The sample was originally to be tested in accordance with ASTM D-448, Grading No. 24, and was then changed to ASTM D-448, Grading No. 2. Both curves are attached.

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes, Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	100.0	0.0		

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			58.01	48.75	45.45	39.491	28.5759	24.6037	1.30	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● River Rock	GP	A-1-a

Project No.: 446-01631-13
Project: Trailridge Landfill
● Location: Coarse Aggregrate Gradation

Date: 9-29-93

Remarks:

Sample No. 1

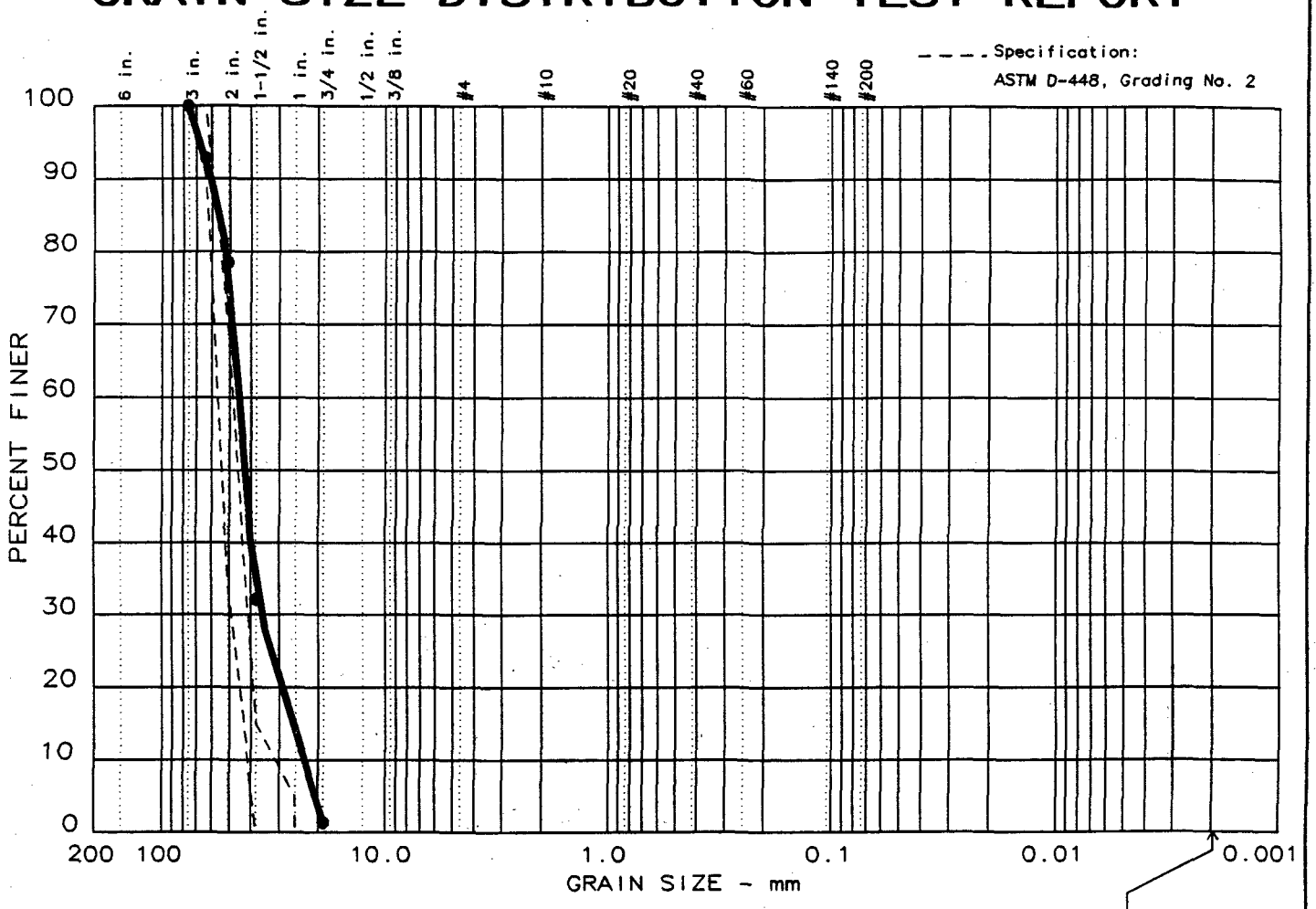
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING, INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	100.0	0.0		

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			55.53	45.29	42.56	36.224	25.8523	23.0409	1.26	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● River Rock	GP	A-1-a

Project No.: 446-01631-13
Project: Trailridge Landfill
● Location: Coarse Aggregrate Gradation

Date: 9-30-93

Remarks:

Sample No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING, INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

CONRAD YELVINGTON
DISTRIBUTORS, INC.

October 28, 1993

Griffin Remediation
Attn: David
FAX 813-985-7272

RE: Trail Ridge Landfill

Dear David:

Following are the gradations and specifications on #24 tan river gravel which we propose to furnish the above referenced job.

SIEVE SIZE	PERCENT PASSING	ASTM #24
3"	100	100
2 1/2"	91	90-100
2"	---	---
1 1/2"	50.5	25-60
3/4"	8	0-10
1/2"	2	0-5

Specific Gravity (SSD):	2.60
LA Abrasion:	20%
Absorption:	1.0%
Soundness:	0.7%
Weight per c.y.:	2600 lbs.

If any additional information is needed, please contact us.

Sincerely,

Gary Yelvington
Vice President

GY:km

WYO-BEN, INC.

December 15, 1993

Telefax: 813/685-5089

Mr. Mike Sherraden
Griffin Remediation
Tampa, FL

Dear Mike:

In reference to our conversation today, I am submitting the following for your review and consideration. Wyo-Ben, Inc. is the manufacturer of NATURALGEL® powdered bentonite. When this product is properly dispersed in an aqueous slurry, as per ASTM D1140, it will be composed of particles 50% or more of which will pass a 200 mesh sieve. In addition, we state that NATURALGEL® is basically inert in the presence of methane, carbon dioxide and the combination of both compounds.

Please advise us if you need any additional backup data.

Best Regards,

Pat Kelly

Pat Kelly
Technical Sales Engineers

PK/jdm
pk\griffin2

3044 Hesper Road•P.O. Box 1979•Billings, Montana 59103 U.S.A.•406-652-6351•Telex 31-9430•Telefax 406-656-0748

J. B. COXWELL CONTRACTING, INC.
RECEIVED
JAN 1 8 1994

TO: Griffen Rem. FROM: Conrad Yelvington DATE: 1 1 12 94
FAX #: (813) 685 5089 (904) 757 5575 PHONE #: PAGES INCLUDING THIS PAGE: 1

YELVINGTON
DISTRIBUTORS, INC.
One Stop Aggregate Source

CORPORATE OFFICE
DAYTONA BEACH (904) 767-5500 800 Big Tree Rd.
DAYTONA BEACH (904) 257-3154 348 N. Segrave Ave.
TAMPA (813) 621-0074 4800 Cone Rd.
ORLANDO (407) 423-7626 410 West Kaley St.
FT. LAUDERDALE (305) 975-0201 708 W. McNab Rd.
JACKSONVILLE (904) 358-6740 2025 Dennis St.
DEBARY (407) 668-1100 311 Benson Junction Rd.
MIAMI (305) 386-9713 5800 S.W. 177th Ave.
EATON PARK 3770 Main Ave.

TICKET NUMBER 459316

SOLD TO:
GRIFFIS REMENDATION
7810 PROFESSIONAL PLACE
TAMPA FL 33637

DELIVER TO:
TRAIL RIDGE LANDFILL
5110 US 301
JACKSONVILLE, FLA
16

SPECIAL INSTRUCTIONS:

DATE	CUST. ACCT. NO.	CUST. P.O. NO. OR JOB	TRUCK I.D.	CYD NO.
09/28/93	413527	87930	JTS/JT42	459316
PRODUCT CODE	PRODUCT DESCRIPTION		TIME IN	TIME OUT
6420 /TN	#2 TAN RIVER GRAVEL			11:17 /D
COAL CHUTE DEL			UNIT PRICE	
REQUESTED	ARR. TIME		NET PRICE	GROSS WT.
CARRIER	START TIME		TAX	TARE WT.
DRIVER	FINISH TIME		TOTAL	NET WT. 27,380
CERTIFIED BY	MEMO		Load No: 1	JOB ACCUM.

HAVE A WONDERFULLY DAY!
BE HAPPY AND SMILE!

DRIVER [signature] DRIVER COPY RECEIVED BY [signature]

RECEIVED ON THE REVERSE SIDE OF THIS TICKET BY HIS OR HER SIGNATURE OR BY THE SIGNATURE OF HIS OR HER AGENT.

EXIBIT B

LANDFILL GAS WELL CONSTRUCTION LOG

Landfill Name Trailridge Well No. 1

Location

Date September 28, 1998 Installer Griffin Remediation Services

DIMENSIONS:

a. Diameter of well (ft) 2
b. Well casing interval (ft) 49.5
c. Diameter of lower well casing (in) 8
d. Diameter of upper well casing (in) 8
e. Total depth of well (ft) 50
f. Slotted interval of well casing (ft) 40
from 96 ft to 49.5 ft.

h. Permeable material interval (ft) 44.5'
i. Impermeable plug interval (ft) 1'

k. Backfill material interval (ft) 4.5'
l. Length of pipe above ground (ft) 10.5'

MATERIALS:

Permeable material FDOT No. 2 River Rock

Impermeable material Enviro plug Bentonite

Backfill material 1' Clean Sand
3.5" General Backfill @ Clean Top Soil

Casing material Sch 80 CPVC

CONSTRUCTION:

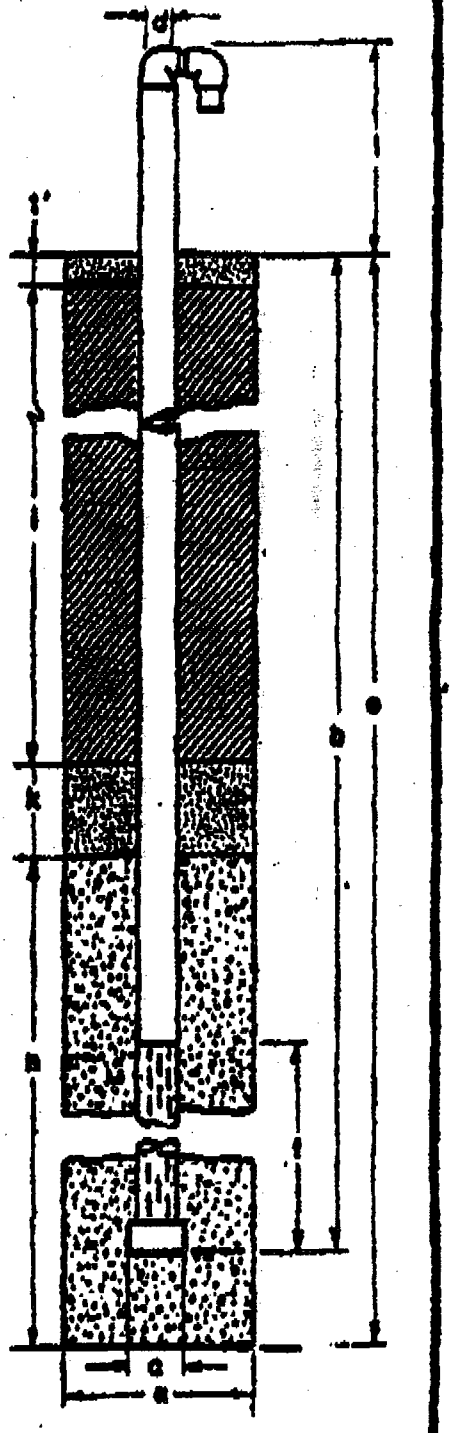
Method of drilling well Caldwell 200
bucket Auger

Method of placing fill material End loader

Method of placing casing Drill Rig

Problems encountered None

(Use back side for additional comments)



TRAIL RIDGE LANDFILL
SIDE SLOPE CLOSURE
CONSTRUCTION PHOTOGRAPHS

FINAL GRADING OF INITIAL COVER

CONSTRUCTION OF TEST STRIP

PLACEMENT OF CLAY LAYER

INSTALLATION OF DOWNCOMER PIPES

INSTALLATION OF UNDERDRAINS

PLACEMENT OF TOP SOIL

PLACEMENT OF SOD

APPENDIX A

KEY TO DENSITY TEST ELEVATIONS

Initial Cover	-3.0'
1st Lift of Clay	-2.5'
2nd Lift of Clay	-2.0'
Topsoil	-1.0'
Topsoil	-0'
Initial Cover For Downcomer Pipe	-1.0'
Downcomer Clay Layer	-0'

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 09/20/93							
1	13.6	112.3	3	91	90	3	-3'
2	10.6	112.7	3	91	90	3	-3'

TEST LOCATIONS:

1 Side slope unit #6 - N98+30, E118+00
2 Side slope unit #6 - N98+80, E120+00

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
3	124.0	11.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

Bryant B. Wildes

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
			Tests Performed on 09/21/93				
3	22.7	94.8	5	88 <<	90	3	-2.5'
4	22.8	91.6	5	85 <<	90	3	-2.5'
5	22.8	97.3	5	90	90	3	-2.5'
6	24.5	97.4	5	90	90	3	-2.5'
7	22.9	97.1	5	90	90	3	-2.5'
8	24.6	93.3	5	87 <<	90	3	-2.0'
9	24.3	94.5	5	88 <<	90	3	-2.0'
10	23.5	95.8	5	89 <<	90	3	-2.0'
11	23.6	90.9	5	84 <<	90	3	-2.0'
12	24.4	96.9	5	90	90	3	-2.0'

TEST LOCATIONS:

3	Side slope unit #6 - N98+30, E119+80
4	Side slope unit #6 - N98+80, E119+82
5	Side slope unit #6 - N98+80, E119+93
6	Side slope unit #6 - N98+40, E119+91
7	Side slope unit #6 - N98+60, E119+92
8	Side slope unit #6 - N98+30, E119+80
9	Side slope unit #6 - N98+80, E119+82
10	Side slope unit #6 - N98+80, E119+93
11	Side slope unit #6 - N98+40, E119+91
12	Side slope unit #6 - N98+60, E119+92

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
5	107.7	17.8

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

<< Denotes Less than Specified Compaction

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 09/28/93					
13	18.6	105.1	6	98	90	3	-2.5'
14	21.7	101.6	6	94	90	3	-2.5'
15	24.2	97.7	6	91	90	3	-2.5'
16	21.5	102.0	6	95	90	3	-2.5'
17	20.3	100.8	6	94	90	3	-2.5'
18	22.9	98.5	6	91	90	3	-2.0'
19	21.1	102.6	6	95	90	3	-2.0'
20	22.2	100.7	6	93	90	3	-2.0'
21	25.2	97.7	6	91	90	3	-2.0'
22	21.6	99.3	6	92	90	3	-2.0'
23	18.5	104.0	6	96	90	1	-2.5'

TEST LOCATIONS:

13 Side slope No. 6 - N98+30, E119+80
14 Side slope No. 6 - N98+30, E120+00
15 Side slope No. 6 - N98+50, E119+90
16 Side slope No. 6 - N98+80, E119+80
17 Side slope No. 6 - N98+80, E120+00
18 Side slope No. 6 - N98+30, E119+80
19 Side slope No. 6 - N98+30, E120+00
20 Side slope No. 6 - N98+50, E119+90
21 Side slope No. 6 - N98+80, E119+80
22 Side slope No. 6 - N98+80, E120+00
23 Correlation for test No. 13

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
6	107.8	17.8
FP-1	105.6	21.2

REMARKS

Performed In General Accordance With:
3 - ASTM D2922
1 - ASTM D2937

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
			Tests Performed on 10/04/93				
24	41.9	75.1	7	79 <<	90	3	-2.5'
25	43.6	74.6	7	79 <<	90	3	-2.5'
26	44.2	74.7	7	79 <<	90	3	-2.5'
27	43.0	75.0	7	79 <<	90	3	-2.5'
28	40.6	76.0	7	80 <<	90	3	-2.5'
29	42.1	75.7	7	80 <<	90	3	-2.0'
30	44.0	75.1	7	79 <<	90	3	-2.0'
31	43.2	74.9	7	79 <<	90	3	-2.0'
32	42.5	74.5	7	79 <<	90	3	-2.0'
33	42.9	74.7	7	79 <<	90	3	-2.0'
34	42.1	75.0	7	79 <<	90	1	-2.0'

TEST LOCATIONS:

24	Side slope No. 6 - N98+80, E119+80
25	Side slope No. 6 - N98+80, E120+00
26	Side slope No. 6 - N98+50, E119+90
27	Side slope No. 6 - N98+30, E119+80
28	Side slope No. 6 - N98+30, E120+00
29	Side slope No. 6 - N98+80, E119+80
30	Side slope No. 6 - N98+80, E120+00
31	Side slope No. 6 - N98+50, E119+90
32	Side slope No. 6 - N98+30, E119+80
33	Side slope No. 6 - N98+30, E120+00
34	Correlation for test #32

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.6	24.7
FP-2	70.9	50.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922
1 - ASTM D2937
<< Denotes Less than Specified Compaction

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

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PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 10/11/93							
35	8.3	112.3	3	91	90	3	-3.0'
36	10.0	116.7	3	94	90	3	-3.0'
37	9.6	115.8	3	93	90	3	-3.0'
38	10.1	116.1	3	94	90	3	-3.0'

TEST LOCATIONS:

35 Side slope No. 6 - N98+80, E120+60
36 Side slope No. 6 - N98+50, E122+80
37 Side slope No. 5 - N99+15, E119+00
38 Side slope No. 5 - N99+15, E122+10

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
3	124.0	11.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

DISTRIBUTION:
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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 10/13/93							
39	10.4	114.9	3	93	90	3	-3.0'
40	12.1	114.5	3	92	90	3	-3.0'
41	12.4	115.3	3	93	90	3	-3.0'
42	10.6	115.2	3	93	90	3	-3.0'

TEST LOCATIONS:

39 Side slope No. 5 - N96+50, E124+20
40 Side slope No. 6 - N96+50, E123+40
41 Side slope No. 5 - N98+20, E124+20
42 Side slope No. 6 - N97+80, E123+40

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
3	124.0	11.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

DISTRIBUTION:
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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 10/14/93							
43	30.4	85.7	7	91	90	3	-2.5'
44	28.6	87.9	7	93	90	3	-2.5'

TEST LOCATIONS:

43 Side slope No. 6 - N98+40, E118+50
44 Side slope No. 5 - N99+10, E120+00

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 10/19/93							
45	17.4	105.0	3	85 <<	90	1	-1.0'
46	14.4	110.3	3	89 <<	90	1	-1.0'
47	14.6	114.0	3	92	90	1	-1.0'

TEST LOCATIONS:

45 Initial cover for downcomer 19 on slope No. 6 at Sta. N98+60
46 RETEST OF TEST NO. 45
47 RETEST OF TEST NO. 46

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
3	124.0	11.0

REMARKS

Performed In General Accordance With:
1 - ASTM D2937

<< Denotes Less than Specified Compaction

DISTRIBUTION:
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RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 10/20/93					
48	31.9	84.4	7	89 <<	90	1	-0'
49	31.0	86.2	7	91	90	1	-0'

TEST LOCATIONS:

48 Downcomer 19 slope No. 6 at Sta. N98+60
49 RETEST OF TEST NO. 48

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

Performed In General Accordance With:
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<< Denotes Less than Specified Compaction

DISTRIBUTION:
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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 10/22/93							
50	39.8	79.4	7	84 <<	90	3	-2.5'

TEST LOCATIONS:

50 Side slope No. 6 - N120+70, E98+40

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

Performed In General Accordance With:
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RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 10/28/93							
51	23.4	97.5	5	91	90	3	-3.0'
52	26.0	96.9	5	90	90	3	-3.0'
53	11.2	112.9	4	90	90	3	-3.0'
54	7.4	115.2	4	92	90	3	-3.0'

TEST LOCATIONS:

51 Side slope No. 8 - N96+90, E118+00
52 Side slope No. 8 - N97+40, E120+30
53 Side slope No. 8 - N97+20, E122+00
54 Side slope No. 8 - N96+75, E122+38

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
5	107.7	17.8
4	125.0	10.1

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 10/29/93					
55	15.4	110.1	3	89 <<	90	3	-1.0'
56	15.1	112.3	3	91	90	3	-1.0'

TEST LOCATIONS:

55 Downcomer 19, slope 8 - N97+10, E120+32
56 RETEST OF TEST NO. 55

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
3	124.0	11.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

<< Denotes Less than Specified Compaction

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
			Tests Performed on 11/03/93				
57	34.4	84.9	7	90	85	3	-2.5'
58	33.6	84.7	7	90	85	1	-2.5'
59	29.4	88.9	7	94	85	3	-2.5'
60	35.3	82.3	7	87	85	3	-2.5'
61	35.3	84.8	7	90	85	3	-2.5'
62	34.9	82.4	7	87	85	3	-2.5'
63	31.5	85.9	7	91	85	3	-2.5'
64	34.8	85.1	7	90	85	3	-2.5'
65	35.8	82.6	7	87	85	3	-2.5'

TEST LOCATIONS:

57	Side slope No. 6 - N97+00, E124+00
58	Correlation for test No. 57
59	Side slope No. 8 - N96+75, E122+00
60	Side slope No. 8 - N97+20, E121+00
61	RETEST OF TEST NO. 50
62	Side slope No. 6 - N98+80, E122+50
63	Side slope No. 5 - N99+20, E121+00
64	Side slope No. 5 - N99+20, E123+00
65	Side slope No. 5 - N97+80, E124+30

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

Performed In General Accordance With:
3 - ASTM D2922
1 - ASTM D2937

DISTRIBUTION:
England Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

Bryant B. Wildes

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 11/04/93							
66	28.6	84.8	7	90	85	3	-0'
67	12.2	111.1	3	90	90	3	-3.0'
68	14.5	112.2	3	91	90	3	-3.0'
69	11.9	111.5	3	90	90	3	-3.0'
70	12.6	112.7	3	91	90	3	-3.0'

TEST LOCATIONS:

66 Downcomer 19, side slope No. 8 - N97+20, E120+32
67 Side slope No. 7 - N96+50, E122+70
68 Side slope No. 7 - N97+60, E122+40
69 Side slope No. 7 - N97+30, E121+00
70 Side slope No. 7 - N98+00, E118+70

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7
3	124.0	11.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

DISTRIBUTION:
England Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

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PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 11/05/93					
71	34.1	83.1	7	88	85	3	-2.5'
72	39.1	80.4	7	85	85	3	-2.5'
73	39.6	80.2	7	85	85	1	-2.5'

TEST LOCATIONS:

71 Side slope No. 8 - N97+30, E120+00
72 Side slope No. 8 - N97+00, E118+50
73 Correlation for Test No. 72

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

Performed In General Accordance With:
3 - ASTM D2922
1 - ASTM D2937

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 11/09/93							
74	14.1	112.8	3	91	90	3	-1.0'

TEST LOCATIONS:

74 N97+50, E120+32, Side slope 7 - Downcomer 19

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
3	124.0	11.0

REMARKS

Performed In General Accordance With:
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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 11/14/93							
75	34.7	85.1	7	90	85	3	-2.0'
76	34.2	83.8	7	89	85	3	-0'

TEST LOCATIONS:

75 Side slope No. 6 - E118+20, N98+50
76 Downcomer 19, Side slope No. 7 - N98+00, E120+32

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

Performed In General Accordance With:
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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 11/15/93							
77	32.1	87.1	7	92	85	3	-2.0'
78	35.6	84.7	7	90	85	3	-2.0'
79	27.7	89.0	7	94	85	3	-2.0'
80	29.2	88.9	7	94	85	3	-2.0'
81	34.4	84.6	7	90	85	3	-2.0'
82	38.2	80.9	7	86	85	3	-2.0'

TEST LOCATIONS:

77	Side slope No. 6 - N98+50, E120+75
78	Side slope No. 6 - N98+80, E122+00
79	Side Slope No. 5 - N96+75, E123+90
80	Side slope No. 5 - N97+90, E123+90
81	Side slope No. 5 - N99+10, E121+70
82	Side slope No. 5 - N99+10, E118+60

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

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REPORT OF FIELD DENSITY TESTS

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CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 11/16/93					
83	32.9	86.8	7	92	85	3	-2.0'
84	35.7	82.5	7	87	85	3	-2.5'
85	31.9	84.5	7	89	85	3	-2.5'
86	32.4	84.1	7	89	85	1	-2.5'
87	35.1	83.4	7	88	85	3	-2.5'
88	32.7	86.3	7	91	85	3	-2.5'
89	18.9	102.0	5	95	90	3	-1.0'
90	15.2	101.7	5	94	90	3	-1.0'

TEST LOCATIONS:

83	Side slope No. 6 - N97+00, E123+30
84	Side slope No. 7 - N97+10, E122+80
85	Side slope No. 7 - N97+90, E122+50
86	Correlation for test No. 85
87	Side slope No. 7 - N97+75, E119+70
88	Side slope No. 7 - N97+80, E118+30
89	Side slope No. 5 - N98+40, E124+20; Downcomer #21
90	Side slope No. 6 - N98+00, E123+60; Downcomer #21

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7
5	107.7	17.8

REMARKS

Performed In General Accordance With:
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REPORT OF FIELD DENSITY TESTS

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PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 11/17/93					
91	34.8	85.6	7	91	85	3	-0'
92	31.6	88.0	7	93	85	3	-0'
93	20.3	104.0	5	97	90	3	-1'

TEST LOCATIONS:

91 Side slope No. 5 - N98+40, E124+20; Downcomer #21
92 Side slope No. 6 - N98+00, E123+50; Downcomer #21
93 Side slope No. 7 - N97+50, E122+70; Downcomer #21

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7
5	107.7	17.8

REMARKS

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CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 11/18/93							
94	33.0	84.6	7	90	85	3	-2.0'
95	34.4	83.2	7	88	85	3	-2.0'
96	34.7	83.2	7	88	85	3	-2.0'
97	39.7	80.7	7	85	85	3	-2.0'
98	34.2	84.1	7	89	85	3	-0'

TEST LOCATIONS:

94 Side slope No. 8 - N97+00, E118+20
95 Side slope No. 8 - N97+25, E119+90
96 Side slope No. 8 - N97+70, E122+40
97 Side slope No. 8 - N96+50, E122+80
98 Side slope No. 7 - Downcomer 21; N97+50, E122+70

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 11/20/93							
99	36.4	83.5	7	88	85	3	-2.0'
100	31.5	87.1	7	92	85	3	-2.0'
101	36.9	82.5	7	87	85	3	-2.0'
102	30.6	86.4	7	91	85	3	-2.0'

TEST LOCATIONS:

99 Side slope No. 7 - N97+60, E118+20
100 Side slope No. 7 - N98+10, E120+00
101 Side slope No. 7 - N97+80, E122+00
102 Side slope No. 7 - N96+70, E122+75

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 11/23/93					
103	11.2	95.1	10	93	90	3	-0'
104	10.2	97.9	10	96	90	3	-1'
105	10.1	96.5	10	94	90	3	-0'
106	9.7	93.3	10	91	90	3	-1'

TEST LOCATIONS:

103 Side slope No. 6 - N98+50, E118+00
104 Side slope No. 6 - N98+50, E118+00
105 Side slope No. 5 - N99+20, E118+40
106 Side slope No. 5 - N99+20, E118+40

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
10	102.2	14.2

REMARKS

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CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 11/30/93							
107	8.8	97.7	10	96	90	3	-0'
108	11.2	98.4	10	96	90	3	-1'
109	9.8	97.5	10	95	90	3	-0'
110	11.6	98.5	10	96	90	3	-1'
111	11.6	93.5	10	92	90	3	-1'

TEST LOCATIONS:

107	Side slope No. 6 - N98+60, E120+80
108	Side slope No. 6 - N98+60, E120+80
109	Side slope No. 6 - N98+80, E122+50
110	Side slope No. 6 - N98+80, E122+50
111	Side slope No. 5 - N99+15, E121+00

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
10	102.2	14.2

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 12/02/93							
112	11.1	96.0	10	94	90	3	-0'

TEST LOCATIONS:

112 Side slope No. 5 - N99+15, E121+00

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
10	102.2	14.2

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
			Tests Performed on 12/03/93				
113	21.5	98.0	5	91	90	3	-3.0'
114	11.1	97.8	10	96	90	3	-0'
115	10.4	97.7	10	96	90	3	-1'
116	28.1	83.4	7	88	85	3	-2.5'
117	27.6	82.5	7	87	85	3	-2.0'

TEST LOCATIONS:

113 Terrace 4, downcomer 19 - N96+70, E120+32
114 Side slope 5 - N99+20, E123+80
115 Side slope 5 - N99+20, E123+80
116 Terrace 4, downcomer 19 - N96+70, E120+32
117 Terrace 4, downcomer 19 - N96+70, E120+32

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
5	107.7	17.8
10	102.2	14.2
7	94.5	24.7

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 12/07/93							
118	11.1	96.1	10	94	90	3	-0'
119	9.9	94.7	10	93	90	3	-1'
120	12.2	93.9	10	92	90	3	-0'
121	10.6	94.8	10	93	90	3	-1'
122	13.6	93.8	10	92	90	3	-0'
123	12.4	93.2	10	91	90	3	-1'
124	9.6	94.6	10	93	90	3	-0'
125	9.4	94.0	10	92	90	3	-1'

TEST LOCATIONS:

118	Side slope No. 5 - N97+00, E124+40
119	Side slope No. 5 - N97+00, E124+40
120	Side slope No. 5 - N98+00, E124+15
121	Side slope No. 5 - N98+00, E124+15
122	Side slope No. 6 - N97+80, E123+70
123	Side slope No. 6 - N97+80, E123+70
124	Side slope No. 6 - N97+00, E123+30
125	Side slope No. 6 - N97+00, E123+30

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
10	102.2	14.2

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 12/10/93							
126	38.1	80.2	7	85	85	3	-2.0'
127	16.1	106.7	5	99	90	3	-3.0'

TEST LOCATIONS:

126 Terrace No. 2 - N98+17, E122+00
127 Terrace No. 2 - N98+17, E122+00

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7
5	107.7	17.8

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 12/16/93					
128	28.6	87.0	7	92	85	3	-2.5'
129	16.1	101.3	6	94	90	3	-3.0'
130	14.9	100.8	6	93	90	3	-3.0'

TEST LOCATIONS:

128 Terrace 2 - N98+20, E118+60
129 Side slope No. 6 - N95+75, E123+40
130 Side slope No. 5 - N96+00, E124+20

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
7	94.5	24.7
6	107.8	17.7

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 12/22/93					
131	12.6	97.4	10	95	90	3	-0'
132	14.1	100.4	10	98	90	3	-1'
133	11.9	98.4	10	96	90	3	-0'
134	13.4	95.7	10	94	90	3	-1'
135	10.4	96.6	10	95	90	3	-0'
136	11.2	95.4	10	93	90	3	-1'
137	14.2	96.1	10	94	90	3	-0'
138	15.9	94.6	10	93	90	3	-1'

TEST LOCATIONS:

131	Side slope No. 7 - N97+70, E118+00
132	Side slope No. 7 - N97+70, E118+00
133	Side slope No. 7 - N98+10, E119+50
134	Side slope No. 7 - N98+10, E119+50
135	Side slope No. 8 - N97+10, E118+00
136	Side slope No. 8 - N97+10, E118+00
137	Side slope No. 8 - N97+40, E119+50
138	Side slope No. 8 - N97+40, E119+50

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
10	102.2	14.2

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 01/06/94					
139	16.1	91.6	10	90	90	3	-0'
140	14.4	92.6	10	91	90	3	-1'
141	13.4	95.9	10	94	90	3	-0'
142	15.9	92.6	10	91	90	3	-1'
143	34.4	84.7	7	90	85	3	-2'
144	35.1	83.4	7	88	85	3	-2.5'
145	31.6	84.2	7	89	85	3	-2'
146	32.8	84.9	7	90	85	3	-2.5'

TEST LOCATIONS:

139	Side slope No. 7 - N98+20, E121+50
140	Side slope No. 7 - N98+20, E121+50
141	Side slope No. 8 - N97+20, E121+50
142	Side slope No. 8 - N97+20, E121+50
143	Side slope No. 5 - N95+80, E124+20
144	Side slope No. 5 - N95+80, E124+20
145	Side slope No. 6 - N95+50, E123+60
146	Side slope No. 6 - N95+50, E123+60

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
10	102.2	14.2
7	94.5	24.7

REMARKS

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-01631-13

PROJECT: Trailridge Landfill
Side Slope Closure Phase I and II

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 01/11/94					
147	12.1	93.3	10	91	90	3	-0'
148	13.4	92.9	10	91	90	3	-1'
149	14.1	96.2	10	94	90	3	-0'
150	14.4	93.3	10	91	90	3	-1'
151	10.9	94.4	10	92	90	3	-0'
152	11.6	94.5	10	92	90	3	-1'
153	12.1	96.3	10	94	90	3	-0'
154	12.6	94.7	10	93	90	3	-1'
155	13.9	93.0	10	91	90	3	-0'
156	14.1	95.3	10	93	90	3	-1'

TEST LOCATIONS:

147	Side slope No. 5 - N95+80, E124+20
148	Side slope No. 5 - N95+80, E124+20
149	Side slope No. 6 - N95+50, E123+60
150	Side slope No. 6 - N95+50, E123+60
151	Side slope No. 7 - N97+70, E122+80
152	Side slope No. 7 - N97+70, E122+80
153	Side slope No. 7 - N96+70, E122+70
154	Side slope No. 7 - N96+70, E122+70
155	Side slope No. 3 - N97+00, E122+00
156	Side slope No. 8 - N97+00, E122+00

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
10	102.2	14.2

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

DISTRIBUTION:
England Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

Bryant B. Wildes

APPENDIX B

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Daily Rainfall

Client: England, Thims & Miller, Inc.

Date: 9/30/93

Project: Trailridge Landfill
Side Slope Closure Phase I and II

Project No: 446-01631-13

As requested by Mrs. Juanitta Clem of England, Thims & Miller, Inc., Law Engineering, Inc. is pleased to submit the Record of Daily Rainfall for the month of September, 1993. Construction of the subject project began on September 20, 1993. Please find attached the Record of Daily Rainfall.

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

RECORD OF DAILY RAINFALL

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 9-30-93

DATE	RECORDED RAINFALL	DATE	RECORDED RAINFALL	DATE	RECORDED RAINFALL
9-20-93	Ø				
9-21-93	0.1"				
9-22-93	Ø				
9-23-93	Ø				
9-24-93	Ø				
9-25-93	Ø				
9-26-93	Ø				
9-27-93	Ø				
9-28-93	0.3"				
9-29-93	Ø				
9-30-93	Ø				
					RBW 10/28/93

LAW ENGINEERING, INC

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Daily Rainfall

Client: England, Thims & Miller, Inc.

Date: 11/6/93

Project: Trailridge Landfill
Side Slope Closure Phase I & II

Project No: 446-01631-13

As requested by Mrs. Juanitta Clem of England, Thims & Miller, Inc., Law Engineering, Inc. is pleased to submit the Record of Daily Rainfall for the month of October, 1993, for the subject project. Please find attached the Record of Daily Rainfall obtained from Waste Management, Inc.

Respectfully submitted,
LAW ENGINEERING

Bryant B Wildes

Bryant B. Wildes, Chief Engineering Technician

RECORD OF DAILY RAINFALL

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 10-31-93

DATE	RECORDED RAINFALL	DATE	RECORDED RAINFALL	DATE	RECORDED RAINFALL
10-1-93	Ø	10-14-93	Ø	10-27-93	Ø
10-2-93	Ø	10-15-93	Trace	10-28-93	Ø
10-3-93	Ø	10-16-93	2.2"	10-29-93	Ø
10-4-93	Ø	10-17-93	Recorded 10-18-93	10-30-93	0.7"
10-5-93	Ø	10-18-93	2.1"	10-31-93	5.3"
10-6-93	Ø	10-19-93	Ø		
10-7-93	0.5"	10-20-93	Ø		
10-8-93	0.1"	10-21-93	Ø		
10-9-93	0.9"	10-22-93	Ø		
10-10-93	Ø	10-23-93	Ø		
10-11-93	Ø	10-24-93	Trace		
10-12-93	Ø	10-25-93	0.1"		
10-13-93	Ø	10-26-93	0.2"		RBW

LAW ENGINEERING, INC

LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Daily Rainfall

Client: England, Thims & Miller, Inc.

Date: 12/1/93

Project: Trailridge Side Slope Closure Phase I and II

Project No: 446-01631-13

As requested by Mrs. Juanitta Clem of England, Thims & Miller, Inc., Law Engineering, Inc. is pleased to submit the Record of Daily Rainfall for the month of November, 1993. The attached Record of Daily Rainfall has been provided to us by Waste Management, Inc.

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

RECORD OF DAILY RAINFALL

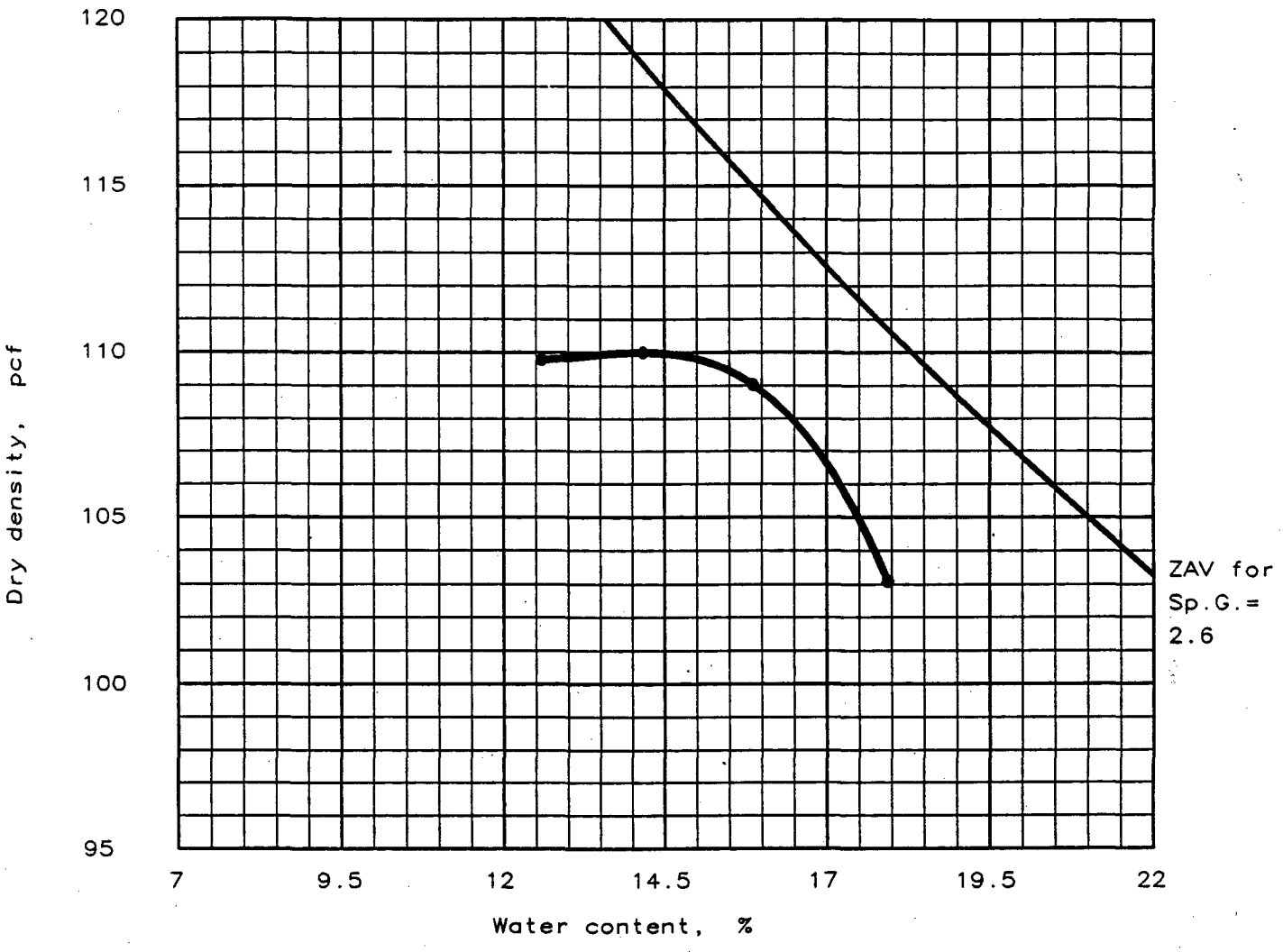
TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: HARLON WIGGINS
PROJECT NO: 446-01631.13
DATE: 11-30-93

DATE	RECORDED RAINFALL	DATE	RECORDED RAINFALL	DATE	RECORDED RAINFALL
11-1-93	Ø	11-14-93	Ø	11-27-93	recorded 11-29-93
11-2-93	Ø	11-15-93	Ø	11-28-93	recorded 11-29-93
11-3-93	Ø	11-16-93	Ø	11-29-93	0.6"
11-4-93	Ø	11-17-93	Ø	11-30-93	Ø"
11-5-93	Ø	11-18-93	Ø		
11-6-93	0.8"	11-19-93	Ø		
11-7-93	Ø	11-20-93	Ø		
11-8-93	Trace	11-21-93	Ø		
11-9-93	Ø	11-22-93	Ø		
11-10-93	1.0"	11-23-93	Ø		
11-11-93	0.2"	11-24-93	Ø		
11-12-93	Ø Rain	11-25-93	recorded 11-29-93		
11-13-93	Ø	11-26-93	recorded 11-29-93		BTBW

APPENDIX C

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 14.1 % Maximum dry density = 110.0 pcf	Tan-Brown CLAY

Project No.: 446-01631-13
Project: Trailridge Landfill
Location: Borrow Pit, Bradford County
CLIENT: England, Thims & Miller, Inc.
Date: 9-13-1993

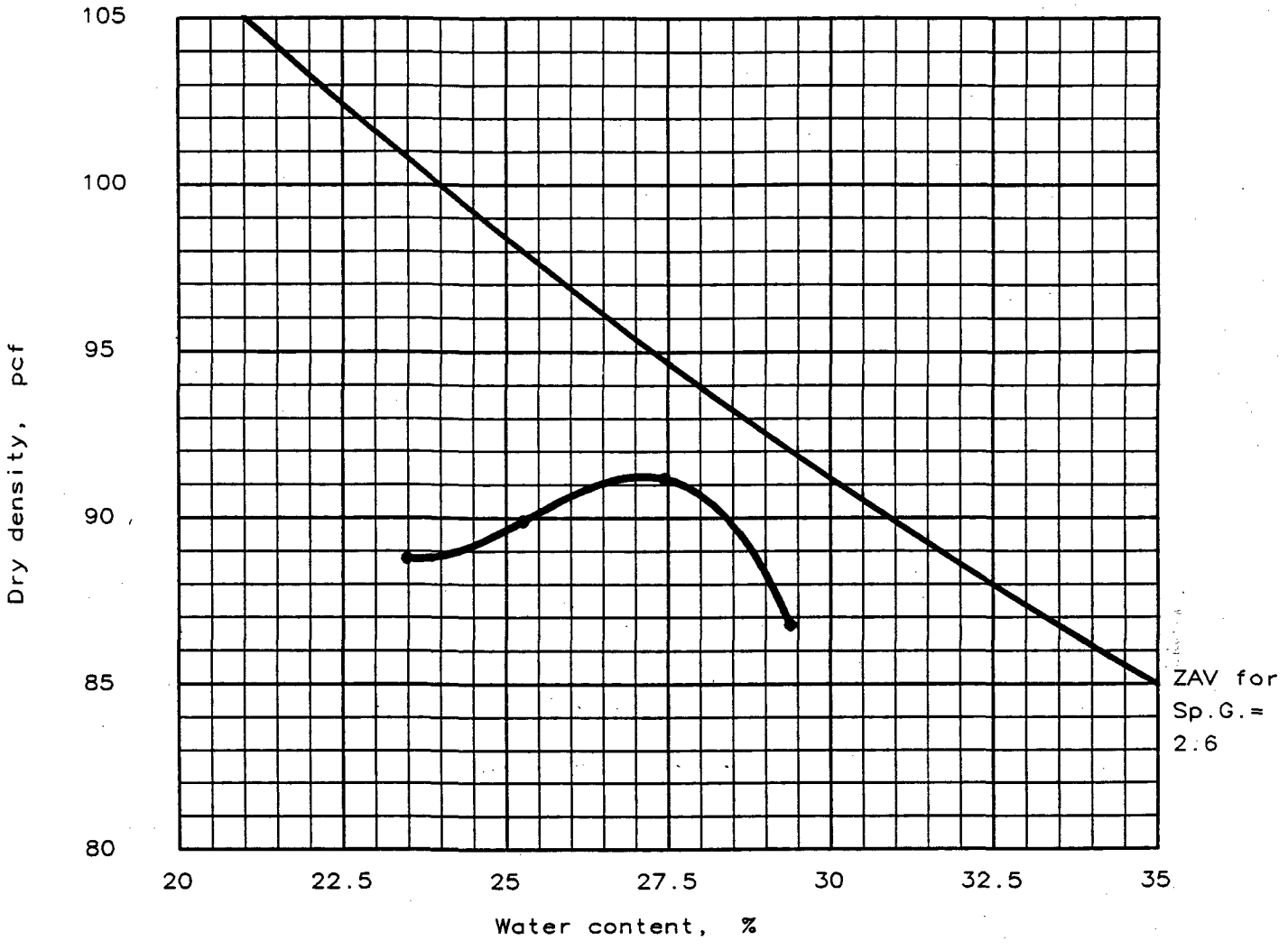
Remarks:
Proctor No. 1

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 27.1 % Maximum dry density = 91.3 pcf	Light Brown-Red CLAY

Project No.: 446-01631-13
Project: Trailridge Landfill
Location: Borrow Pit, Baker
CLIENT: England, Thims & Miller, Inc.
Date: 9-21-1993

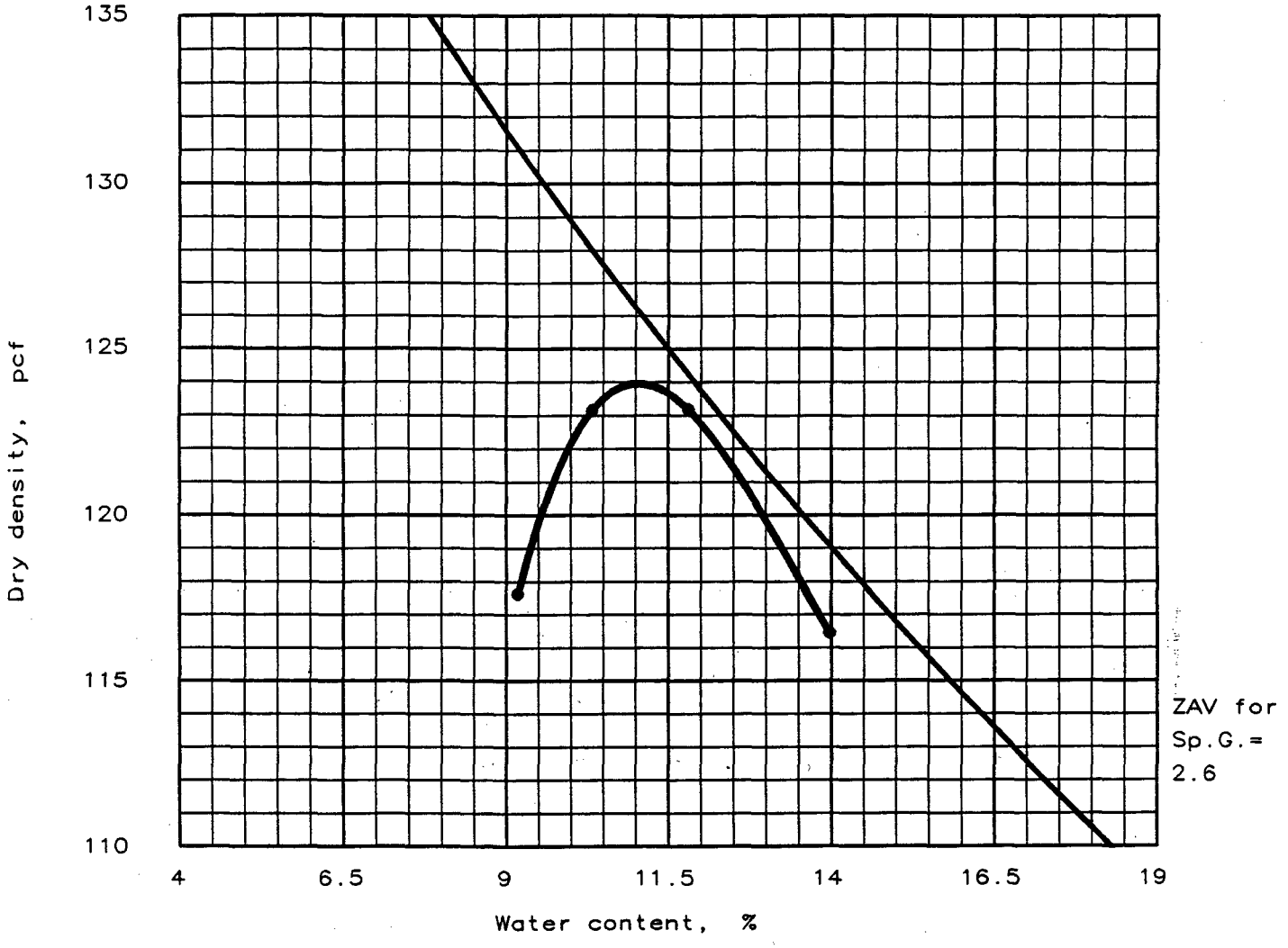
Remarks:
Proctor No. 2

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: **Bryant B. Wildes**
Chief Engineering Technician

PROCTOR TEST REPORT



"Modified" Proctor, ASTM D 1557, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 11.0 % Maximum dry density = 124.0 pcf	Brown Silty Slightly Clayey Fine SAND

Project No.: 446-01631-13
Project: Trailridge Landfill
Location: Side Slope Unit No. 8, at Station E 118+00
Date: 9-21-1993 CLIENT: England, Thims & Miller, Inc.

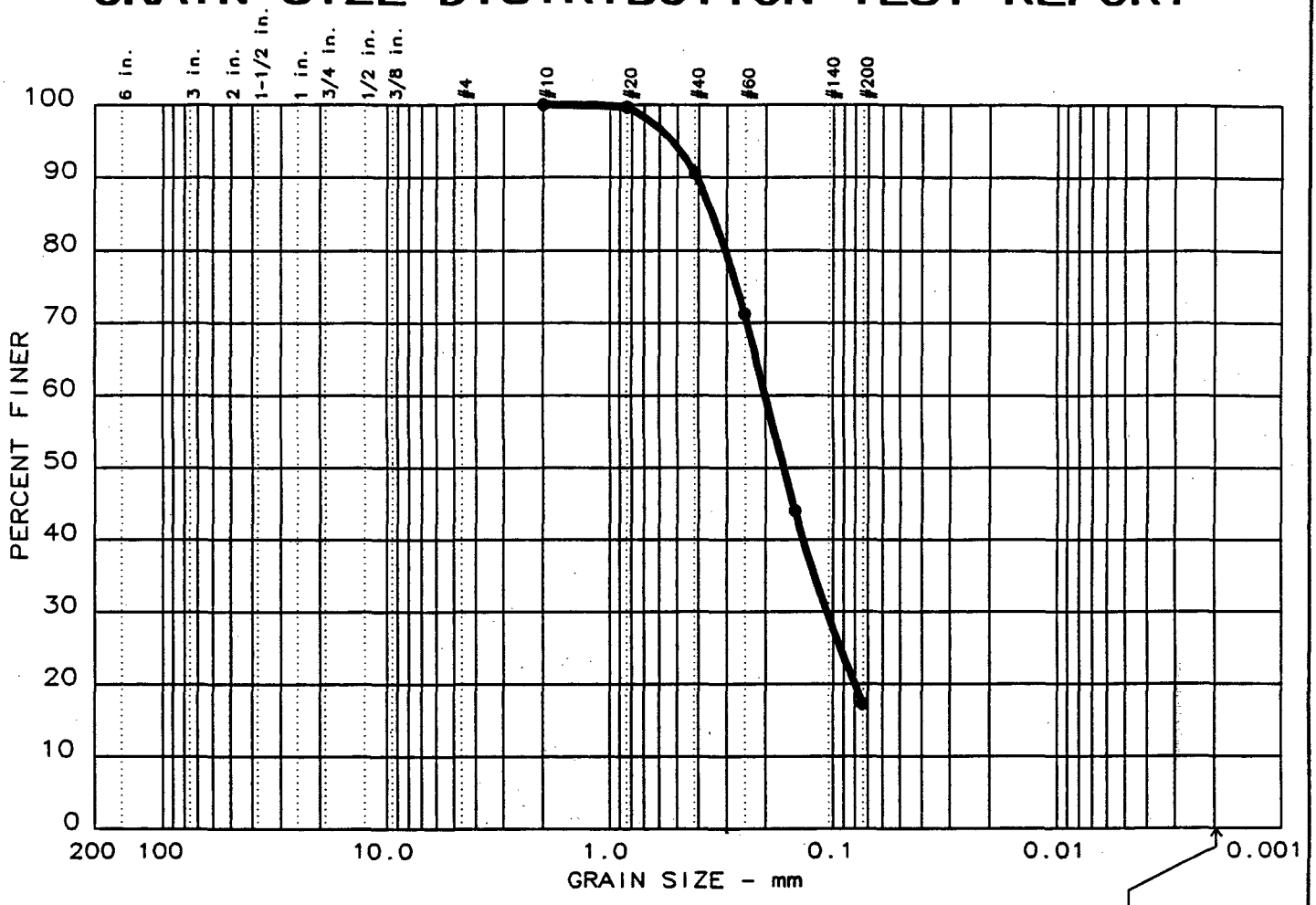
Remarks:
Proctor No. 3

PROCTOR TEST REPORT

LAW ENGINEERING INC.

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	82.7	17.3	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.35	0.20	0.17	0.107				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Silty Slightly Clayey Fine SAND	SM	A-2-4(0.0)

Project No.: 446-01631-13
Project: Trailridge Landfill
● Location: Side Slope Unit No. 8 at Sta. E118+00

Date: 9-23-93

Remarks:

Proctor No. 3

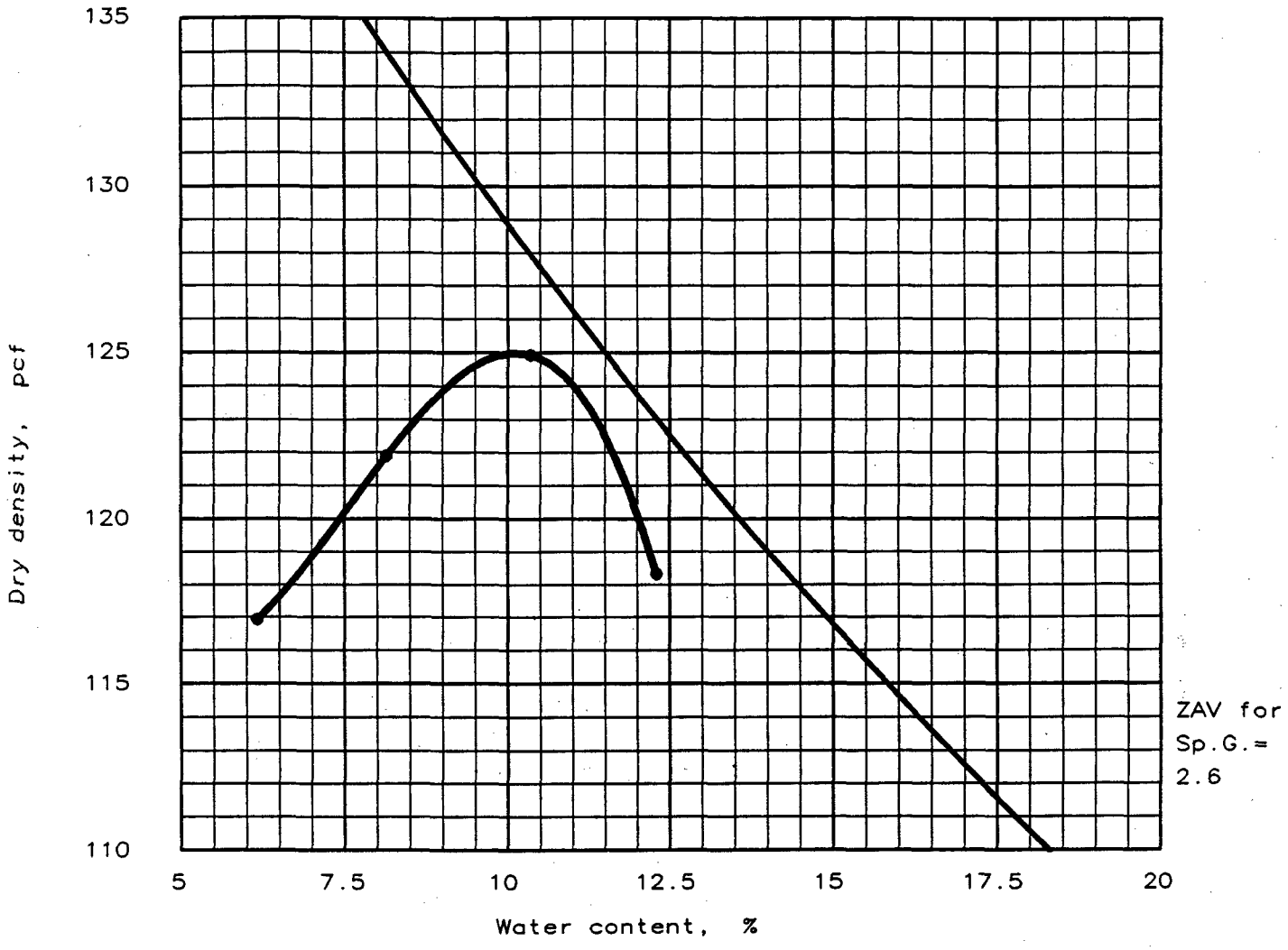
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING, INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Modified" Proctor, ASTM D 1557, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 10.1 % Maximum dry density = 125.0 pcf	Brown Silty Slightly Clayey Fine SAND

Project No.: 446-01631-13
Project: Trailridge Landfill
Location: Side Slope, Unit No. 6 at Station E 120+00
Date: 9-23-1993 **CLIENT: England, Thims & Miller, Inc.**

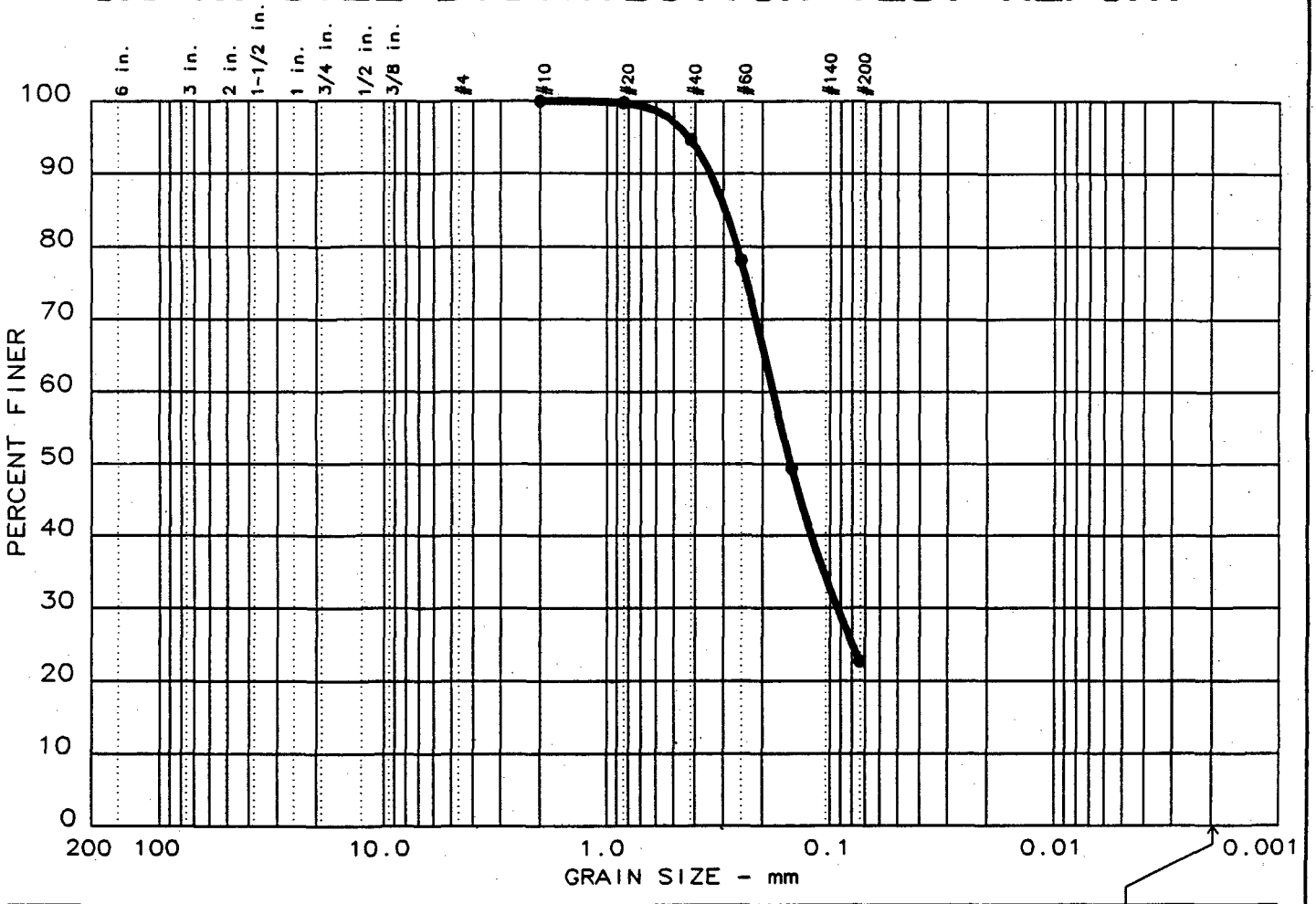
Remarks:
Proctor No. 4

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	77.3	22.7	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.29	0.18	0.15	0.093				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Silty Slightly Clayey Fine SAND	SM	A-2-4(0.0)

Project No.: 446-01631-13
Project: Trailridge Landfill
● Location: Side Slope Unit No. 6 at Sta. E120+00

Date: 9-23-93

Remarks:

Proctor No. 4

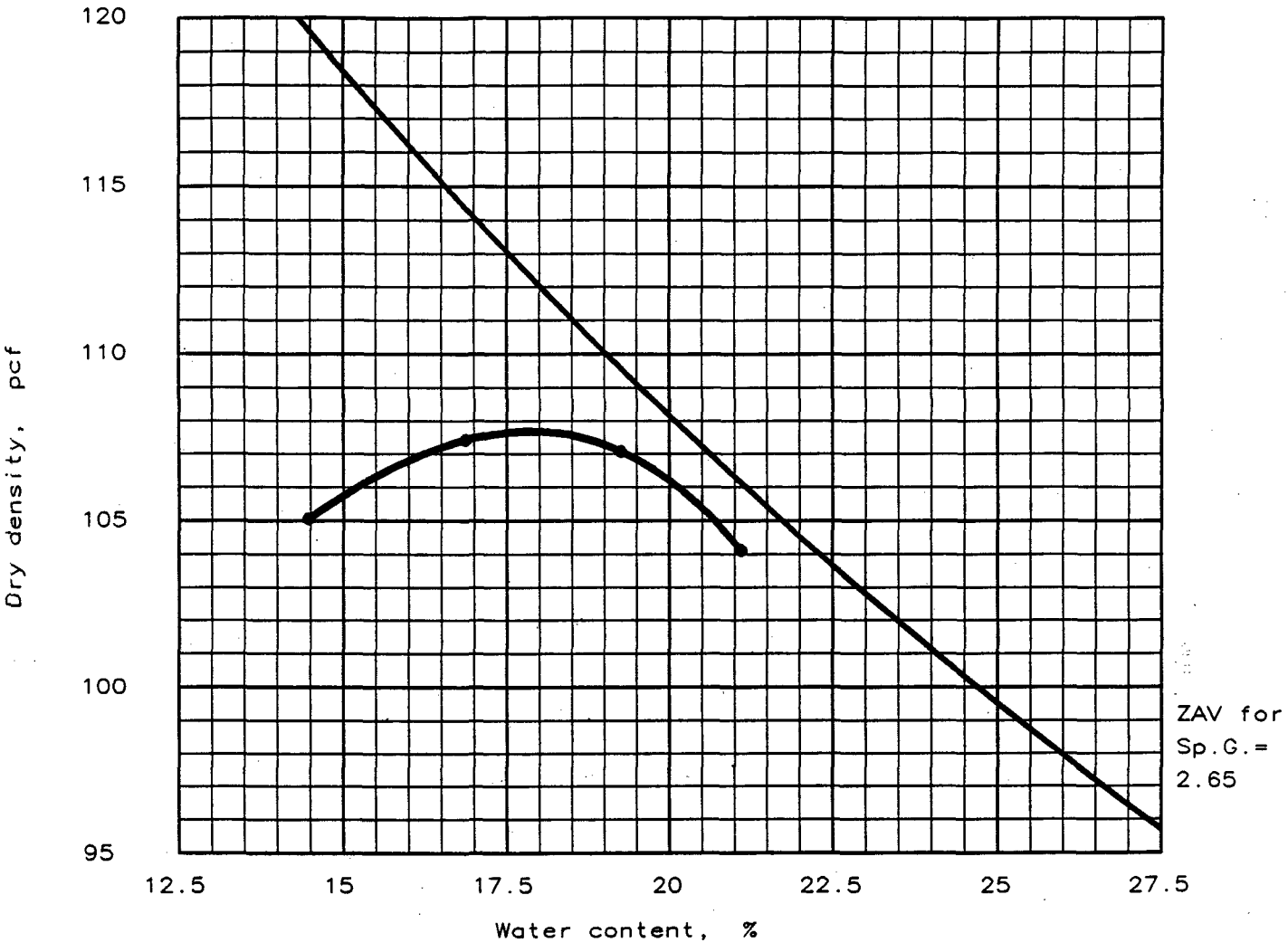
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING, INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 17.8 % Maximum dry density = 107.7 pcf	**Light Brown Silty Clayey Fine SAND**

Project No.: 446-01631-13
Project: Trailridge Landfill
Location: Test Strip
CLIENT: England, Thims & Miller, Inc.
Date: 9-24-1993

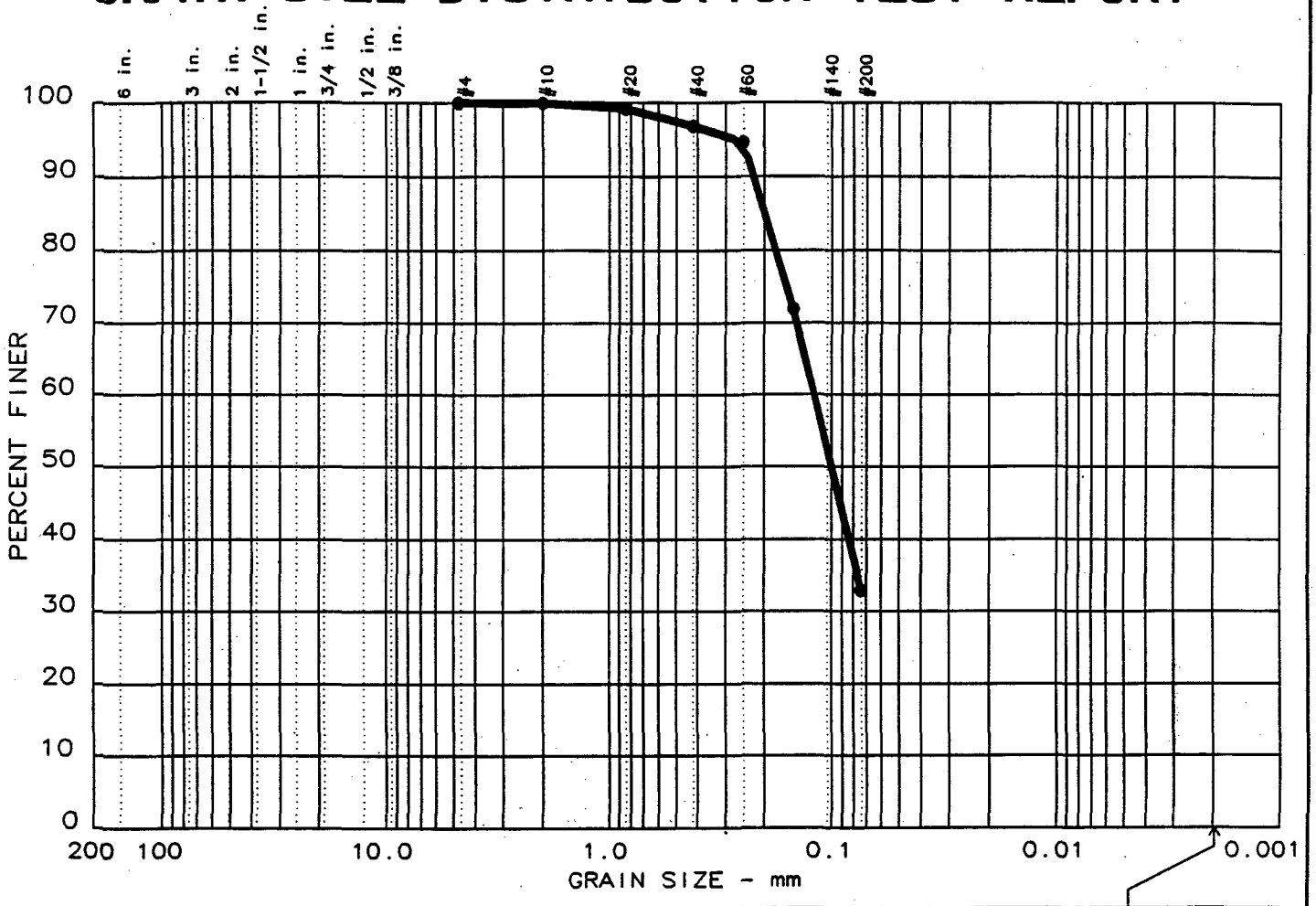
Remarks:
Proctor No.5

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	67.1	32.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.20	0.12	0.10					

MATERIAL DESCRIPTION	USCS	AASHTO
● Light Brown Silty Clayey Fine SAND	SM	A-2-4(0.0)

Project No.: 446-01631-13
Project: Trailridge Landfill
● Location: Clay Test Strip No. 1

Date: 9-24-93

Remarks:

Proctor No. 5

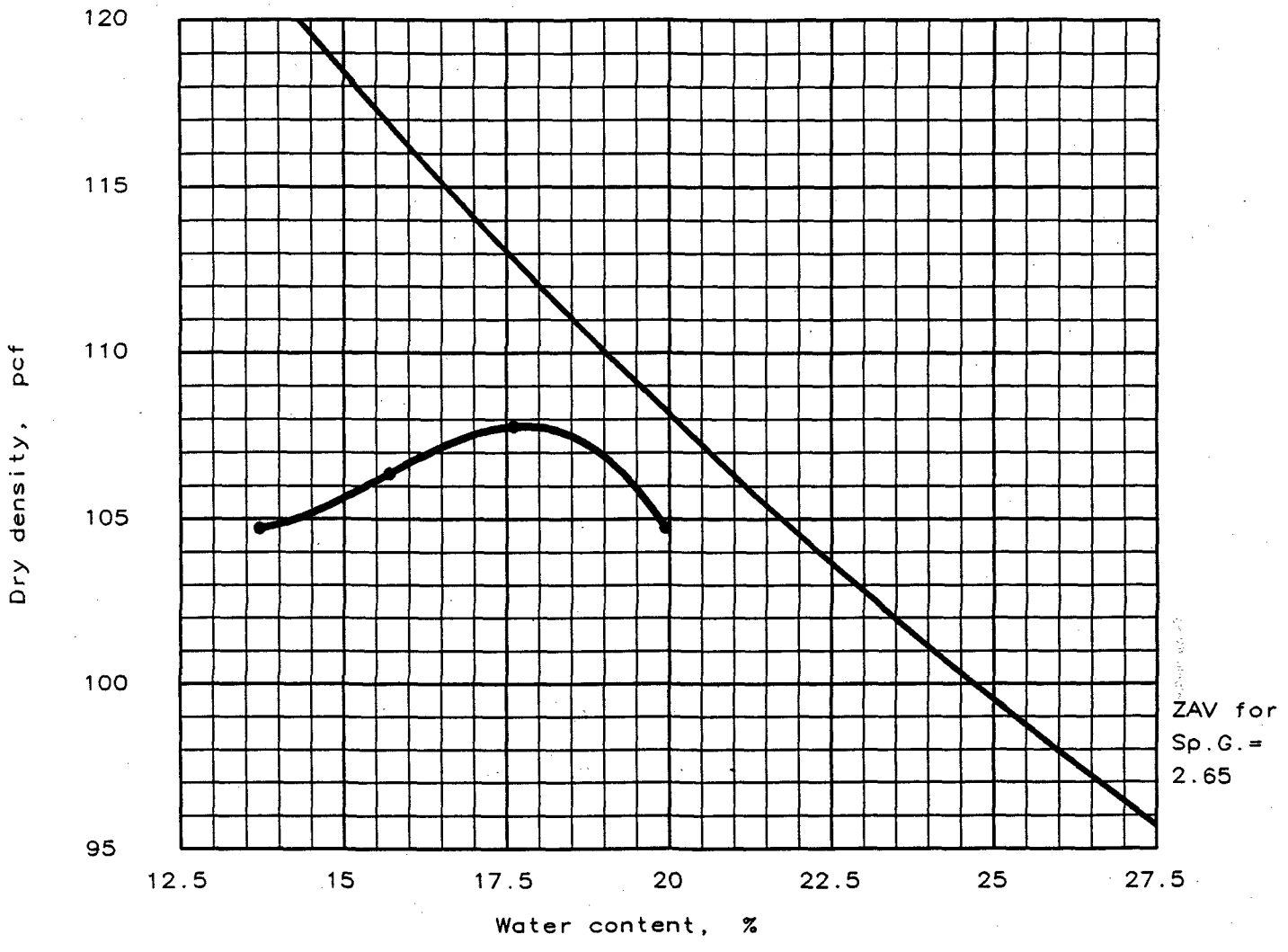
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING, INC.

Bryant B Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 17.7 % Maximum dry density = 107.8 pcf	Gray Purple Clayey Very Silty Fine SAND

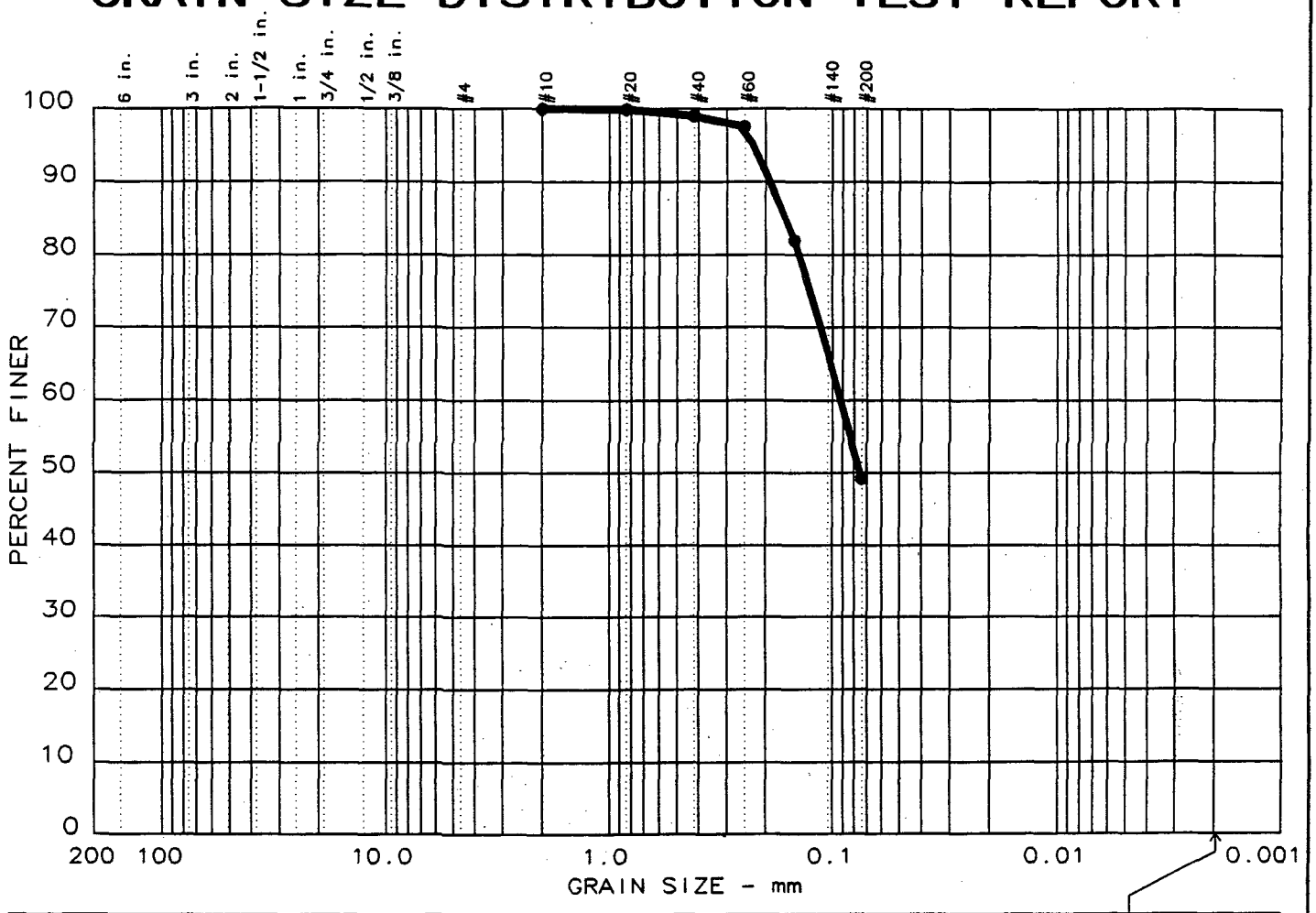
Project No.: 446-01631-13
Project: Trailridge Landfill
Location: Clay Test Strip No. 2
CLIENT: England, Thims & Miller, Inc.
Date: 10-1-933

Remarks:
Proctor No. 6

PROCTOR TEST REPORT
LAW ENGINEERING INC.

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	50.8	49.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.16	0.09	0.08					

MATERIAL DESCRIPTION	USCS	AASHTO
● Gray Purple Clayey Very Silty Fine SAND	SM	A-4(0.0)

Project No.: 446-01631-13
Project: Trailridge Landfill
● Location: Clay Test Strip No. 2

Date: 10-7-93

Remarks:

Proctor No. 6

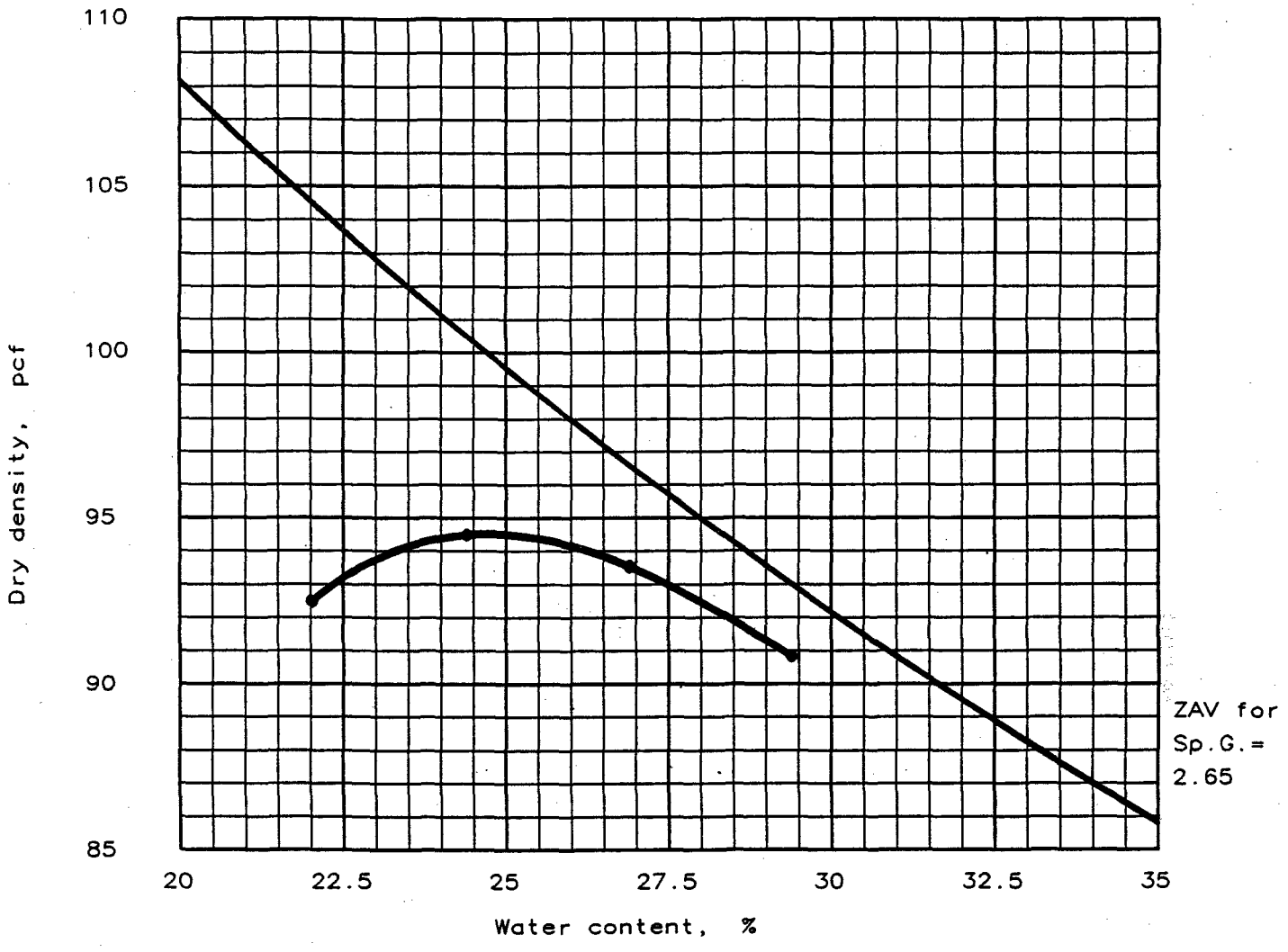
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING, INC.

Bryant B Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

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

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 24.7 % Maximum dry density = 94.5 pcf	Grey Green Sandy Silty CLAY

Project No.: 446-01631-13
Project: Trailridge Landfill
Location: Test Strip No. 3
CLIENT: England, Thims & Miller, Inc.
Date: 10-8-93

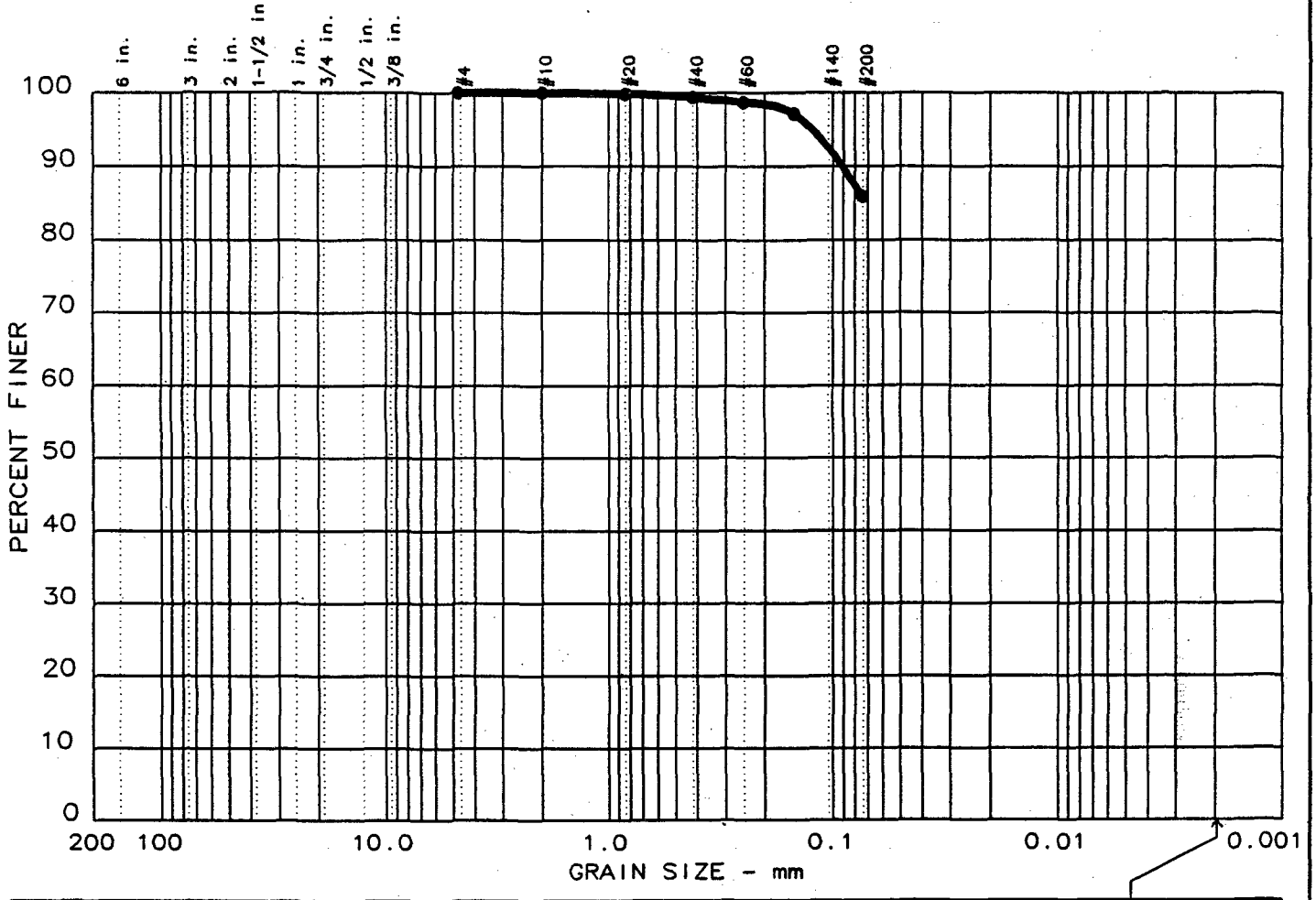
Remarks:
Proctor No. 7

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	14.1	85.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●										

MATERIAL DESCRIPTION	USCS	AASHTO
● Gray Green Sandy Silty Clay	ML	A-4(0.0)

Project No.: 446-01631-13
Project: Trailridge Landfill
● Location: Test Strip No. 3

Date: 10-12-93

Remarks:

Proctor No. 7

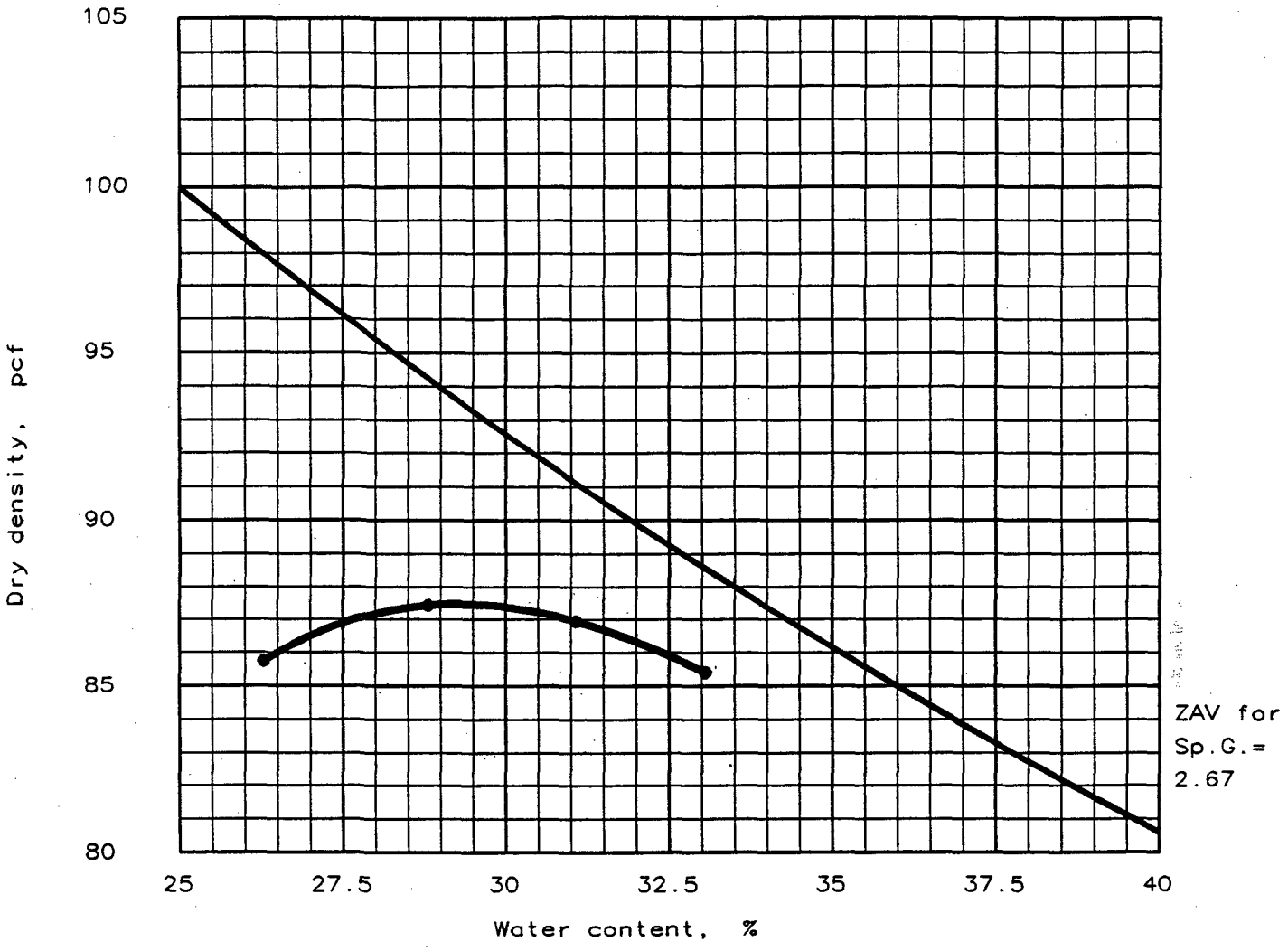
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING, INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 29.2 % Maximum dry density = 87.5 pcf	Grey Purple Slightly Sandy Silty CLAY

Project No.: 446-01631-13

Project: Trailridge Landfill

Location: Lawtey Pit

CLIENT: England, Thims & Miller, Inc.

Date: 10-21-93

Remarks:

Proctor No. 8

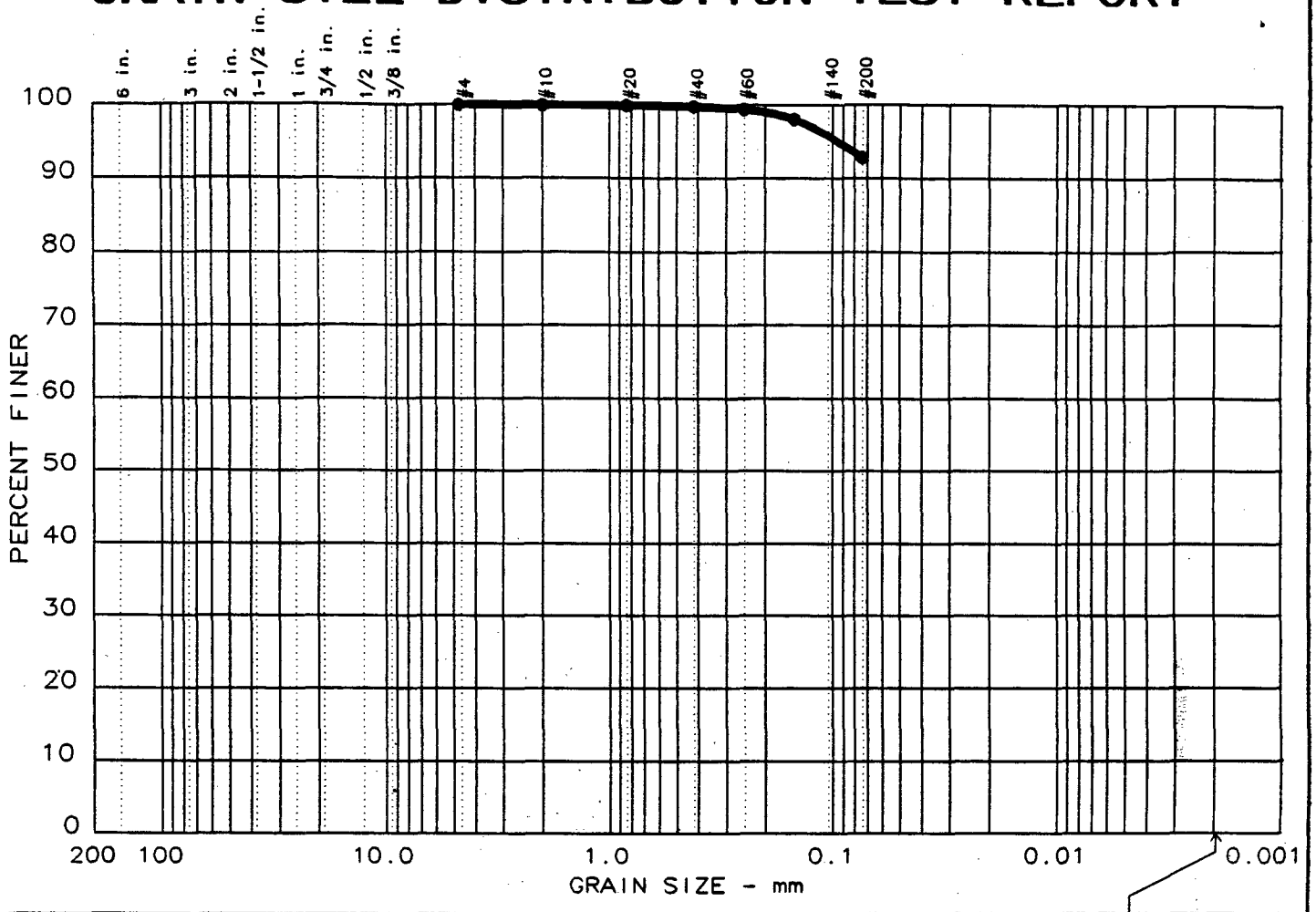
PROCTOR TEST REPORT

LAW ENGINEERING INC.

Bryant B Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	7.2	92.8	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●										

MATERIAL DESCRIPTION	USCS	AASHTO
● Grey Purple Slightly Sandy Silty CLAY	ML	A-4(0.0)

Project No.: 446-01631-13
Project: Trailridge Landfill
● Location: Lawtey Pit

Date: 10-21-93

Remarks:

Proctor No. 8

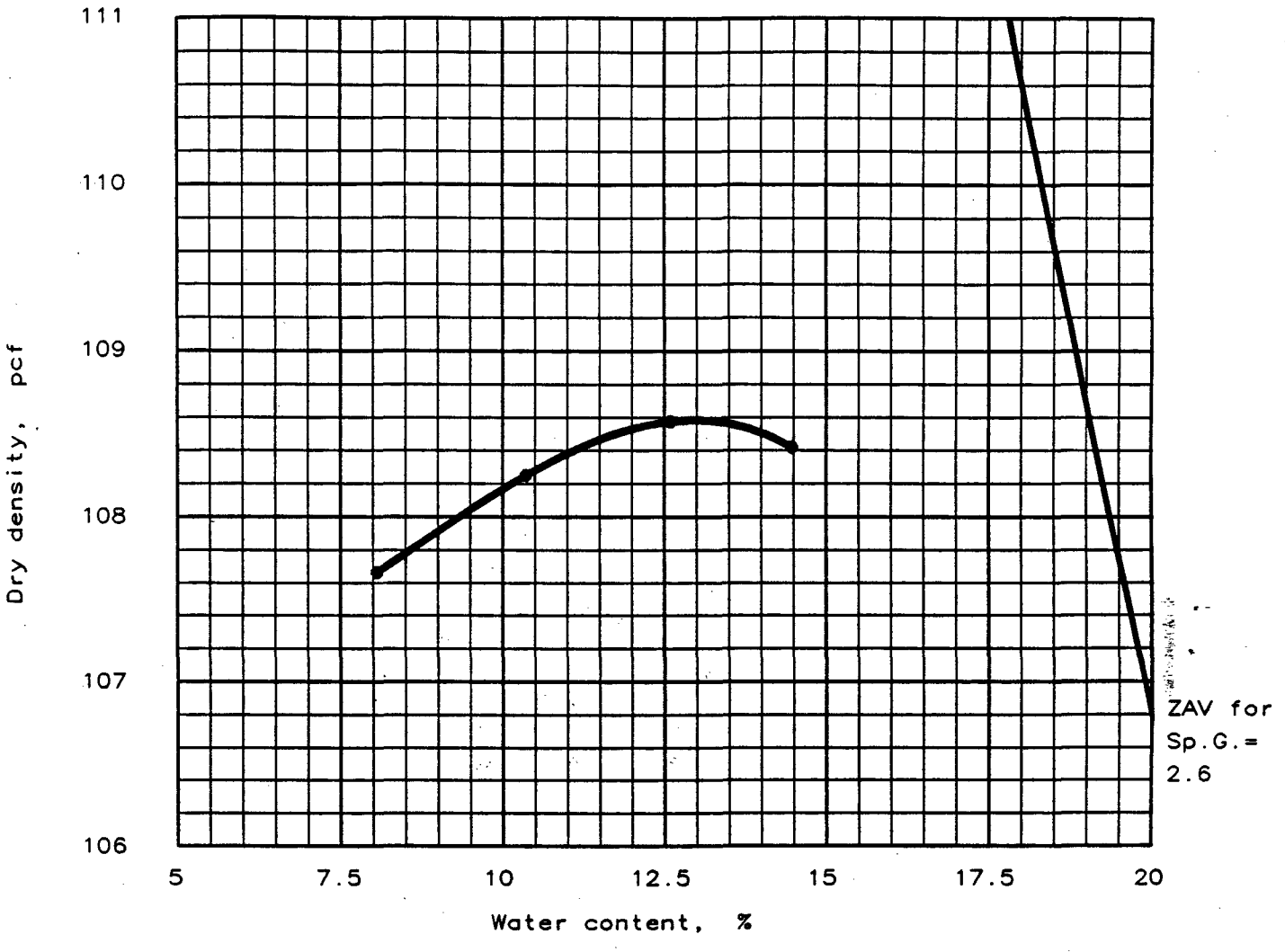
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING, INC.

Bryant B Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Modified" Proctor, ASTM D 1557, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						
		A-3						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 12.9 % Maximum dry density = 108.6 pcf	Light Grey Medium to Fine SAND

Project No.: 446-01631-13
Project: Trailridge Landfill, Side Slope Closure
Location: Proposed Filter Bed Sand Stockpile
CLIENT: England, Thims & Miller, Inc.
Date: 11-17-93

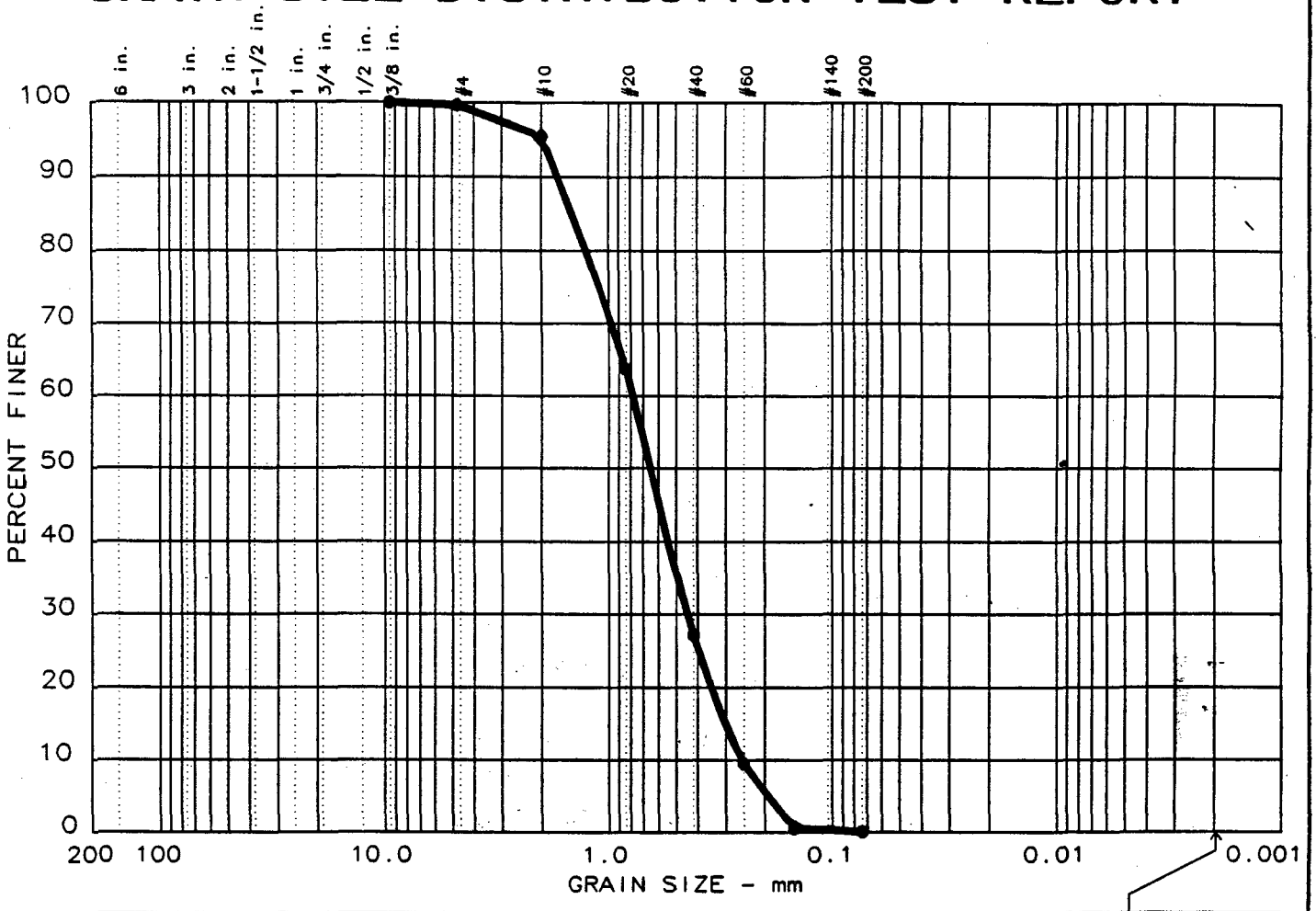
Remarks:
Proctor No. 9

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.3	99.6	0.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.46	0.78	0.65	0.445	0.3010	0.2532	1.00	3.1

MATERIAL DESCRIPTION	USCS	AASHTO
● Light Grey Medium to Fine SAND	SP	A-1-b

Project No.: 446-01631-13
Project: Trailridge Landfill, Side Slope Closure
● Location: Proposed Filter Bed Sand Stockpile

Date: 11-17-93

Remarks:

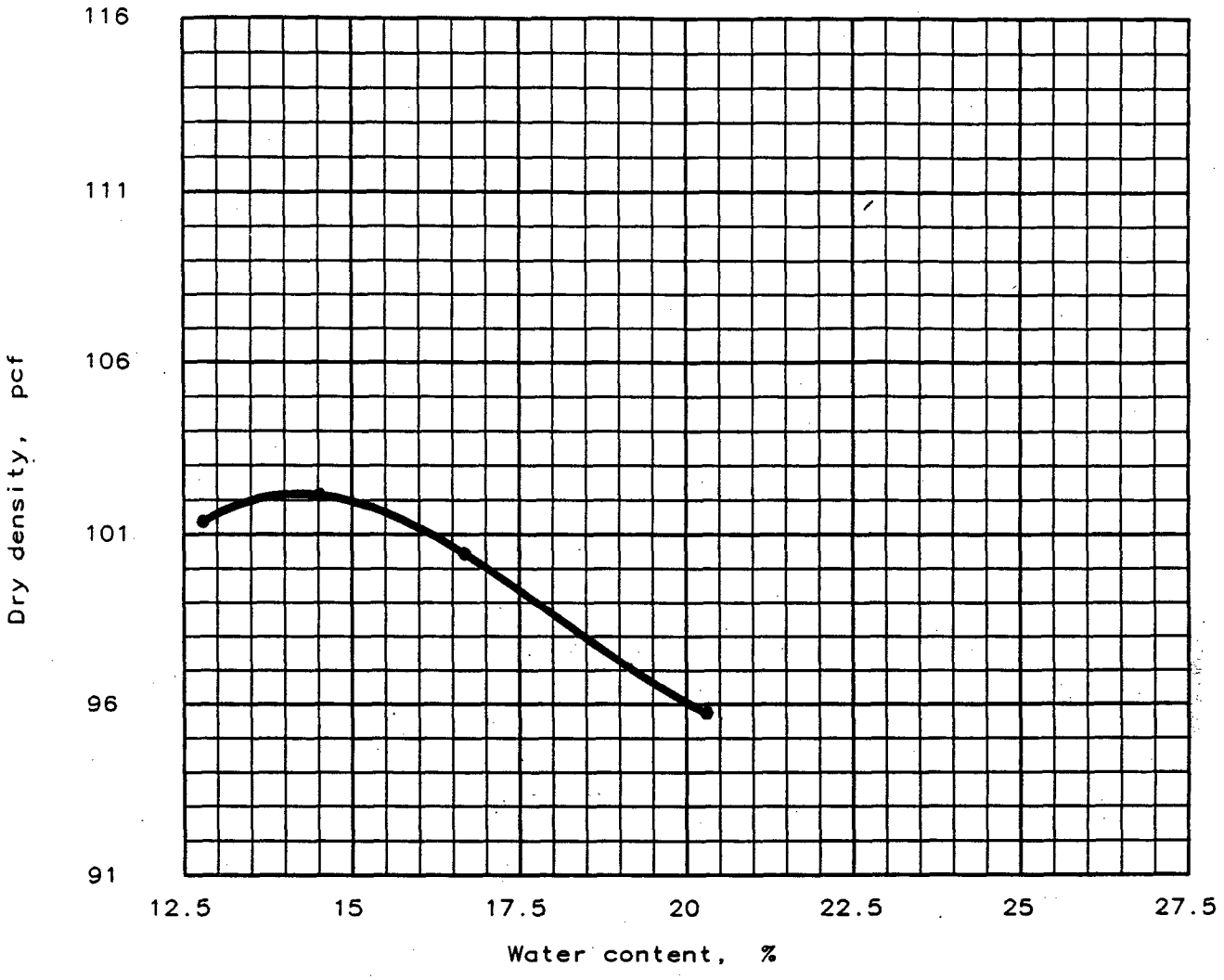
Proctor No. 9

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING, INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Modified" Proctor, ASTM D 1557, Method A, ASTM D 4718 correction applied

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 14.2 % Maximum dry density = 102.2 pcf	Dark Grey Slightly Silty Fine Sand with Few Roots

Project No.: 446-01631-13
Project: Trailridge Side Slope Closure
Location: Topsoil Stockpile
CLIENT: England, Thims & Miller, Inc.
Date: 11-22-93

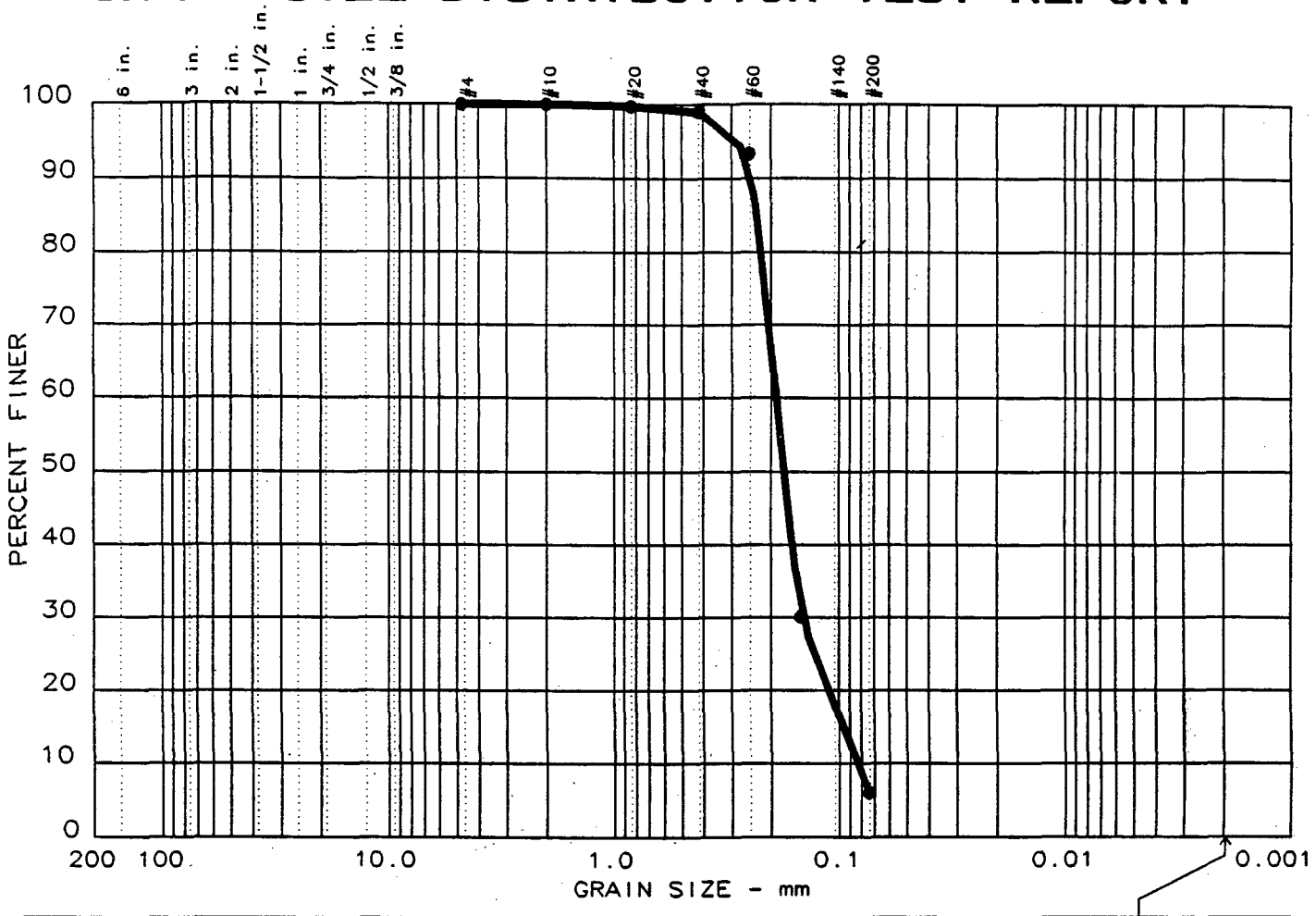
Remarks:
Proctor No. 10

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	94.0	6.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.23	0.19	0.18	0.148	0.0957	0.0830	1.39	2.3

MATERIAL DESCRIPTION	USCS	AASHTO
● Dark Grey Slightly Silty Fine SAND w/ Few Roots	SP-SM	A-3

Project No.: 446-01631-13
Project: Trailridge Landfill Sideslope Closure
● Location: Topsoil Stockpile

Date: 11-23-93

Remarks:

Proctor No. 10

GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING, INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

TRAIL RIDGE LANDFILL
SIDE SLOPE UNIT CLOSURE
QUALITY ASSURANCE AND
QUALITY CONTROL DOCUMENTATION
FOR
UNITS 9, 10 AND 11

FOR

TRAIL RIDGE LANDFILL
5110 U.S. Highway 310
P.O. Box 548
Baldwin, Florida 32234

PREPARED BY:

ENGLAND, THIMS & MILLER, INC.
3131 St. Johns Bluff Road South
Jacksonville, Florida 32246

AND

LAW ENGINEERING
3901 Carmichael Avenue
Jacksonville, Florida 32207

SEPTEMBER 1994
PROJECT NO: E94-17

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.
C.N. High Mathews, P.E., Exec. V.P.

RECEIVED
SOUTHEAST DISTRICT
APR 20 1995
DEP JACKSONVILLE

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:cl

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

NOGASSSC.-3

Florida Department of Environmental Regulation

Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

DER Form # 17-701.900(2)
Form Title Certification of Construction Completion of a Solid Waste Management Facility
Effective Date January 8, 1993
DER Application No.
(Filled 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

Cost: Estimate $ N/A **Actual $** 606,041 +/-

.te 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 Modifications **Dated:** 12-24-91

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 of Professional Engineer

REGfiles: 5/94

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.

TRAIL RIDGE LANDFILL
SIDE SLOPE UNIT CLOSURE
QUALITY ASSURANCE AND
QUALITY CONTROL DOCUMENTATION
FOR
UNITS 9, 10 AND 11

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IV. COMPACTED CLAY LAYER

V. TOP SOIL

VI. DOWNCOMER PIPE

VII. UNDERDRAIN - FILTER SAND

VIII. GAS WELL

IX. CONSTRUCTION PHOTOGRAPHS

APPENDICES:

A. REPORT OF FIELD DENSITY

B. RECORD OF DAILY RAINFALL

C. PROCTOR TEST REPORT WITH ASSOCIATED GRAIN SIZE DISTRIBUTION

WEEKLY PROGRESS REPORTS

England-Thims & Miller, Inc.
Consulting & Design Engineers
3131 St. Johns Bluff Road So. Jacksonville, FL 32216
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.

CONSTRUCTION PROGRESS MEETING

DATE: May 23, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:	Ken Bunnell	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Scott McCallister	Trail Ridge Landfill, Inc.
	Jimmy Purvis	Trail Ridge Landfill, Inc.
	W. Neil Rushing	City of Jacksonville
	Gene Palmer	Trail Ridge Landfill, Inc.
	Juanitta Clem	ET&M

CONTRACT

The contract between Trail Ridge Landfill, Inc. (Owner) and J. B. Coxwell Contracting (Contractor) has been executed by both parties. Trail Ridge Landfill will be sending the Contractor a Notice to Proceed today.

The Contractor must provide the performance bond immediately. The Contractor has provided their insurance certificate.

SCHEDULE

The Contractor has submitted a preliminary schedule which Donald Spencer said that he would like to revise and resubmit next week.

Juanitta Clem requested that the Contractor's schedule reflect that sod will be placed as soon as the top soil has been final graded.

INITIAL COVER

Jimmy Purvis said that he will have the initial cover on all three units completed by Wednesday of this week. Therefore, the Contractor can begin his final grading and compaction on Wednesday afternoon or Thursday morning.

Donald Spencer said that he hopes to have the initial cover work complete by Thursday or Friday and will contact Sunshine State Surveyors for as-builts of the initial cover.

CLAY PRE-QUALIFICATION

The clay borrow source has been tested by Ken Bunnell of Law Engineering. He stated that he expects the permeability results back by Tuesday afternoon or Wednesday morning. Juanitta stated that the clay pre-qualification form must be completed by the Contractor in coordination with Law Engineering before the Contractor can proceed with the test strip construction. Therefore, if the clay passes, Donald and Ken must get together as soon as possible to complete the clay pre-qualification form.

Juanitta also reminded the Contractor that the Test Strip Form must be completed before the full-fledged clay installation may begin.

POLLUTION PREVENTION PLAN

Juanitta requested a signed Pollution Prevention Plan from the Contractor as soon as possible. She also requested that the Contractor place hay bales in the roadside swale and around the inlet prior to the Contractor beginning his work.

GAS WELLS

The Contractor requested that the gas well be installed 3' south of the proposed location which moves the well away from the terrace. Donald stated that by moving the well it will be outside the path of a dozer when grading the terrace and therefore, in a better location for construction and maintenance.

SAFETY

Donald and the gas well driller will meet with Jimmy to review the Waste Management Safety procedures, etc.

TIE-IN TO EXISTING CLAY LAYER

The existing closed units have settled between 0.68' and 1.86'. Therefore, there must be a transition between the existing closure units and the new closure units. Juanitta provided a copy of a construction drawing showing how the transition must be made. Basically, the transition will be made on the first 10' strip of the new units. The clay between the two units must be constructed so that the clay becomes one homogeneous unit and there is no seam. Juanitta told the Contractor that he may have to uncover a portion of the existing clay to create this tie-in and that he must have the tie-in inspected by Ken Bunnell prior to covering it with the next lift of clay or vegetative cover.

Meeting Adjourned

cc: Attendees
David Coxwell
Pat Knapp
Doug Miller
Greg Mathes

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.

CONSTRUCTION PROGRESS MEETING

DATE: May 31, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:		
	Ken Bunnell	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Scott McCallister	Trail Ridge Landfill, Inc.
	Jimmy Purvis	Trail Ridge Landfill, Inc.
	W. Neil Rushing	City of Jacksonville
	Pat Knapp	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

CONTRACT

Trail Ridge Landfill sent the Contractor a Notice to Proceed on May 23, 1994.

The Contractor has provided the performance bond. Coxwell's Subcontractor, Griffin Remediation has provided their insurance certificate.

POLLUTION PREVENTION PLAN

Pat Knapp will have the signed Pollution Prevention Plan at the next weekly meeting.

INITIAL COVER

Donald Spencer said that the initial cover has been accepted and he will have Sunshine State on site today to as-built the initial cover.

CLAY PRE-QUALIFICATION

The clay borrow source has been tested and approved by both the Contractor and Ken Bunnell as Quality Control Monitor. Juanitta requested that the Pre-Qualification Form be finalized as soon as possible by Jim Horton, Quality Assurance Engineer.

TEST STRIP

The test strip was constructed (30' X 75') and tested on Thursday and Friday of last week. Ken stated that he expects permeability results back by the end of the day or tomorrow morning. The construction of the clay liner will not begin prior to receipt of the results. Further, Ken stated that he will have the Test Strip Form completed for the next weekly meeting.

Juanitta reminded Ken that the density of the clay layer will be set by the Quality Assurance Engineer, Jim Horton upon review of both the clay pre-qualification and test strip results. She requested that the density be set (in writing) as soon as possible, so the Contractor will know what density he must obtain. She reminded the Contractor that the density will be 80% Standard Proctor at a minimum.

SCHEDULE

The Contractor will provide a revised construction schedule at the next weekly meeting.

The Contractor plans to begin placement of clay on Thursday morning, weather permitting. Donald Spencer said that he will begin on the west end of Unit 9 and work in an easterly direction. He may also work Unit 10 at the same time.

The Contractor anticipates that Griffin Remediation will install the gas well this week. Ken Bunnell reminded the Contractor that Griffin Remediation must get their materials pre-qualified, prior to beginning construction of the gas well.

SAFETY

Donald and Griffin Remediation met with Jimmy Purvis and reviewed the Waste Management Safety procedures, etc.

TIE-IN TO EXISTING ANCHOR BERM

The tie-into the clay anchor berm was discussed and it was agreed that the stationing for the anchor berm may vary slightly from the draft as-builts. However, the Contractor must ensure that the clay liner on the cap ties into the clay anchor berm to create one homogeneous unit.

Meeting Adjourned

cc: Attendees
David Coxwell
Doug Miller
Greg Mathes
Jim Horton

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.

CONSTRUCTION PROGRESS MEETING

DATE: June 6, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:		
	Ken Bunnell	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Scott McCallister	Trail Ridge Landfill, Inc.
	Jimmy Purvis	Trail Ridge Landfill, Inc.
	Jim Horton	Law Engineering
	Pat Knapp	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

POLLUTION PREVENTION PLAN

Pat Knapp needs to get the signatures of his subcontractors and will submit the signed Pollution Prevention Plan this week.

INITIAL COVER

The initial cover has been as-built by Sunshine State.

CLAY PRE-QUALIFICATION

Juanitta Clem requested that the Pre-Qualification Form be finalized by Jim Horton, Quality Assurance Engineer this week.

TEST STRIP

The test strip was tested by Law Engineering and eight of the ten permeability results have been completed and all have passed. A problem occurred with the density results. Jim Horton explained that there were discrepancies between the field densities and the laboratory densities for the test strip. Upon evaluation, a new proctor test was conducted on the test strip material. Upon comparison of the proctor taken from the borrow source during the pre-qualification and the new proctor based upon the test strip material, it was found that the density of the test strip material was approximately 13 pounds less than the density of the borrow pit material. Based upon this new proctor, the density results

for the test strip are all over 80% of Standard Proctor which is consistent with the density results obtained in the lab for permeability samples.

Based upon the clay pre-qualification and test strip results, it was agreed that the minimum density for the clay layer will be set at 80% of Standard Proctor. Jim Horton will finalize the test strip form and prepare written documentation on the density testing/results this week.

SCHEDULE

The Contractor provided a revised construction schedule which provides for a 150 day schedule. It was agreed that the beginning date is the date of the notice to proceed - May 23, 1994. (Note: The completion date would be October 19, 1994 which is not in accordance with the Contract with requires completion by September 30, 1994.)

CLAY LAYER

UNIT 9 - The first lift of clay has been placed but has not been tested.
UNIT 10 - The first lift of clay has been placed but has not been tested.
UNIT 11 - The clay material placement has not begun. Donald Spencer stated that he plans to place the first lift this week.

Donald stated that the clay layer has been tied into the anchor berm in Unit 9 and into the existing clay layer along the edge with no difficulties.

DOWNCOMER PIPE

The waste has been excavated in the downcomer locations on Units 9 and 10. The intermediate cover (backfill) has been placed and the testing is in progress. The Contractor hopes to place the clay layer today.

GAS WELL

The stone for the gas well has not been approved yet, therefore, the well installation can not begin. Ken Bunnell stated that one sample, which was not large enough, was tested and did not appear to pass. He is expecting a new large sample today. The Contractor plans to have the well installed this week.

RAIN DELAYS

There will be no rain delays requested for the month of May.

Meeting Adjourned

cc: Attendees
David Coxwell
Doug Miller
Greg Mathes
W. Neil Rushing

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.

CONSTRUCTION PROGRESS MEETING

DATE: June 13, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:	Ken Bunnell	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Scott McCallister	Trail Ridge Landfill, Inc.
	Jimmy Purvis	Trail Ridge Landfill, Inc.
	W. Neil Rushing	City of Jacksonville
	Pat Knapp	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

POLLUTION PREVENTION PLAN

Pat Knapp submitted the signed Pollution Prevention Plan on June 8, 1994 (Juanitta provided copies to Scott McCallister, Neil Rushing and Ken Bunnell).

INITIAL COVER

The initial cover on Unit 11 must be as-built by Sunshine State.

CLAY PRE-QUALIFICATION

The Pre-Qualification Form was provided by Ken Bunnell, however, the form was not signed by Jim Horton. Ken will get the form signed and submitted.

TEST STRIP

The Test Strip Form was provided by Ken Bunnell, however, the form was not signed by Jim Horton. Ken will get the form signed and submitted.

CLAY LAYER

UNIT 9 - The first lift of clay has been placed and tested. The density was between 82 and 90 percent. Permeability results are expected back by Wednesday.

UNIT 10 - The first lift of clay has been placed and tested. The density was between 82 and 90 percent. Permeability results are expected back by Wednesday.

UNIT 11 - The clay material placement has not begun. Due to the rains last week, the Contractor was not able to place the first lift of clay on this unit. Donald Spencer stated that he plans to place the first lift this week.

DOWNCOMER PIPE

ACROSS Unit 9 - The first lift of clay has been placed and tested. The density was acceptable and permeability results are expected back by Wednesday.
The second lift has been placed but it has not been tested.

ACROSS UNIT 10 - The first lift of clay has been placed and tested. The density was acceptable and the permeability results are expected back by Wednesday.
The second lift has been placed but it has not been tested.

ACROSS UNIT 11 - The waste has not been excavated and therefore, clay material placement has not begun.

GAS WELL

The well driller qualifications were received by Juanitta Clem on June 8, 1994. Copies of the qualifications were provided to Ken Bunnell on the site. Juanitta provided copies to Trail Ridge Landfill, Inc. and the City of Jacksonville.

The stone for the gas well was approved last week and the gas well was installed.

Currently, the area around the well only has intermediate cover like the remainder of Unit 11. When the clay layer is installed, the Contractor will place clay around the well as an interim measure. Prior to completion, a bentonite plug will be placed around the well.

RAIN DELAYS

Due to the rains last week, the Contractor was only able to work on Monday. He was basically shut-down the remainder of the week. The Contractor will submit the rain delays at the end of the month.

Meeting Adjourned

cc: Attendees
David Coxwell
Doug Miller
Greg Mathes

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.

CONSTRUCTION PROGRESS MEETING

DATE: June 20, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:	Ken Bunnell	Law Engineering
	Scott McCallister	Trail Ridge Landfill, Inc.
	W. Neil Rushing	City of Jacksonville
	Pat Knapp	J.B. Coxwell Contracting
	Douglas C. Miller	ET&M

POLLUTION PREVENTION PLAN

Ken Bunnell and Scott McCallister need copies of executed Pollution Prevention Plan. ETM to provide.

INITIAL COVER

The initial cover on Unit 11 must be as-built by Sunshine State. No progress last week due to rain.

CLAY PRE-QUALIFICATION AND TEST STRIP

The Pre-Qualification Form was provided by Ken Bunnell, however, the form was not signed by Jim Horton. Doug Miller will talk to Jim Horton.

EROSION

Roadside ditch silt screen/hay bales need reinforcing.

Directions to Contractor:

1. Clean silt from roadside ditch down stream of Unit 9.
2. Clay on Units 9 and 10 need minor regrading from rain.

CLAY LAYER

UNIT 9 - The first lift of clay has been placed and tested. The density was between 82 and 90 percent. Permeability tests have passed

UNIT 10 - The first lift of clay has been placed and tested. The density was between 82 and 90 percent. Permeability tests have passed.

UNIT 11 - The clay material placement has not begun. Due to the rains last week, the Contractor was not able to place the first lift of clay on this unit. Clay placement is scheduled for this week, if weather allows.

DOWNCOMER PIPE

ACROSS Unit 9 - The first lift of clay has been placed and tested. The density was acceptable and permeability results passed.
The second lift has been placed and are awaiting test results.

ACROSS UNIT 10 - The first lift of clay has been placed and tested. The density was acceptable and the permeability results passed.
The second lift has been placed and is awaiting test results.

ACROSS UNIT 11 - Work in this area is on hold pending weather.

GAS WELL

Gas well was installed.

Currently, the area around the well only has intermediate cover like the remainder of Unit 11. When the clay layer is installed, the Contractor will place clay around the well as an interim measure. Prior to completion, a bentonite plug will be placed around the well.

RAIN DELAYS

Due to the rains last week, the Contractor was only able to work a limited schedule. The Contractor will submit the rain delays at the end of the month. The rain gauge was moved to the top of the hill from the Administration Building.

Meeting Adjourned

cc: Attendees
David Coxwell
Greg Mathes
Jim Gleeson

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.

CONSTRUCTION PROGRESS MEETING

DATE: June 27, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:		
	Ken Bunnell	Law Engineering
	W. Neil Rushing	City of Jacksonville
	Pat Knapp	J.B. Coxwell Contracting
	Douglas C. Miller	ET&M
	Jim Purvis	Trail Ridge Landfill, Inc.

INITIAL COVER

The initial cover on Unit 11 regrading and lst lift is scheduled for this week.

EROSION

Roadside ditch silt screen/hay bales need reinforcing again after weekend rains.

CLAY LAYER

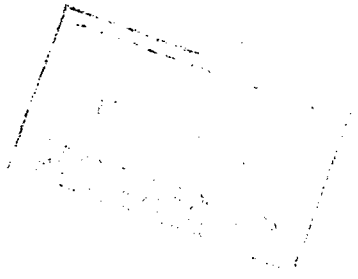
UNIT 9 - The first lift of clay has been placed and tested. The density was between 82 and 90 percent. Permeability tests have passed. 2nd lift awaiting results (Wed.).

UNIT 10 - The first lift of clay has been placed and tested. The density was between 82 and 90 percent. Permeability tests have passed. 2nd lift awaiting results (Wed.).

UNIT 11 - Clay placement is scheduled for this week, if weather allows.

DOWNCOMER PIPE

ACROSS Unit 9 - Complete (both lifts).
ACROSS UNIT 10 - Complete (both lifts).
ACROSS UNIT 11 - This work is scheduled for this week.



GAS WELL

Gas well was installed.

RAIN DELAYS

Due to the rains last week, the Contractor was only able to work a limited schedule. 1 1/2" of rainfall received during the past weekend.

Meeting Adjourned

cc: Attendees
David Coxwell
Greg Mathes
Jim Gleeson

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.

CONSTRUCTION PROGRESS MEETING

DATE: July 5, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:		
	Ken Bunnell	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Scott McCallister	Trail Ridge Landfill, Inc.
	Jimmy Purvis	Trail Ridge Landfill, Inc.
	Pat Knapp	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

CLAY LAYER

UNIT 9 - Both lifts of clay have been placed and tested. All test results have been completed and passed the QA/QC requirements.

UNIT 10 - Both lifts of clay have been placed and tested. All test results have been completed and passed the QA/QC requirements.

UNIT 11 - Both lifts of clay have been placed and tested. The density results have been completed and passed the QA/QC requirements. The permeability results are pending.

DOWNCOMER PIPE

ACROSS Unit 9 - Both lifts of clay have been placed and tested. All test results have been completed and passed the QA/QC requirements.

ACROSS UNIT 10 - Both lifts of clay have been placed and tested. All test results have been completed and passed the QA/QC requirements.

ACROSS UNIT 11 - Both lifts of clay has been placed and tested. The density was acceptable and the permeability results are pending.

Pat Knapp stated that they will utilize the downcomer pipe materials on site as much as possible. Juanitta Clem reminded the Contractor that a deductive change order for these materials must be made to the City. She requested that Pat Knapp determine which materials are on site and submit the results. Pat stated that he knew he would have to order an additional 30" manifold and additional 30" pipe but he hoped that there would be sufficient 18" pipe on site.

Donald Spencer stated that he hopes to begin the placement of the downcomer pipe this week. He estimates that placement of the downcomer pipe and corresponding underdrain will take approximately 3 days.

Juanitta Clem reminded the Contractor that he may encounter the bottom liner when he removes the temporary downcomer pipe near the anchor berm. She requested that the Contractor make sure that Ken Bunnell is present during that removal. She also stated that if there is any breach in the bottom liner that National Seal would have to be brought in to repair the liner. Therefore, the Contractor may wish to uncover this area as soon as possible, so it would not interrupt his schedule.

TOP SOIL

Top soil has been stockpiled on site and all pre-qualification testing has been completed for the stockpiled material. However, a second source may be required. Ken Bunnell will get with Donald Spencer and get this second source tested and pre-qualified.

SODDING

Juanitta Clem requested that the Contractor proceed with placement of the sod as soon as possible, after placement of the top soil.

GAS WELL

The gas well has been installed and all paperwork including the well log have been provided to Ken Bunnell.

Meeting Adjourned

cc: Attendees
David Coxwell
Doug Miller
Greg Mathes
Jim Gleeson
W. Neil Rushing

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.

CONSTRUCTION PROGRESS MEETING

DATE: July 11, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:		
	Ken Bunnell	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Scott McCallister	Trail Ridge Landfill, Inc.
	Jimmy Purvis	Trail Ridge Landfill, Inc.
	Pat Knapp	J.B. Coxwell Contracting
	Juanitta Clem	ET&M

CLAY LAYER

UNIT 9 - Completed including testing.
UNIT 10 - Completed including testing.
UNIT 11 - Both lifts of clay have been placed and tested. The density results have been completed and passed the specifications. The permeability results are pending.

DOWNCOMER PIPE

ACROSS Unit 9 - Completed including testing.
ACROSS UNIT 10 - Completed including testing.
ACROSS UNIT 11 - Both lifts of clay has been placed and tested. The density was acceptable and the permeability results are pending.

The temporary downcomer was removed last week and there was a breach in the bottom liner (on the outside of the anchor berm). National Seal is on site today to repair the liner.

The Contractor is in the process of placing downcomer pipe and underdrain including the sand. Ken Bunnell stated that he will be testing the underdrain sand (1 test per unit), prior to placement of top soil.

TOP SOIL

Donald Spencer stated that he hopes to complete the downcomer piping by Wednesday (weather provided) and begin placement of top soil.

SODDING

Donald Spencer stated that he will begin placement of sod next week. Further, he stated that he hopes to complete the project by the end of the month, weather provided.

RAIN DELAYS

Juanitta Clem stated that she had received the rain delay letter for the month of June from the Contractor and had submitted a letter to the Department of Environmental Protection requesting a time extension of 30 days based upon the Contractor's rain delays.

Meeting Adjourned.

cc: Attendees
David Coxwell
Doug Miller
Greg Mathes
Jim Gleeson
W. Neil Rushing

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.

CONSTRUCTION PROGRESS MEETING

DATE: July 18, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:		
	Ken Bunnell	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Scott McCallister	Trail Ridge Landfill, Inc.
	Jimmy Purvis	Trail Ridge Landfill, Inc.
	Pat Knapp	J.B. Coxwell Contracting
	W. Neil Rushing	City of Jacksonville
	Juanitta Clem	ET&M

CLAY LAYER

UNIT 9 - Completed including testing.
UNIT 10 - Completed including testing.
UNIT 11 - Completed including testing. Permeability results which were previously pending passed the QA/QC requirements.

Note: The overall thickness of the clay layer is 12.0 inches to 13.5 inches.

DOWNCOMER PIPE

ACROSS UNIT 9 - Completed including testing.
ACROSS UNIT 10 - Completed including testing.
ACROSS UNIT 11 - Completed including testing. Permeability results which were previously pending passed the QA/QC requirements.

National Seal repaired the breach in the liner last Monday.

The downcomer piping and underdrains have been completed except for the sand-cement rip rap. The rip rap must be installed after the placement of top soil.

Juanitta Clem requested the paperwork from Pat Knapp so the deductive Change Order for the on-site downcomer materials could be developed.

TOP SOIL

Donald Spencer stated that he has begun the placement of top soil. He plans to have Units 10 and 11 completed by Wednesday or Thursday and will have Sunshine State on site to as-built the final cover at that time.

SODDING

Donald Spencer stated that if the top soil is complete and the as-builts are done on Units 10 and 11, he will begin placement of sod on those units on Thursday. He hopes to complete the project with two weeks, weather provided.

GAS WELL

The bentonite plug around the gas well was installed last week. Therefore, the gas well is now complete.

RAIN DELAYS

Juanitta Clem has submitted a letter to the Department of Environmental Protection (DEP) requesting a time extension of 30 days based upon the Contractor's rain delays. To date, there has been no reply from the DEP.

Meeting Adjourned.

cc: Attendees
David Coxwell
Doug Miller
Greg Mathes
Jim Gleeson

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.

CONSTRUCTION PROGRESS MEETING

DATE: July 25, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:		
	Harlon Wiggins	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Jimmy Purvis	Trail Ridge Landfill, Inc.
	Gene Palmer	Trail Ridge Landfill, Inc.
	Pat Knapp	J.B. Coxwell Contracting
	W. Neil Rushing	City of Jacksonville
	Juanitta Clem	ET&M

CLAY LAYER

UNIT 9 - Completed including testing.
UNIT 10 - Completed including testing.
UNIT 11 - Completed including testing.

DOWNCOMER PIPE

ACROSS UNIT 9 - Completed including testing.
ACROSS UNIT 10 - Completed including testing.
ACROSS UNIT 11 - Completed including testing.

The downcomer piping and underdrains have been completed except for the sand-cement rip rap. The rip rap will be installed after the placement of top soil.

Juanitta Clem stated that the paperwork from Pat Knapp for the deductive Change Order for the on-site downcomer materials has been received. Juanitta requested that Pat Knapp review the quantity of underdrain material because it appeared in excess of the previously approved amount. She requested that Pat revise the paperwork if necessary.

TOP SOIL

Placement of top soil was started last week. Placement of top soil will continue this week. Approximately 45% of the top soil on Units 10 & 11 has been as-built by Sunshine State.

Donald reminded Juanitta that the rip-rap will have to be as-built surveyed after placement and that the rip-rap could not be constructed until after top soil placement.

SODDING

Sod has been placed on approximately 45% of Unit 10 and approximately 25% of Unit 11. Sodding will continue this week.

SCHEDULE

Donald hopes to complete the job within two weeks, weather provided. Based upon that, Juanitta requested that Harlon begin to prepare the QA/QC documentation for the certification. Further, the final inspection has been tentatively set for Monday, August 8, 1994 at 9:30 AM.

GAS WELL

The gas well is complete.

RAIN DELAYS

Juanitta Clem has submitted a letter to the Department of Environmental Protection (DEP) requesting a time extension of 30 days based upon the Contractor's rain delays. To date, there has been no reply from the DEP.

Meeting Adjourned.

cc: Attendees
David Coxwell
Doug Miller
Greg Mathes
Jim Gleeson
Scott McCallister

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.

CONSTRUCTION PROGRESS MEETING

DATE: August 1, 1994 @ 9:30 AM

PLACE: Trail Ridge Landfill Office

REFERENCE: Trail Ridge Landfill
Side Slope Closure - Units 9, 10 & 11
ET&M No. E94-17

Attendees:		
	Harlon Wiggins	Law Engineering
	Donald Spencer	J.B. Coxwell Contracting
	Pat Knapp	J.B. Coxwell Contracting
	W. Neil Rushing	City of Jacksonville
	Juanitta Clem	ET&M

CLAY LAYER

UNIT 9 - Completed including testing.
UNIT 10 - Completed including testing.
UNIT 11 - Completed including testing.

DOWNCOMER PIPE

ACROSS UNIT 9 - Completed including testing.
ACROSS UNIT 10 - Completed including testing.
ACROSS UNIT 11 - Completed including testing.

The downcomer piping and underdrains have been completed except for the sand-cement rip rap. One rip rap pad has been installed on Terrace 2 and the remainder will be installed today.

Pat Knapp will revise the paper work for the deductive Change Order for the on-site downcomer materials. Upon review of the quantity of underdrain material previously approved, it was determined that only 500 LF was included.

Neil Rushing is to call Juanitta regarding the Change Order number, contract number, etc. so she can complete the City Change Order Form.

TOP SOIL

UNIT 9 - Currently being placed.
UNIT 10 - Completed including testing.
UNIT 11 - Completed including testing.

SODDING

UNIT 9 - Will be placed upon completion of top soil.
UNIT 10 - 75% complete.
UNIT 11 - 75% complete.

Sodding will continue this week.

SCHEDULE

Donald hopes to complete the job next week, weather provided. The final inspection has been tentatively set for Monday, August 15, 1994 at 9:00 AM.

Meeting Adjourned.

cc: Attendees
David Coxwell
Doug Miller
Greg Mathes
Jim Gleeson
Jimmy Purvis

RECORD OF DAILY OBSERVATIONS

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** May 25, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On May 25, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:30 A.M. The contractor, J.B. Coxwell, was engaged in preparing cover subgrade for Trailridge. The Coxwell foreman (Donald) and our representative reviewed progress and discussed construction procedures. We were informed that the subgrade for the clay cover test strip should be ready for testing in the afternoon.

Our representative left the site at 10:00 AM and returned at 12:30 P.M. Compaction tests were obtained in the test strip subgrade. Two tests were taken and both met the 90 percent density requirement. A trip to the pit in Lawtey was made to pickup a second topsoil sample to check the pH again. The pH in the initial sample was found to be 4.38 which is slightly below the required value of 5-7.

The test strip is located on cell 10 at the west end of the site from Sta. 113+46 to 113+78 and from 97+90 to 98+65. The clay cover permeability test results from pit No.1 at Lawtey were received today and indicated a value of 1.2×10^{-8} indicating that the clay is acceptable for cover use.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** May 26, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On May 26, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 8:30 A.M. J.B. Coxwell was preparing to spread the first load of clay cover material. The contractor used three trucks to haul the clay material from the Lawtey borrow pit.

As the trucks arrived on site, two random loads were sampled for moisture content. The percent moistures on the samples were found to be 24.1 percent and 28.2 percent. The contractor experienced mechanical problems with the dozer placing the clay causing one hour of down time.

The first 6-inch lift of clay was placed, compacted and test. Permeability and thickness samples were obtained adjacent to the density test locations. After compaction was achieved the contractor began placing the second lift of material on the test strip but did not complete this lift today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** May 27, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On May 27, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:30 A.M. J.B. Coxwell was completing and compacting the second lift of the test strip.

After completion, compaction tests, thickness checks and permeability samples were obtained. During compaction, three samples were taken for field moisture. The results indicated moistures of 23.8 percent, 24.9 percent and 25.3 percent. The contractor worked on the subgrade on cells 9 and 10 and started on cell 11 today. The subgrade is scheduled to be topoed Tuesday A.M. and then tested for compaction and thickness.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** May 31, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On May 31, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:30 A.M. The contractor, J.B. Coxwell, was engaged in spreading and compacting soil on cells 9 and 10.

In the weekly site meeting, Coxwell officially accepted the initial cover subgrade from Trailridge. After grading and compaction was completed on the initial subgrade by the contractor, density tests and thickness checks were obtained on cells 9 and 10 only. Both cells met the density and thickness test requirements.

Sunshine Surveyors "topoed" slopes 9 and 10 today. Griffin Remediation did not show up for the third time and have no materials on site to sample for acceptance.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 2, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 2, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. Overnight rains in the area did not appear to affect the project site. The rain gauge at the leachate facility showed zero.

J.B. Coxwell experienced minor delays at the pit in Lawtey due to the rain. The contractor hauled clay until approximately 5:30 P.M. today. The tie-in of clay between the existing cells 5 & 6 and cell 9 was made today on the first 6-inch lift. The existing clay was tapered toward cell 9 and the new fill clay was tracked in and bonded to the old clay.

Several thickness checks were obtained on cell 9 and the results indicated the cover clay to be from 12 inches to 18 inches thick. The contractor was informed of these results and measured the thickness in additional locations and printed each location.

The contractor began cutting the excess clay from cell 9 and either stockpiling it or using it where possible. The contractor completed the first lift of clay over a large section of cell 10 today which is scheduled to be printed and clipped tomorrow, June 3, 1994.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 3, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 3, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 8:00 A.M. J.B. Coxwell continued to place cover clay from the stockpiles on site, making the tie-in between existing cell 7 and cell 10.

The tie-in clay soils were tracked in after tapering the existing clay and over lapping with the new clay. Areas on the slope of cell 9 found to be too thick on Thursday, June 2, 1994, were printed and the contractor cut the clay back to the required grade and thickness.

The contractor spent the majority of the day balancing and compacting the clay. Griffin Remediation submitted one 50 pound sample of rock to be used for gas well #4 aggregate, but did not submit a sand sample or certification of the bentonite proposed for use. The rock sample was tested for gradation and found to be unacceptable. J.B. Coxwell was informed of the test results today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 4, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 4, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:30 A.M. J.B. Coxwell was unable to work the surface of the clay cover this A.M. due to one tenth of an inch of rain received over night, verified by the rain gauge located at the leachate site.

The contractor excavated the area for downcomer D16, from approximately Sta. 98+00 on cell 10 to the bottom of cell 9. Trash was encountered which had to be excavated, hauled off and the site was backfilled with initial cover material to allow 18-inches of initial cover beneath the downcomer pipe and one foot of cover clay.

In-place density tests and depth checks were obtained in the downcomer trench and were found to be in compliance. A visual inspection was performed by our representative and Donald Spencer with the contractor, J.B. Coxwell. During excavation by the contractor near the anchor berm, no sign of contact or disturbance of the liner was observed.

The contractor worked until 4:30 P.M. and shaped up all areas before leaving. The contractor spent part of the day working the initial cover on cell 11.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 6, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 6, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 8:00 A.M. The rain gauge reading indicated eight tenths of an inch of rain since the last reading was recorded on Saturday morning June 4, 1994.

Minor soil erosion on the downcomer trench had to be backfilled by J.B. Coxwell and retested for compaction prior to placement of the cover clay in the trench. The contractor was able to place clay in the trench bottom before it rained today.

Very heavy rain began at approximately 1:50 P.M. depositing seven tenths of an inch in less than 20 minutes. Lighter rains continued from about 2:10 P.M. on. The contractor stopped work and safed up equipment at approximately 1:55 P.M.

Griffin Remediation brought a drill rig on site today. A sample of the filter rock was picked up from material stockpiled at the suppliers location, (standard sand and silica) on 8th Street in Jacksonville. Gradations were run in the lab according to ASTM D 448 and the material was found to be acceptable as #24 stone which had been used in previous wells. A sample, to be used in gas well #4, was delivered today and found to be a clean silica sand and noncohesive.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 7, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 7, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:30 A.M. The rain gauge at the leachate station indicated 1.5 inches of rain since 8:00 A.M. yesterday, June 6, 1994.

Visual inspection of the slopes indicated that little erosion has occurred at this time. Rain continued this morning through 9:00 A.M. The contractor sent employees home due to rain since they were unable to work. Griffin Remediation was on the site this morning but were also unable to work.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 8, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 8, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. A light rain was falling on the site at this time. The rain gauge indicated 1.25 inches of rainfall from 7:30 A.M. June 7, 1994 until 7:00 A.M. this morning, June 8, 1994. Rainfall was intermittent throughout the day.

J.B. Coxwell was able to use a dozer to assist Griffin Remediation in getting their drill rig to the gas well #4 location, however, Griffin did not start the gas well today. We understand materials for the gas well are scheduled to be delivered to the site first thing tomorrow A.M. (June 9, 1994). The contractor (J.B. Coxwell) was unable to perform any other work today because of the site being wet and intermittent rainfall. This is the second rain-out day for this project.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 9, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 9, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The contractor, J.B. Coxwell was engaged in cleaning up the site and preparing to assist Griffin Remediation.

Griffin started on gas well G4 at 8:30 A.M. The elevations by Sunshine State Surveyors indicated 41 feet to the bottom of the well showing the top grade at elevation 188+00 and the bottom grade at 147+00 according to plans. Griffin drilled a 15-inch diameter hole to exactly 41 feet from the ground surface. The rock for the gas well arrived at 11:30 A.M. Griffin glued and connected two 20 foot sections of 8-inch diameter slotted schedule 80 pipe together with a closed end bottom cap and inserted them into the hole with the remaining section being solid pipe. The pipe was held centered as the rock was placed in the hole around it.

Compaction tests and permeability samples on the first 6-inch lift of clay were obtained today on cells 9, 10 and one downcomer D16. The rain gauge indicated .35 inches of rainfall at 7:00 A.M. today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. **DATE:** June 9, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 9, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The contractor, J.B. Coxwell was engaged in cleaning up the site and preparing to assist Griffin Remediation.

Griffin started on gas well G4 at 8:30 A.M. The elevations by Sunshine State Surveyors indicated 41 feet to the bottom of the well showing the top grade at elevation 188+00 and the bottom grade at 147+00 according to plans. Griffin drilled a 24-inch diameter hole to exactly 41 feet from the ground surface. The rock for the gas well arrived at 11:30 A.M. Griffin glued and connected two 20 foot sections of 8-inch diameter slotted schedule 80 pipe together with a closed end bottom cap and inserted them into the hole with the remaining section being solid pipe. The pipe was held centered as the rock was placed in the hole around it.

Compaction tests and permeability samples on the first 6-inch lift of clay were obtained today on cells 9, 10 and one downcomer D16. The rain gauge indicated .35 inches of rainfall at 7:00 A.M. today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 10, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 10, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:30 A.M. The rain gauge indicated 1.3 inches of rain fall since yesterday A.M., June 9, 1994. The weather was partly cloudy all day.

J.B. Coxwell spent the day in what they refer to as a recovery day. The contractor reworked the lower section of slope 9 from the anchor berm to the ditch at the edge of the service road. The washout material was removed from the ditch and hay bales were reset.

In the afternoon the contractor began to rework and rebalance the slopes on cell 11. Stabilizing material was hauled in today and stockpiled in anticipation of hauling clay tomorrow, (Saturday) June 11, 1994 for the second 6-inch lift of cells 9 and 10. Due to the heavy rains this week, Waste Management has had to drop back to pushing trash from the top of the haul road. This limits access to the slopes to haul clay for the second lift.

J.B. Coxwell postponed bringing in clay until Monday, June 13, 1994 in hopes that a joint effort between Waste Management and J.B. Coxwell over the weekend will help alleviate this problem.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 11, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 11, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 10:30 A.M. J.B. Coxwell was again redressing rain damaged areas. The rain gauge indicated 8 tenths of an inch of rain had occurred overnight.

J.B. Coxwell's foreman plans to make a trip to the site on Sunday, June 12, 1994 to determine whether or not clay can be hauled on site Monday, June 13, 1994.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 13, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 13, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. Trailridge records indicate that 1.3 inches of rain fell between Saturday and Sunday A.M. and no rain between Sunday and this morning.

J.B. Coxwell was engaged in reworking the slopes and ditches along the service road repairing rain damage including replacing the hay bales.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 14, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 14, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 8:30 A.M. Record of rainfall measured by the rain gauge indicated 3 tenths of one inch of rain had *fallen since yesterday, June 13, 1994.*

Donald Spencer, the foreman for J.B. Coxwell, requested that compaction tests on the second 6-inch lift of clay liner material in downcomer D16 be taken as soon as the slopes were dry enough. The site was walked and observed for any problem areas and pictures were taken. Juanitta Clem of England, Thims & Miller, Inc. requested pictures be taken throughout this project.

At 11:00 A.M. the slopes were dry enough and density tests were obtained. The in-place density test results met the minimum 80 percent requirement and permeability samples were obtained. The contractor was unable to do any site work today and recorded today as a recovery day. Waste Management worked on rebuilding the haul road Coxwell will require access to when they resume work.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 15, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 15, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauge records indicated no rainfall occurred on the project site since yesterday morning.

J.B. Coxwell worked on the side slope of cell 11 and on rebuilding the terrace between cells 10 and 11 at the top of cell 10. The contractor began cleaning out the terrace at the top of cell 9 in anticipation of placing the second lift of clay liner on cells 9 and 10 on June 16, 1994.

Light rain showers began just before 2:00 P.M. Heavy rain started with thunder and lightning at about 2:10 P.M.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 16, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 16, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauge indicated 0.5 inches of rain overnight.

After J.B. Coxwell did minor work to make the site traversable, he began to haul cover clay using seven trucks. The majority of the clay was spread over the slopes of cells 9 and 10 until rain began at approximately 4:00 P.M. At this time, the clay was stockpiled on the slope of cell 10.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 17, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 17, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauge records located near the leachate tank indicated 4 tenths of an inch of rain since yesterday, June 16, 1994, however, the rain gauge behind the administration office indicated 7 tenths of rain had fallen.

The rain gauge from behind the administration building has been moved to the top of the hill to try to get a more accurate determination of the amount of rain fall occurring on the project site. The contractor worked on cleaning up and shaping up the slopes to help prevent erosion.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 18, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 18, 1994, a representative of Law Engineering, Inc. (LAW) traveled to the subject project site to check for rain damage and observe work being performed by J.B. Coxwell.

Both rain gauges indicated no rain received since yesterday, although on site personnel indicated that light rains had occurred. The contractors operator did not show up and no work was being performed on site by J.B. Coxwell today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 20, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 20, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:30 A.M. The rain gauge at the leachate station and the one located at the top of the hill both indicated that 3 tenths of an inch of rain fell on the project site between Saturday morning, June 18, 1994, and this morning, June 20, 1994.

J.B. Coxwell personnel were engaged in preparing the haul road to accept traffic hauling cover clay today. The contractor used eight trucks and stockpiled clay on the slope of cell 10 until about 2:00 P.M.; at which time the slope was dry enough to work on safely with equipment. The contractor spread clay on the cell 10 slope today. This is the second 6-inch lift of cover clay for cell 10.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 21, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 21, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauge indicated 4 tenths of an inch of rain had fallen overnight.

J.B. Coxwell was able to dress-up the haul road sufficiently to haul cover clay today. The contractor used seven trucks to haul from the borrow pit today. The clay was placed on cell 9 and was used to finish cell 10.

A trip to the clay pit was made today to visually inspect for clay quantity excavated. Approximately half of the pit has been excavated at this time.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 22, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 22, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. Both rain gauges indicated no rain since yesterday, June 21, 1994, morning.

The contractor, J.B. Coxwell continued to haul clay from the pit today and stockpiled the material on top of cell 11 for use on cell 11 when the "Topo" is completed. The contractor used material stockpiled on cell 10 to work towards balancing out and completing the slopes on cells 9 and 10.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 23, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 23, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. Both rain gauges indicated no rain had fallen since yesterday, June 22, 1994, morning.

The contractor, J.B. Coxwell was engaged in final grading slopes on cells 9 and 10 this morning as well as trying to rebuild the terrace at the base of cell 11 to prepare for "Topo" shots.

The prewelded 30-inch diameter manifold and remaining pipe supplies arrived today and welds were visually inspected by a LAW's representative and Mr. Donald Spencer of J.B. Coxwell. The welds appeared to be acceptable based on our visual inspection.

In-place density tests were obtained on the slopes for cells 9 and 10 today and found to be above 80 percent of the relative density as determined by the ASTM D698 compaction test. Permeability samples were also taken and delivered to Law Engineering's lab today by noon.

Intermittent showers began at approximately 12:30 P.M. and between 1:30 P.M. and 2:00 P.M. the contractor stopped work because of the rain. The rain gauge indicated two tenths of an inch of rain fell before 3:00 P.M. today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 24, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 24, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. Rain gauges indicated 1.5 inches of rain had fallen since yesterday, June 23, 1994, morning which included the rain levels observed midday yesterday.

Cells 9, 10 and 11 showed no signs of damaging erosion. However, from the anchor berm to the roadside ditch, erosion had occurred and the ditch was full of soil. A few hay bales had been washed out and others had been overrun by the water.

J.B. Coxwell was unable to work on the slopes today; however, he did rework the slope from the anchor berm down, excavated the ditch and replaced hay bales and temporary weirs in the ditch.

Total rainfall recorded this week on site: 2.2 inches

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 27, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 27, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauge indicated 1.5 inches of rain had fallen on the project site from Friday, June 24, 1994, at the end of the work day until Monday, June 27, 1994 at 7:00 A.M. Trailridge personnel indicated that the rain actually occurred between Saturday night and Sunday morning.

J.B. Coxwell personnel spent the day regrading cell 11 and trying to dry material out to compact it.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 28, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 28, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauge indicated no rain since yesterday, June 27, 1994 morning.

J.B. Coxwell continued to work on the slope and terrace on cell 11 in an effort to get it ready for a "Topo" tomorrow. Grades were set by Donald Spencer and the material was worked both for grade and compaction. At this time Sunshine State Surveyors is scheduled to be on site for grades on cell 11 at 8:00 A.M. tomorrow, June 29, 1994.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 29, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 29, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauges indicated no rainfall from yesterday, June 28, 1994, morning until this morning, June 29, 1994.

J.B. Coxwell finished final grading the slope and terrace on cell 11 before Sunshine State Surveyors arrived at 8:00 A.M. The "Topo" was found to be acceptable and the in-place density tests met the requirements. The contractor began placing stockpiled clay on the slopes until trucks began delivering clay from the pit. The contractor hauled until late completing over half of the first lift of clay on the slope today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 30, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On June 30, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 6:30 A.M. In-place density tests were obtained on the first 6-inch lift of clay on cell 11 and all tests passed. Permeability samples were also obtained and delivered to Law Engineering's lab first thing this morning. (Correction to yesterdays, June 29, 1994 report - all clay on the first lift was placed and compacted by the end of the day).

J.B. Coxwell continued to haul clay today until enough arrived on site to complete the second 6-inch lift on cell 11 and additional clay was stockpiled for use in the downcomer when it is excavated. The contractor began hauling topsoil and stockpiling it on site after clay hauling was completed.

The rain gauges indicated no rain from yesterday morning, June 29, 1994 through this morning, June 30, 1994. Rain began at approximately 4:20 P.M. stopping compaction efforts on the top layer. The contractor continued to work on shaping the site. Rain stopped at 4:50 P.M.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: *England, Thims & Miller, Inc.* **DATE:** July 1, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 1, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 6:30 A.M. The rain gauges indicated that one tenth of an inch of rain fell apparently in yesterday afternoons shower.

When the second lift of clay on cell 11 was dry enough, the contractor final bladed and compacted it. Density tests indicated the clay met the 80 percent minimum requirements and permeability samples were obtained. The contractor then excavated for the downcomer on the slope of cell 11. After checking for at least 18-inches of initial cover over on the garbage, compaction was performed and a passing density test was obtained.

The contractor placed clay in two 6-inch lifts in the downcomer. Density tests, thickness checks and permeability samples were obtained. Coxwell's trucks continued to haul topsoil and stockpile the material on site until all the available topsoil from the Lawtey pit had been delivered. All cover clay material has been placed and tested as of today with permeability results pending.

Total rain for this week was recorded at 1.6 inches.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 5, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 5, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. Rain gauges indicated 7 tenths of an inch of rain had fallen since Friday, July 1, 1994.

J.B. Coxwell balanced out the clay on the slopes and prepared the terraces for drainage pipe installation. Sand for the drains was ordered today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 6, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 6, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 6:30 A.M. The rain gauges indicated no rainfall on site from Tuesday, July 5, 1994, through Wednesday, July 6, 1994.

The terrace drain sand arrived on site today and a sample was obtained to transport to Law Engineering's lab where it was tested for grain size and permeability, The results indicate that the material is acceptable according to the project specifications.

The contractor continued to install drain pipe in the terraces to within 50 to 75 feet of the downcomer location. No sand was placed today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 7, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 7, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 6:30 A.M. Rain gauges indicated 9 tenths of an inch of rain fell from Wednesday morning, July 6, 1994, until this morning, July 7, 1994.

J.B. Coxwell's pipe crew began excavation at the anchor berm for the D16 downcomer today. While removing the first section of the temporary downcomer, the liner was found to be torn and pieces were found in the backfill above the pipe.

The contractor excavated around the torn area and Jimmy Purvis with Trailridge was notified in order to request liner repair. The torn area of the liner is located below or north of the anchor berm on the top of back slope beyond the anchor berm.

J.B. Coxwell began cutting the downcomer to install the manifold from the terrace on cell 9, but rain which began at 2:00 P.M. halted this work. The other manifold, which was already on site, was moved to the top of the hill where a broken seam was found in the welded area. J.B. Coxwell called the manufacturer to schedule repair.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 8, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 8, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 6:30 A.M. The rain gauges indicated 8 tenths of an inch of rain had fallen since yesterday morning, July 7, 1994.

J.B. Coxwell's shaped up the ditches and the downcomer pipe trench today, but the remaining area was still too wet to work.

Rain total for this week Saturday through Friday: 2.4 inches.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 9, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 9, 1994, a representative of Law Engineering, Inc. (LAW) traveled to the subject project site to check the rain gauge readings. J.B. Coxwell indicated that they planned to work tomorrow, Sunday July 10, 1994.

The gauge at the leachate station showed no indication of rain; however, the gauge on top of the hill showed one tenth of an inch of rain. Considerable drying of the site will have to occur today in order for the contractor to be able to work on Sunday. Weather conditions today were: Sunny/partially cloudy with a moderate wind.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 10, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 10, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauge at the leachate station showed one tenth of an inch of rain and the gauge on top of the hill showed none.

J.B. Coxwell's pipe crew installed the manifold at the terrace on top of cell 9 and two 20 foot sections of pipe down cell 9 as well as one 20 foot sections above the manifold. Along the east portions of the terraces of 9 and 10, sand was placed to 6-inches above the perforated drain pipe to within a distance of 50 feet from the downcomer today. Clay was tracked in adjacent to the manifold and sections of the pipe today, but not above the pipe.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 11, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 11, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauges indicated no rain since yesterday morning, July 10, 1994.

National Seal Company arrived on site at 8:00 A.M. and worked until 12:30 P.M., then returned at 3:00 P.M. and worked until 5:00 P.M., completing the repair in the liner today. Both the primary and secondary liners were repaired. Pull tests on a section of liner weld showed strengths averaging 80 pounds.

J.B. Coxwell installed underdrain pipe in the west half of terraces 9 and 10 and covered them with 6-inches of sand. Sand samples were obtained from both terraces today to check the permeability. The pipe crew continued working on the downcomer installing the manifold on top of cell 10 today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 12, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 12, 1994, a representative of Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauges indicated no rainfall had occurred on site within the past 24 hours.

J.B. Coxwell worked on preparing a ramp on top of cell 11 in order to move topsoil once they began trucking the material. The topsoil stockpiled on site was pushed down onto the east end of cells 10 and 11. J.B. Coxwell's pipe crew finished tieing in the underdrains, on cells 9 and 10 to the downcomer and partially covered the pipes with clay where needed. The pipe crew began installing pipe from the bottom of the downcomer on cell 9 towards the structure at the road ditch. Heavy rain began at 5:00 P.M. The pipe crew stopped until there was a break in the rain at approximately 5:30 P.M. at which time the crew safed-up the pipe and inlets with hay bales.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 13, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 13, 1994, a representative from Law Engineering, Inc. (LAW) arrived on the subject project at 7:00 A.M. The rain gauges indicated 1.2 inches of rain had fallen since 5:00 P.M. yesterday, July 12, 1994.

J.B. Coxwell's pipe crew was able to clean up and finish the tie-in of the downcomer to the drainage structure in the ditch today and backfill the pipe from the anchor berm down. Eight trucks made one trip each delivering topsoil this morning from the Crystal Springs pit, but each truck had to be pulled up the hill to dump and the topsoil placement had to be halted. In the late afternoon some minor dressup work was able to be performed by the contractor. The ditch adjacent to the road was dug out and hay bales reset during today's operations.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 14, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 14, 1994, a representative from Law Engineering, Inc. (LAW) arrived on the subject project at 7:00 A.M. The rain gauges indicated no rainfall since yesterday, July 13, 1994.

A representative of Fifepipe arrived on site at 8:30 A.M. to begin work on repairing the downcomer manifold to be used at the top of cell 11. The pipe had to be cut in two and spliced back together due to damage which occurred while sitting on site for a week waiting for repair.

J.B. Coxwell finished installing the sand around the drain pipe on terraces 9 and 10 and spread the remaining topsoil.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 15, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 15, 1994, a representative from Law Engineering, Inc. (LAW) arrived on the subject project site at 6:30 A.M. The rain gauges indicated no rain had fallen on site within the past 24 hours.

Due to scheduling problems, the pipe crew was not on site today to install the top section of the downcomer. The contractor performed general clean-up operations as well as installing the bentonite plug around the gas well today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 16, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 16, 1994, a representative from Law Engineering; Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauges indicated no rainfall had occurred during the last 24 hours on the site.

J.B. Coxwell's pipe crew was on site today and completed installation of the manifold at the top of cell 11 and the remaining downcomer pipe today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 18, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 18, 1994, a representative from Law Engineering, Inc. (LAW) arrived on the subject project site at 7:00 A.M. The rain gauges indicated no rainfall had occurred on site since Saturdays, July 16, 1994 readings.

J.B. Coxwell began hauling topsoil from the Crystal Springs pit today and placing it on the east half of slopes 10 and 11.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 19, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 19, 1994, a representative from Law Engineering, Inc. (LAW) arrived on the subject project site at 6:30 A.M. The rain gauges indicated no rainfall on site during the last 24 hour period.

J.B. Coxwell started hauling topsoil at 6:30 A.M. from the Crystal Springs pit delivering it to the site. The contractor continued to place and blade topsoil on the east half of slopes 10 and 11 today.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 20, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 20, 1994, a representative from Law Engineering, Inc. (LAW) arrived on the subject project site at 6:30 A.M. The rain gauge at the leachate station indicated seven tenths of an inch and the gauge on top of the hill indicated eight tenths of and inch of rainfall since yesterday, July 19, 1994.

J.B. Coxwell continued hauling topsoil from the Crystal Springs pit. The east half of slopes 10 and 11 are nearing finish grade and density tests on both 12-inch lifts of topsoil were obtained.

A light rain began at 4:30 P.M.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 21, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 21, 1994, a representative from Law Engineering, Inc. (LAW) arrived on the subject project at 7:00 A.M. The rain gauges indicated no significant rainfall during the last 24 hours.

J.B. Coxwell continued hauling topsoil from the Crystal Springs pit. The contractor was able to get a "Topo" on the east section of cell 10 up to the downcomer, but cell 11 was not ready today. The contractor began placing topsoil on the west half of cell 10 today.

Organics and ph samples one through four were obtained from slopes 10 and 11, and delivered to LAW's lab for testing. Light to moderate rain started at approximately 4:30 P.M. and the contractor started sending trucks home as they came in. The contractor continued to work in the rain until all trucks were unloaded and the slopes were "safed" up.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 22, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 22, 1994, a representative from Law Engineering, Inc. (LAW) arrived on the subject project at 7:00 A.M. Both rain gauges indicated only a trace, (less than one tenth of an inch) of rainfall during the past 24 hours on the site.

J.B. Coxwell continued to place stockpiled topsoil on slopes 10 and 11 on the west end today. J.B. Coxwell's subcontractor, Florida Carter, delivered and began placing sod today from the terrace at the top of cell 9 upward on cell 10 on the topo-ed east section only.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 23, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 23, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities and perform construction materials testing.

J.B. Coxwell continued grading topsoil on side slopes 10 and 11. The sodding contractor continued placing sod on slopes 10 and 11.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 25, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 25, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities and perform construction materials testing.

J.B. Coxwell continued grading side slopes 10 and 11. The haul road was prepared for topsoil delivery on July 26, 1994. No sod was placed today.

A rainfall of 0.2 inches was recorded for July 24, 1994.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 26, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 26, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities and perform construction materials testing.

J.B. Coxwell continued placing topsoil on slopes 10 and 11. The sod contractor continued placing sod on slopes 10 and 11.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 27, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 27, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities and perform construction materials testing.

J.B. Coxwell continued importing topsoil and placing it on slopes 10 and 11. No sod was placed today. A trace of rainfall was recorded for July 26, 1994.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 28, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 28, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities and perform construction materials testing.

J.B. Coxwell continued grading slopes 10 and 11 west of downcomer 16. As-built survey of the slopes is scheduled for 1:00 P.M. today. The sod contractor is scheduled to deliver sod today. 0.2 inches of rainfall was recorded for July 27, 1994.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 29, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 29, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities and perform construction materials testing.

J.B. Coxwell began moving pallets of sod onto slopes 10 and 11, west of downcomer 16. The as-built survey performed on July 28, 1994, was found to be within the horizontal and vertical tolerance shown on the project plans. The sod contractor began placing sod on slopes of cells 10 and 11.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** July 30, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On July 30, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities and perform construction materials testing.

J.B. Coxwell began placing the sand-cement riprap on the terrace drains. The contractor also began excavating the roadside swale and removing the overburden on the clay berm.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** August 1, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On August 1, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities and perform construction materials testing.

J.B. Coxwell continued excavating the roadside swale. The installation of the sand-cement riprap was also continued. A rainfall of 0.8 inches was recorded for July 31, 1994.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

RECORD OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** August 11, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

On August 11, 1994, a representative from Law Engineering, Inc. (LAW) visited the subject project. The purpose of this visit was to observe the contractor's activities.

J.B. Coxwell Contracting, Inc. placed the fixture on gas well G-4. The terrace drains were cleaned out and the washouts were repaired. Florida Carter continued placing sod on the roadside swale.

Inspector: Harlon Wiggins

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** December 1, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

A representative of Law Engineering, Inc. (LAW) visited the project site on December 1, 1994. The purpose of this visit was to observe the contractors' activities during repairs to downcomer D-16.

J.B.Coxwell excavated the area to be repaired in the bottom of the welded manifold at the top of cell 9. Present during excavation were ADS representatives Brain Woods and Bob Slade. Excavation was performed to just above the pipe using a backhoe and then hand dug around the pipe to keep from creating any further damage. The collapsed area was found to be at the section where the 18-inch mitered end of terrace drain pipe attached to the 30-inch main manifold.

Welds at the mitered sections were broken loose allowing the top section of the pipe to cave in. Above the drain tie-in at the welded 161 degree angle section, the pipe was split open a length of approximately 3 to 4 inches at the bottom allowing water to flow out and underneath the pipe downhill from this section.

Once the entire bad section of manifold was cut out, Bob Slade with ADS visually inspected the pipe sections above and below the repair area and indicated that he found no additional problems.

J.B. Coxwell began installation of the prefabbed repair section of manifold supplied by ADS. The repaired section was only tack welded in place today.

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** December 2, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

A representative of Law Engineering, Inc. (LAW) visited the project site on December 2, 1994. The purpose of this visit was to observe the contractors' activities.

J.B.Coxwell removed the tack-weld on the new prefabbed manifold section of downcomer D-16 for a better fit-up of the pipe to the existing piece of manifold before Fife Pipe Company welded the two sections together.

Weld was applied inside the pipe as well as outside. Once the 18-inch diameter terrace drain pipes were reconnected, clay material trucked in from the stockpile at Rosemary Hill was placed around and over the pipe. Powered bentonite was poured around the pipe and at the joints to help eliminate voids in the clay and increase its water tightness. The clay material beneath the pipe was not disturbed during the repair.

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF DAILY OBSERVATION

CLIENT: England, Thims & Miller, Inc. **DATE:** December 5, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

A representative of Law Engineering, Inc. (LAW) visited the subject project on December 5, 1994. The purpose of this visit was to observe the contractors' activities on the repairs of downcomer D16.

J.B. Coxwell Contracting removed and replaced the remaining defective pipe sections between the repaired manifold located at the top of cell 9 and the tie-in to the structure in the ditch at the toe of cell 9.

The clay bed and sidewalk did not appear to be affected during the replacement process. Clay from the on-site stockpile, which had been trucked in from the Rosemary Hill Landfill site, was placed over the top of the pipe along with bentonite to help seal around the pipe. Topsoil was placed back over the clay and prepared for grassing.

Inspector: Ken Bunnell

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

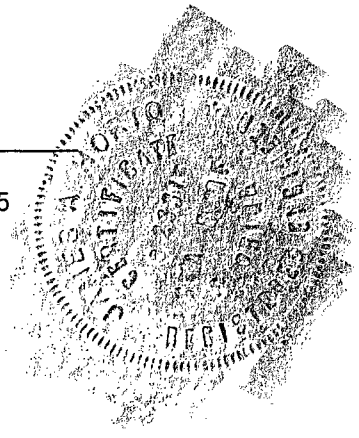
INITIAL COVER

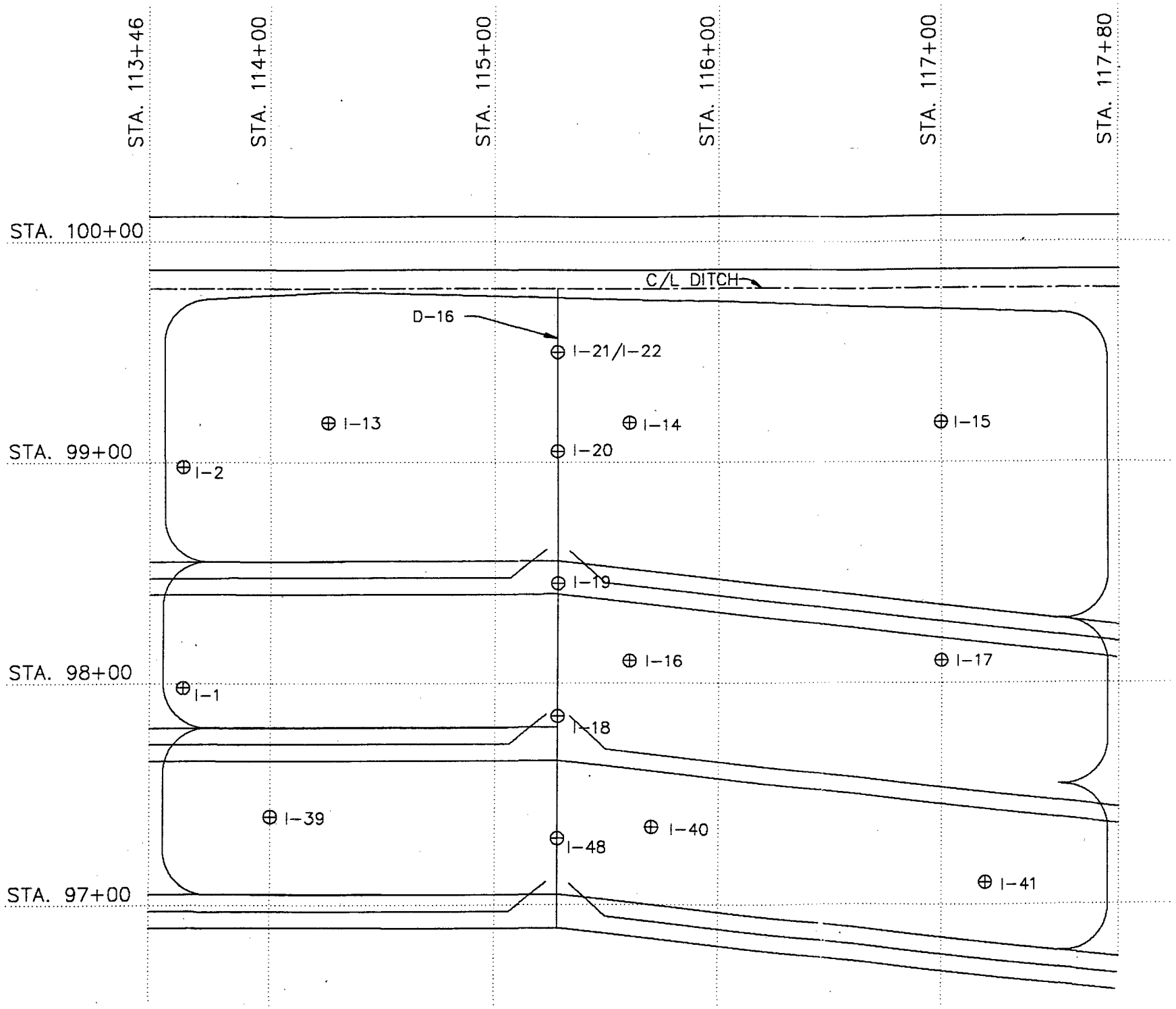
INITIAL COVER

The initial cover consisted of on-site sands. No soil was brought to amend the on-site soils. The locations of density testing and thickness measurements are shown on the plan included in this section. The thickness measurement results are also included in this section. The results of the density testing are included in the Appendix.

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 QA/QC Plan.

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





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LEGEND

⊕ INITIAL COVER FIELD DENSITY TEST LOCATION

0 30' 60'

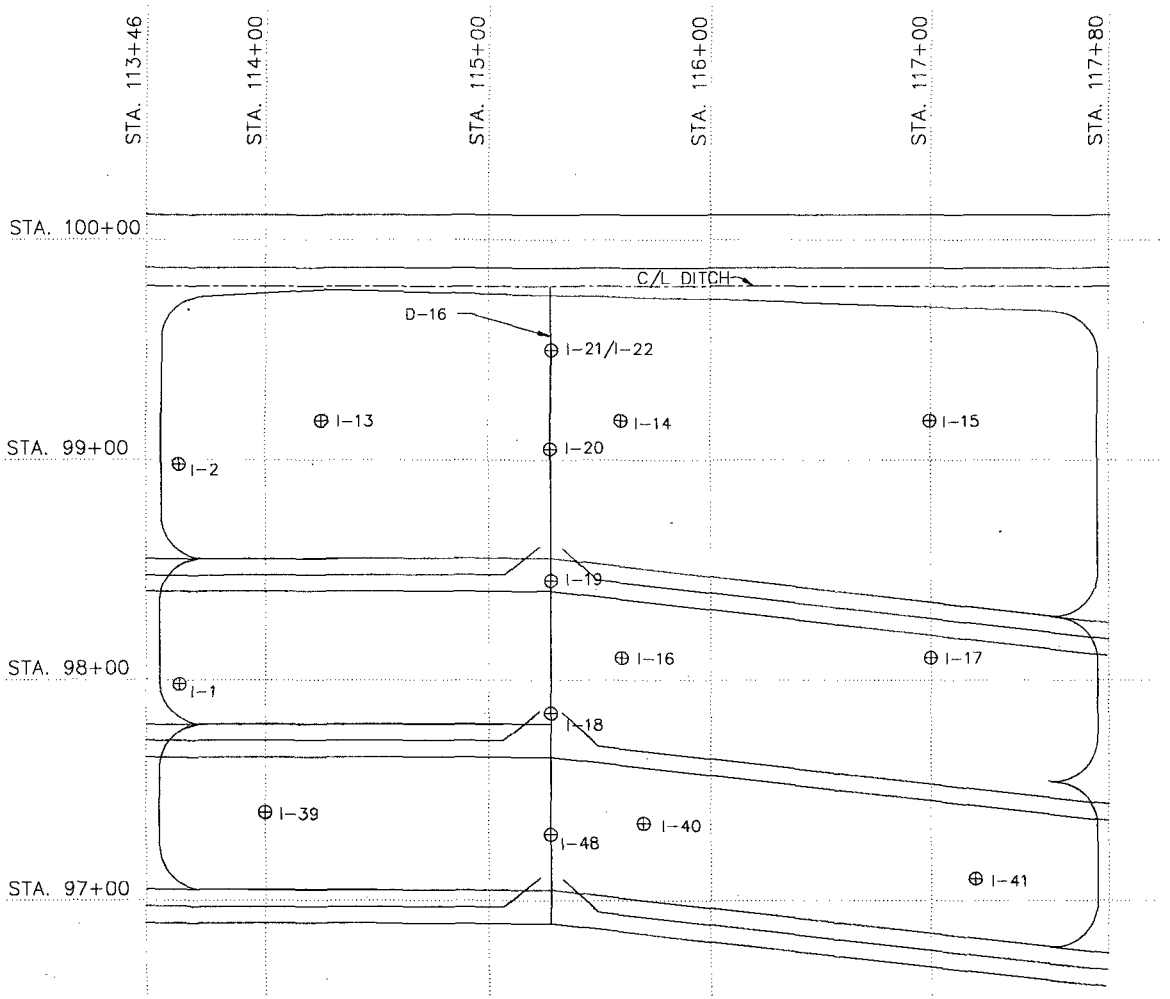
GRAPHIC SCALE

REFERENCE: Horizontal Control Plan/Side Slope Unit Plan – Phases I and II
Prepared by: England, Thims and Miller
Dated: June 18, 1993

LAW ENGINEERING
JACKSONVILLE, FLORIDA

INITIAL COVER DENSITY TEST LOCATION PLAN
Trail Ridge Landfill – Side Slope Closure
Units 9, 10 and 11
Jacksonville, Florida

DRAWN: JP	DATE: 9/14/94	SCALE: 1"=60'
CHECKED: JAH	PROJ. NO. 446-02322-01	APPROX.



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LEGEND

⊕ INITIAL COVER FIELD DENSITY TEST LOCATION

0 30' 60'

GRAPHIC SCALE

REFERENCE: *Horizontal Control Plan/Side Slope Unit Plan – Phases I and II*
Prepared by: England, Thims and Miller
Dated: June 18, 1993

LAW ENGINEERING
JACKSONVILLE, FLORIDA

INITIAL COVER DENSITY TEST LOCATION PLAN
Trail Ridge Landfill – Side Slope Closure
Units 9, 10 and 11
Jacksonville, Florida

DRAWN: JP	DATE: 9/14/94	SCALE: 1"=60'
CHECKED: JAH	PROJ. NO. 446-02322-01	APPROX.

RECORD OF INITIAL COVER THICKNESS

PROJECT: TRAILRIDGE LANDFILL SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: KEN BUNNELL
PROJECT NO: 446-02322-01
DATE: _____

CLIENT: ENGLAND, THIMS & MILLER, INC.

LOCATION	THICKNESS	REMARKS
N97+98 E113+61	18+"	Field density SLOPE 10 test NO. 1
N98+98 E113+61	18+"	Field density SLOPE 10 test NO. 2
N99+18 E114+25	18"	Field Density SLOPE 9 test NO. 13
N99+18 E115+60	18"	Field Density SLOPE 9 test NO. 14
N99+18 E117+00	18"	Field Density SLOPE 9 test NO. 15
N98+10 E115+60	24+"	Field density SLOPE 10 test NO. 16
N98+10 E117+00	24+"	Field density SLOPE 10 test NO. 17
N97+85 E115+28	19"	SLOPE 10 Field density DOWNCOMER 16 test NO. 18
N98+45 E115+28	18"	SLOPE 10 Field density DOWNCOMER 16 test NO. 19
N99+05 E115+28	18"	SLOPE 9 Field density DOWNCOMER 16 test NO. 20
N99+50 E115+28	19"	SLOPE 9 Field density test NO. 21 DOWNCOMER 16
N97+10 E114+00	18"	Field density SLOPE 11 test NO. 39
N97+35 E115+70	24"	Field density SLOPE 11 test NO. 40
N97+10 E117+20	24"	Field density test NO 41 SLOPE 11
N97+30 E115+28	20"	SLOPE 11 Field density test NO. 48 DOWNCOMER 16

COMPACTED CLAY LAYER

COMPACTED CLAY LAYER

The clay material was obtained from an off-site source. The borrow source was located north of County Highway 224 approximately 1.6 miles west of U.S. Highway 301. Information concerning the borrow source and the verification of permeability of the clay material was presented in our report dated June 10, 1994. This document is included in this section. Our field representative, Mr. Ken Bunnell, routinely visited the borrow source in order to verify the continued homogeneity of the soil strata.

A test strip was prepared using the borrow source material. The results of the test strip were also reported on June 10, 1994. This document is included in this section.

The installed compacted clay layer testing locations are shown on the plan included in this section. The results of the thickness, hydraulic conductivity percent fines and Atterburg limits testing also included in this section. The results of the density testing are include 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 QA/QC Plan.

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

June 10, 1994

Ms. Juanitta Clem
England, Thims & Miller, inc.
3131 St. Johns Bluff Road
Jacksonville, Florida 32216

Subject: Clay Borrow Source Pre-Qualification
Trailridge Landfill Side Slope Closure
Jacksonville, Florida
LAW Project No. 446-02322-01

Dear Ms. Clem:

Law Engineering, Inc. (LAW) has completed the pre-qualification of the potential clay borrow source. Attached are a site location map, test pit location sketch, completed pre-qualification form, and Proctor Test results with associated index testing results.

In summary, the proposed borrow source is located north of County Highway 225 approximately 1.6 miles west of U.S. Highway 301. As part of the site evaluation five test pits were excavated. The approximate location of the test pits are shown on the attached sketch. The test pits encountered from 6 to 7-1/2 feet of fine sandy overburden soils and from 6 to 7 feet of clay which appeared to be acceptable as a potential closure clay material. A sample of this clay was obtained from the upper zones from the central test pit for proctor, permeability and index testing. The results of this testing are as follows:

Maximum Dry Density (Standard Proctor)	94.2 pcf
Optimum Moisture Content (Standard Proctor)	23.0%
Liquid Limit	116
Plasticity Index	95
Percent Fines	62.4%
Coefficient of Permeability - @ 90% Standard Proctor (Moisture content at compaction 29%)	1.2×10^{-8} cm/sec

These results are presented on various data sheets attached to this report. Based on these results in our opinion the clay from this site will be acceptable for use as the closure clay material.

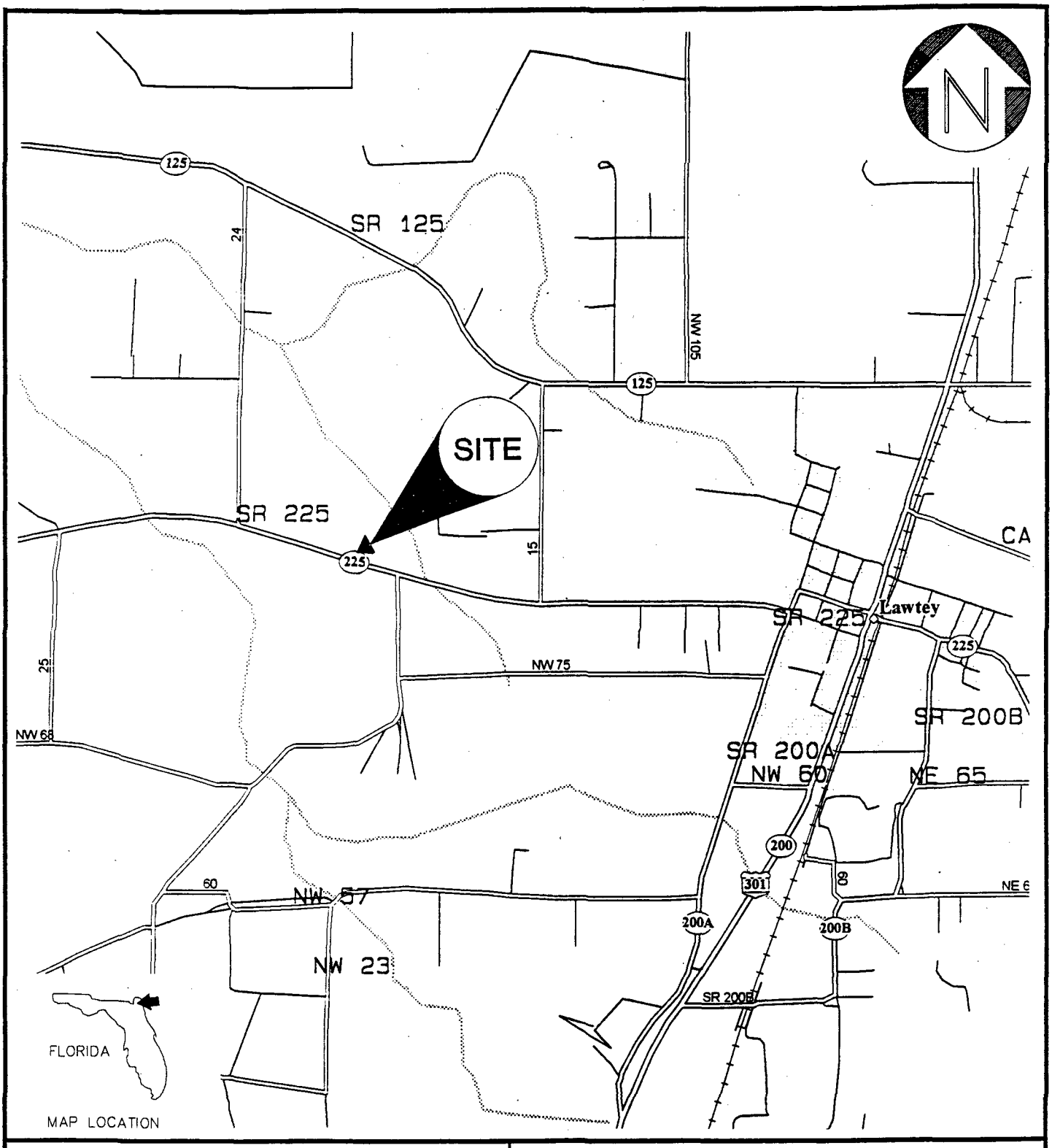
We appreciate the opportunity to be of service on this phase of your project. If you have any questions concerning this report please contact us.

Very truly yours,
LAW ENGINEERING, INC.

James A. Horton, P.E.
Branch Manager

Bryant B. Wildes
Chief Engineering Technician

Attachments



REFERENCE:
GENERAL HIGHWAY MAP
DATED: 1993
DELORME MAPPING

LAW ENGINEERING
JACKSONVILLE, FLORIDA

SITE LOCATION MAP
Clay Borrow Source
Trail Ridge Landfill/Slope Closure
Jacksonville, Florida

DRAWN: JP	DATE: 6/9/94	SCALE: 1: 31,250
CHECKED: JAH	PROJECT NO. 446-02322-01	

LAW ENGINEERING

GEOTECHNICAL, ENVIRONMENTAL
& CONSTRUCTION MATERIALS
CONSULTANTS

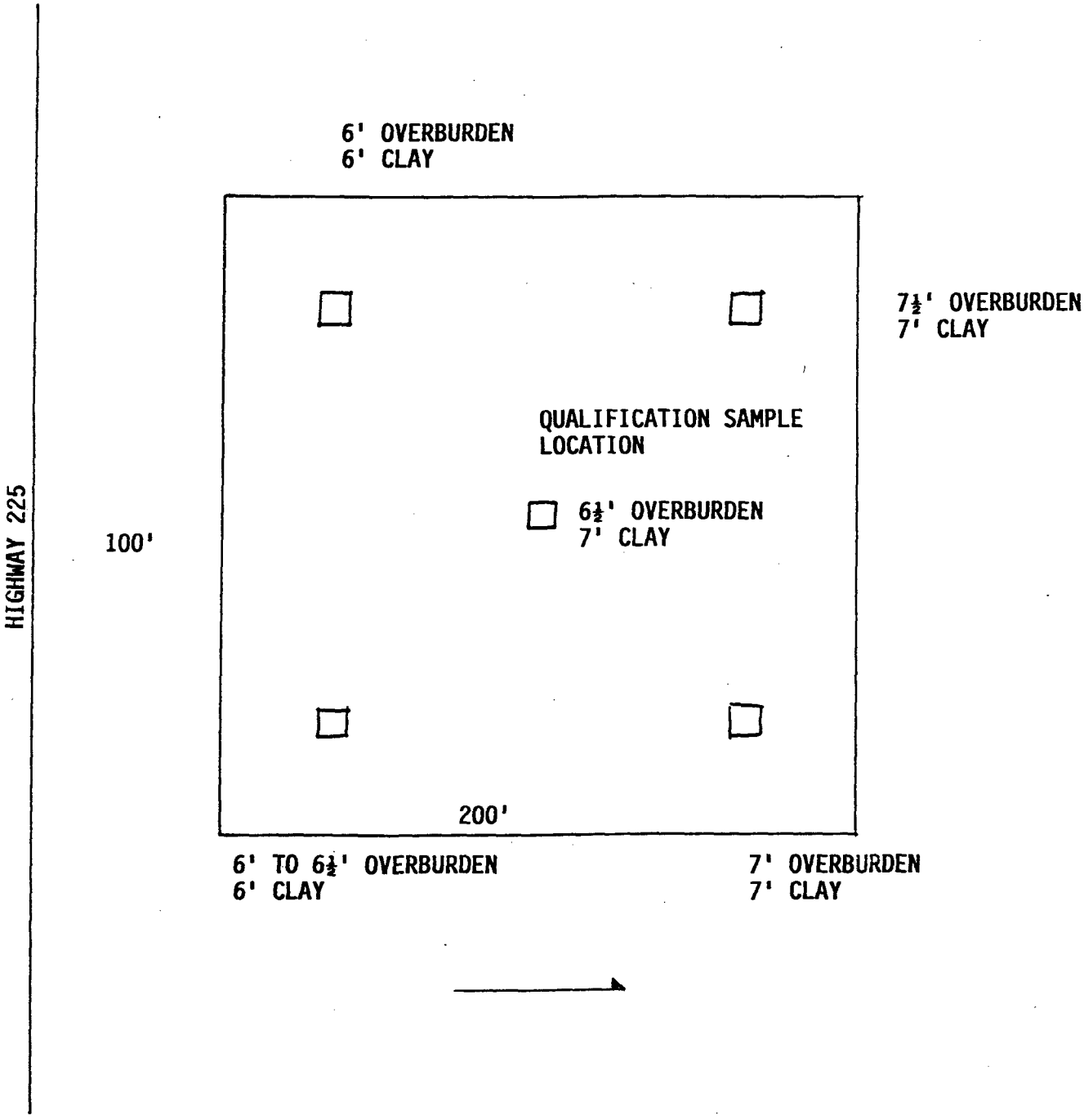
446-
JOB NO. 02322-01 SHEET _____ OF _____

JOB NAME Trailridge Closures 9, 10 & 11

BY Ken Bunnell DATE _____

CHECKED BY _____ DATE _____

LAWTEY PIT I SKETCH
(DIMENSIONS APPROXIMATE)



FORM 17

TRAIL RIDGE LANDFILL SIDE SLOPE CLOSURE
CLAY BORROW SOURCE
PRE-QUALIFICATION FORM

446-02322-01

CLAY SOURCE : Thomas Pulmer Property Parker 1

LOCATION*: Highway 225 - 1.6 Miles West off US 301, Lot 21
Northside of Roadway (100' north of Highway 225)

DISTANCE FROM PROJECT SITE: 15 Miles Oneway

ESTIMATED PROJECT QUANTITY: Approximately 6000 cubic yards

ESTIMATED SOURCE QUANTITY: Approximately 9000 cubic yards plus

NUMBER OF TEST PITS: 1 This pit

* 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: Grey Brown Silty Very Sandy Clay	Clay Stratum Description:
Depth Below Surface From: 6½' To: 13'	Depth Below Surface From: ____ To: ____
Percent Fines: 62.4	Percent Fines:
Atterberg Limits: LL 116 - PI 95	Atterberg Limits:
Moisture Content: 29%	Moisture Content:
Hydraulic Conductivity: (cm/sec)	Hydraulic Conductivity: (cm/sec)
@ 80% Standard Proctor:	@ 80% Standard Proctor:
@ 85% Standard Proctor:	@ 85% Standard Proctor:
@ 90% Standard Proctor: 1.2×10^{-8}	@ 90% Standard Proctor:

B. TEST PIT NO. ____

Clay Stratum Description:	Clay Stratum Description:
Depth Below Surface From: ____ To: ____	Depth Below Surface From: ____ To: ____
Percent Fines:	Percent Fines:
Atterberg Limits:	Atterberg Limits:
Moisture Content:	Moisture Content:
Hydraulic Conductivity: (cm/sec)	Hydraulic Conductivity: (cm/sec)
@ 80% Standard Proctor:	@ 80% Standard Proctor:
@ 85% Standard Proctor:	@ 85% Standard Proctor:
@ 90% Standard Proctor:	@ 90% Standard Proctor:

TEST RESULTS (continued):

C. TEST PIT NO. _____

Clay Stratum Description _____

Depth Below Surface From: _____ To: _____

Percent Fines _____

Atterberg Limits _____

Moisture Content _____

Hydraulic Conductivity: (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description _____

Depth Below Surface From: _____ To: _____

Percent Fines _____

Atterberg Limits _____

Moisture Content _____

Hydraulic Conductivity: (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

D. TEST PIT NO. _____

Clay Stratum Description _____

Depth Below Surface From: _____ To: _____

Percent Fines _____

Atterberg Limits _____

Moisture Content _____

Hydraulic Conductivity: (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

Clay Stratum Description _____

Depth Below Surface From: _____ To: _____

Percent Fines _____

Atterberg Limits _____

Moisture Content _____

Hydraulic Conductivity: (cm/sec)

@ 80% Standard Proctor _____

@ 85% Standard Proctor _____

@ 90% Standard Proctor _____

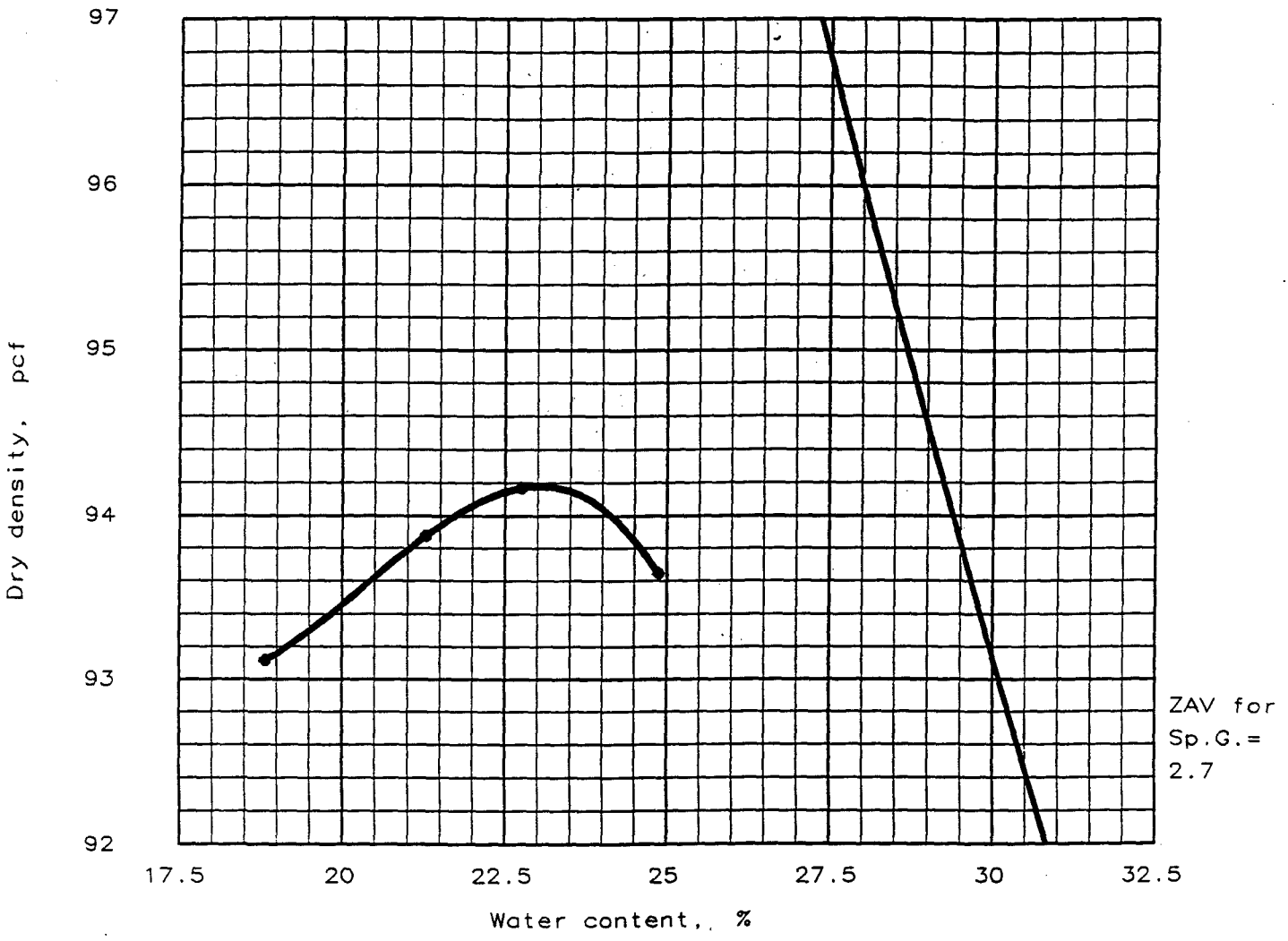
Attach additional sampling results as needed.

Approved by Contractor [signature] JBCCI

Approved by QC Monitor Ken Bunnell Sam Eng.

Approved by QA Engineer [signature]

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						
	CH	A-7-6	26% %		116	95	0 %	62.4 %

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 23.0 % Maximum dry density = 94.2 pcf	Grey Brown Silty Very Sandy CLAY

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
Location: Clay Qualification Sample No. 1
CLIENT: England, Thims & Miller, Inc.
Date: 5-20-94

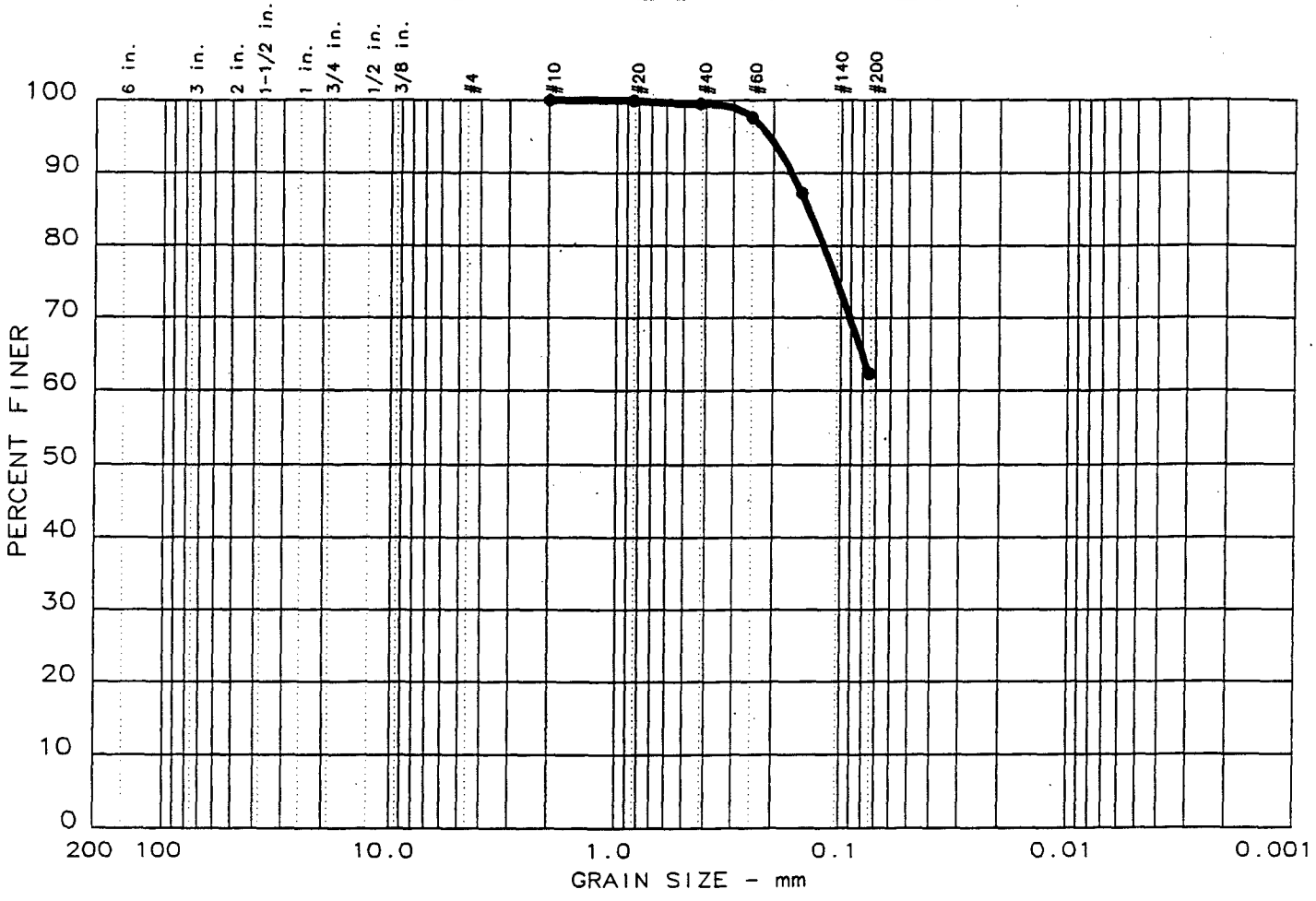
Remarks:
Proctor No. 1

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	37.6	62.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	116	95	0.14							

MATERIAL DESCRIPTION	USCS	AASHTO
● Grey Brown Silty Very Sandy CLAY	CH	A-7-6

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
● Location: Clay Qualification Sample No. 1

Date: 5-23-94

Remarks:

Proctor No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

June 10, 1994

Ms. Juanitta Clem
England, Thims & Miller, inc.
3131 St. Johns Bluff Road
Jacksonville, Florida 32216

Subject: Test Strip Qualification
Trailridge Landfill Side Slope Closure
Jacksonville, Florida
LAW Project No. 446-02322-01

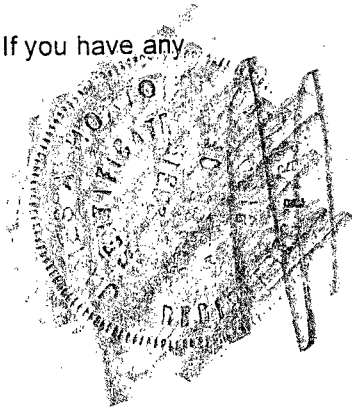
Dear Ms. Clem:

Law Engineering, inc. (LAW) has completed the monitoring and testing of the clay test strip placement at the subject site. Attached is the test strip qualification form. The test strip was placed during he period of May 26, 1994 to May 27, 1994. Initial field density testing performed by nuclear equipment indicated density values between 90 and 91 percent of the standard proctor values. Samples of the clay liner were obtained during this same period for permeability testing. Because the laboratory measured densities varied greatly from the field densities, several field verification tests were performed using the drive cylinder method. These verification tests were similar to the laboratory measured densities, indicating that the nuclear method was not producing consistent results. Based on the initial proctor (Proctor 1 submitted with borrow source report), information the laboratory densities were on the order of 66 to 77 percent of the standard proctor maximum.

As part of our research as to why the difference in the field nuclear density measurements, an additional proctor sample was obtained to explore whether a material change had occurred when compared to the prequalification proctor sample. The results of these tests indicated that the test strip material contained more fines than the initial sample. Accordingly, the maximum dry density changed (Proctor 4, attached) so that the permeability sample density percentages actually varied from 76 to 90 percent of the standard proctor. The field densities of the test strip were remeasured on June 1, and 2, 1994 after additional compaction effort had occurred. These tests are designated numbers 3A through 12A, and the results are noted in the attachments. The original density measurement, test Nos. 3 through 12 accomplished by nuclear methods, are not reported herein since they were determined to be inconsistent.

In summary, the test strip permeabilities meet the specified requirement at densities varying from 76 and 90 percent of the standard proctor maximum. Based on these results, we consider the test strip acceptable and recommend a minimum density criteria for the clay of 80 percent of the standard proctor maximum dry density.

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.



Very truly yours,

LAW ENGINEERING, INC.

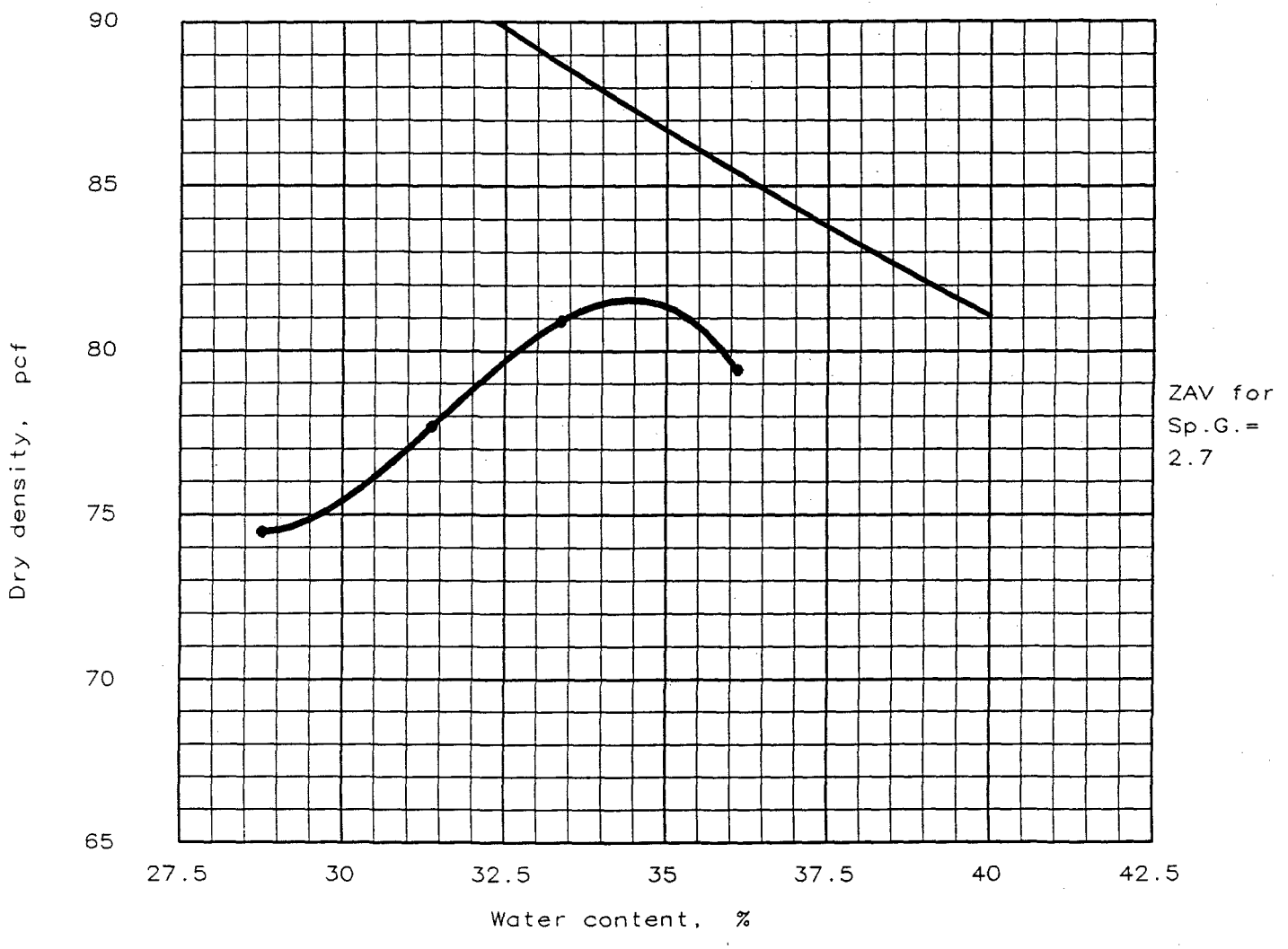
James A. Horton, P.E.
Branch Manager

Bryant B. Wildes
Chief Engineering Technician

JAH/BBW:lmc

Attachments

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						
	CH	A-7-5			97	66	0 %	73.9.%

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 34.4 % Maximum dry density = 81.6 pcf	Grey Sandy Very Silty CLAY

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
Location: Clay Cap Material
CLIENT: England, Thims & Miller, Inc.
Date: 6-5-94

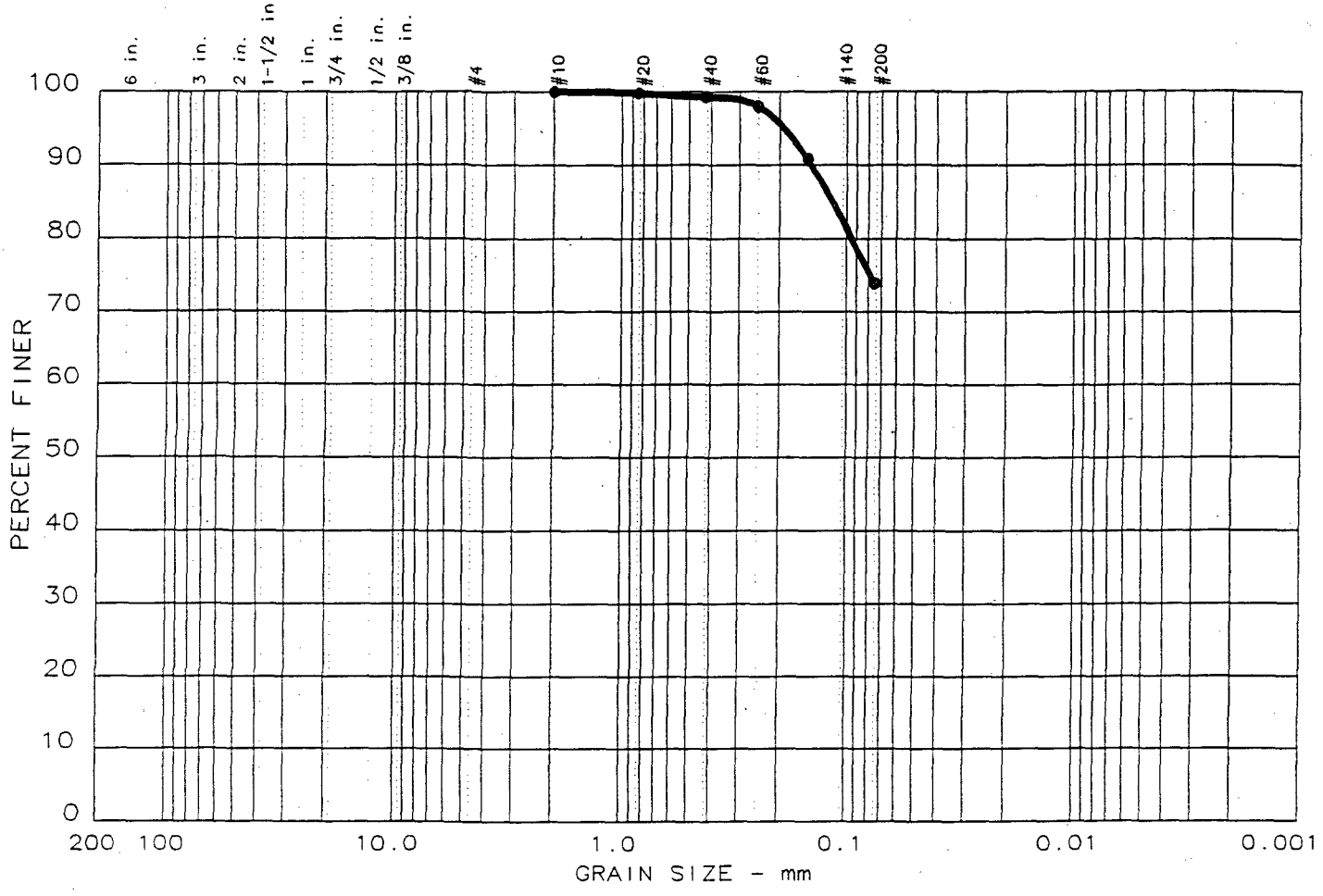
Remarks:
Proctor No. 4

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	26.1	73.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	97	66	0.11							

MATERIAL DESCRIPTION	USCS	AASHTO
● Grey Sandy Very Silty CLAY	CH	A-7-5

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
● Location: Clay Cap Material

Date: 6-5-94

Remarks:
Proctor No. 4

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

REPORT OF PERMEABILITY TESTING CLAY LINER TEST STRIP TRAILRIDGE SIDE SLOPE CLOSURE LAW PROJECT NO. 446-02322-01			
TEST NO.	**DRY DENSITY (PCF)**	**MOISTURE (%)**	**COEFFICIENT OF PERMEABILITY (CM/SEC)**
P-1	66.5	52.4	6.0×10^{-9}
P-2	73.3	45.4	1.2×10^{-8}
P-3	70.9	34.9	2.3×10^{-8}
P-4	62.3	57.9	5.6×10^{-9}
P-5	71.3	45.4	1.2×10^{-8}
P-6	68.6	50.0	5.4×10^{-9}
P-7	67.1	49.9	6.1×10^{-9}
P-8	66.8	49.3	1.2×10^{-8}
P-9	65.2	56.4	6.0×10^{-9}
P-10	70.1	51.9	5.7×10^{-9}

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/01/94							
3A	42.7	74.8	4	92	N/A	1	*
4A	41.9	77.2	4	95	N/A	1	*
5A	43.8	77.0	4	94	N/A	1	*
6A	44.0	74.3	4	91	N/A	1	*
7A	43.6	75.8	4	93	N/A	1	*

TEST LOCATIONS: Test Strip - First 6" Lift

3A Cell 10 - Sta. 113+56 at 97+93; 7" Thickness, Perm Sample P1
4A Cell 10 - Sta. 113+68 at 97+93; 7-1/2" Thickness, Perm Sample P2
5A Cell 10 - Sta. 113+60 at 98+15; 6-3/4" Thickness, Perm Sample P3
6A Cell 10 - Sta. 113+56 at 98+40; 7" Thickness, Perm Sample P4
7A Cell 10 - Sta. 113+68 at 98+40; 7-1/2" Thickness, Perm Sample P5

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4

REMARKS

Performed In General Accordance With:
1 - ASTM D2937

* Top of Finished Grade

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

for Bryant B. Wildes

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/02/94							
8A	47.4	72.4	4	89	N/A	1	*
9A	42.2	74.6	4	91	N/A	1	*
10A	43.1	74.0	4	91	N/A	1	*
11A	42.8	74.0	4	91	N/A	1	*
12A	42.5	74.3	4	91	N/A	1	*

TEST LOCATIONS: Test Strip - Second 6" Lift

8A Cell 10 - Sta. 113+56 at 97+93; 6-1/2" Thickness, Perm Sample P6
9A Cell 10 - Sta. 113+68 at 97+93; 6-1/2" Thickness, Perm Sample P7
10A Cell 10 - Sta. 113+60 at 98+15; 6-1/4" Thickness, Perm Sample P8
11A Cell 10 - Sta. 113+56 at 98+40; 6-3/4" Thickness, Perm Sample P9
12A Cell 10 - Sta. 113+68 at 98+40; 7" Thickness, Perm Sample P10

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4

REMARKS

Performed In General Accordance With:
1 - ASTM D2937

* Top of Finished Grade

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

for Bryant B. Wildes

TRAIL RIDGE LANDFILL SIDE SLOPE CLOSURE
TEST STRIP
QUALIFICATION FORM

TEST STRIP NO.: 1 DATE: 5/27/94

LOCATION: Cell 10 between Stations 113+46 and 113+78

between Stations 97+83 and 98+58

SIZE (20' X 50' MINIMUM): 32 x 75

TYPE OF EQUIPMENT USED: D3 Dozer

PASS/FAIL?: PASS

TEST RESULTS:

Lift No.: 1
Percent Fines: Average 74%
Atterberg Limits: Average PI 68%
Moisture Content: Average 47%
Field Density: (@ 5 locations)
- Test No. 3A 92%
- Test No. 4A 95%
- Test No. 5A 94%
- Test No. 6A 91%
- Test No. 7A 93%

Thickness: (@ 5 locations)
- 7 Inches
- 7-1/2 Inches
- 6-3/4 Inches
- 7 Inches
- 7-1/2 Inches

Hydraulic Conductivity: (@ 5 locations)
- P1 6.0×10^{-9}
- P2 1.2×10^{-8}
- P3 2.3×10^{-8}
- P4 5.6×10^{-9}
- P5 1.2×10^{-8}

Lift No.: 2
Percent Fines: Average 77%
Atterberg Limits: Average PI 63%
Moisture Content: Average 51%
Field Density: (@ 5 locations)
- Test No. 8A 89%
- Test No. 9A 91%
- Test No. 10A 91%
- Test No. 11A 91%
- Test No. 12A 91%

Thickness: (@ 5 locations)
- 6-1/2 Inches
- 6-1/2 Inches
- 6-1/4 Inches
- 6-3/4 Inches
- 7 Inches

Hydraulic Conductivity: (@ 5 locations)
- P6 5.4×10^{-9}
- P7 6.1×10^{-9}
- P8 1.2×10^{-9}
- P9 6.0×10^{-9}
- P10 5.7×10^{-9}

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 Ken Bunnell
Approved by QA Engineer _____

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
			Tests Performed on 06/01/94				
3A	42.7	74.8	4	92	N/A	1	*
4A	41.9	77.2	4	95	N/A	1	*
5A	43.8	77.0	4	94	N/A	1	*
6A	44.0	74.6	4	91	N/A	1	*
7A	43.6	75.8	4	93	N/A	1	*
			Tests Performed on 06/02/94				
8A	47.4	72.4	4	89	N/A	1	*
9A	42.2	74.6	4	91	N/A	1	*
10A	43.1	74.0	4	91	N/A	1	*
11A	42.8	74.0	4	91	N/A	1	*

TEST LOCATIONS: **Test Strip - First 6 "Lift**

3A	Cell 10 Sta. 113+56 at 97+93; 7" Thickness, Perm Sample P1
4A	Cell 10 Sta. 113+68 at 97+63; 7-1/2" Thickness, Perm Sample P2
5A	Cell 10 Sta. 113+60 at 98+15; 6-3/4" Thickness, Perm Sample P3
6A	Cell 10 Sta. 113+56 at 98+40; 7" Thickness, Perm Sample P4
7A	Cell 10 Sta. 113+68 at 98+40; 7-1/2" Thickness, Perm Sample P5
8A	Cell 10 Sta. 113+56 at 97+93; 13-1/2" Thickness, Perm Sample P6
9A	Cell 10 Sta. 113+68 at 97+93; 14" Thickness, Perm Sample P7
10A	Cell 10 Sta. 113+60 at 98+15; 13" Thickness, Perm Sample P8
11A	Cell 10 Sta. 113+56 at 98+40; 13-3/4" Thickness, Perm Sample P9

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4

REMARKS

Performed In General Accordance With:
1 - ASTM D2937

N/A - Not Applicable

*** Top of Finished Grade**

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. JOB NO: 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/02/94							
12A	42.5	74.3	4	91	**N/A**	1	*

TEST LOCATIONS: **Test Strip - First 6" Lift**

12A Cell 10 Sta. 113+68 at 98+40; 14-1/2" Thickness, Perm Sample P10

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4

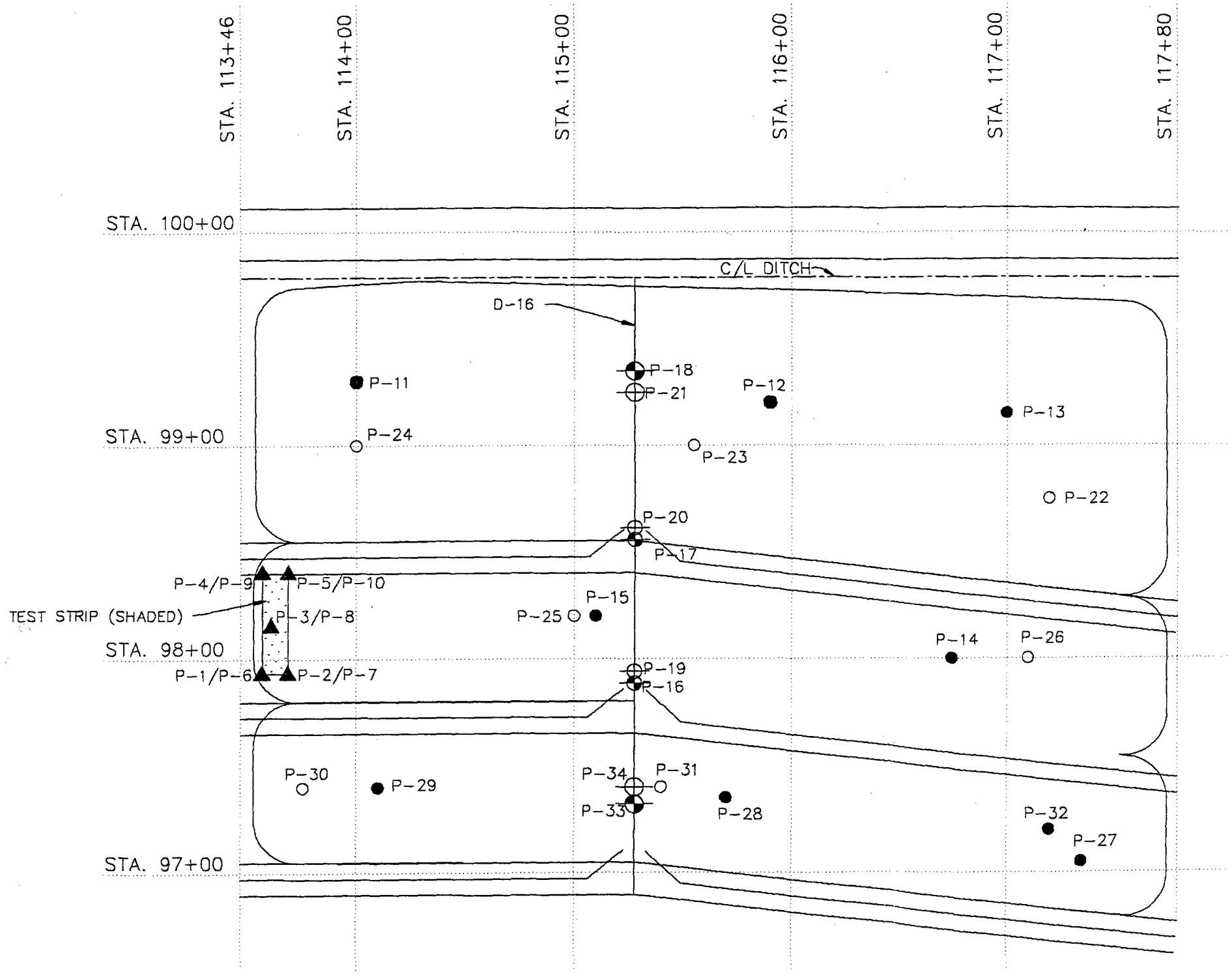
REMARKS

Performed In General Accordance With:
1 - ASTM D2937
N/A - Not Applicable
*** Top of Finished Grade**

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes



N

LEGEND FOR CLAY LAYER PERMEABILITY TESTS

- ● 2.0' DEPTH TEST LOCATION
- ○ 2.5' DEPTH TEST LOCATION
- ▲ 2.5'/2.0' DEPTH TEST LOCATION
- ⊕ 0.5' DEPTH TEST LOCATION (DOWNCOMER PIPE)
- ⊕ 0.0' DEPTH TEST LOCATION (DOWNCOMER PIPE)

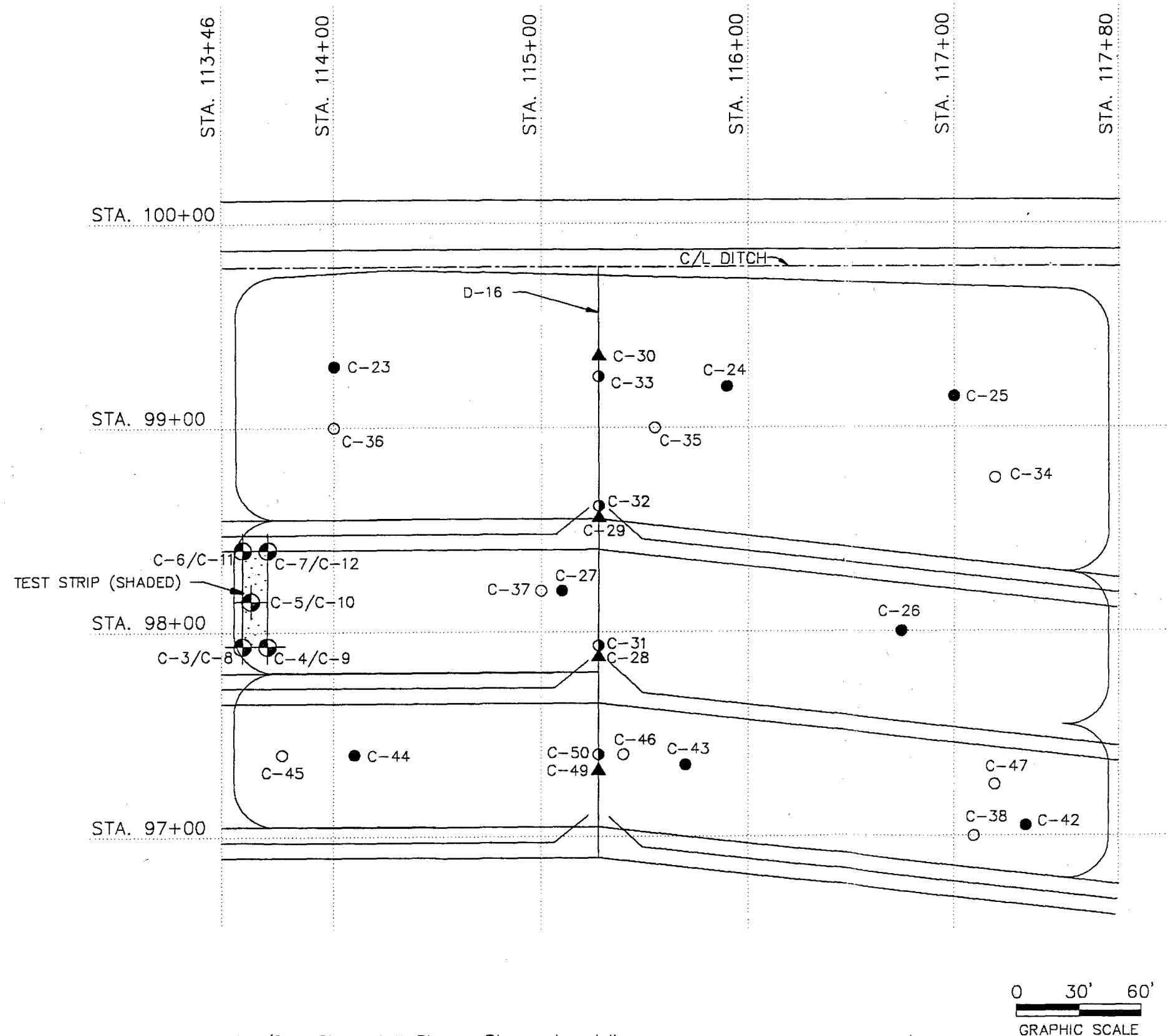
NOTE: Clay Liner test depths referenced to top of final cover. Downcomer Pipe test depths referenced to pipe invert.

REFERENCE: Horizontal Control Plan/Side Slope Unit Plan – Phases I and II
Prepared by: England, Thims and Miller
Dated: June 18, 1993

LAW ENGINEERING
JACKSONVILLE, FLORIDA

CLAY LAYER PERMEABILITY TEST LOCATION PLAN
Trail Ridge Landfill – Side Slope Closure
Units 9, 10 and 11
Jacksonville, Florida

DRAWN: JP	DATE: 9/14/94	SCALE: 1"=60'
CHECKED: JAH	PROJ. NO. 446-02322-01	APPROX.



N

LEGEND FOR CLAY LAYER DENSITY TESTS

- 2.0' DEPTH TEST LOCATION
- 2.5' DEPTH TEST LOCATION
- 2.0'/2.5' DEPTH TEST LOCATION
- 0.0' DEPTH TEST LOCATION (DOWNCOMER PIPE)
- 0.5' DEPTH TEST LOCATION (DOWNCOMER PIPE)

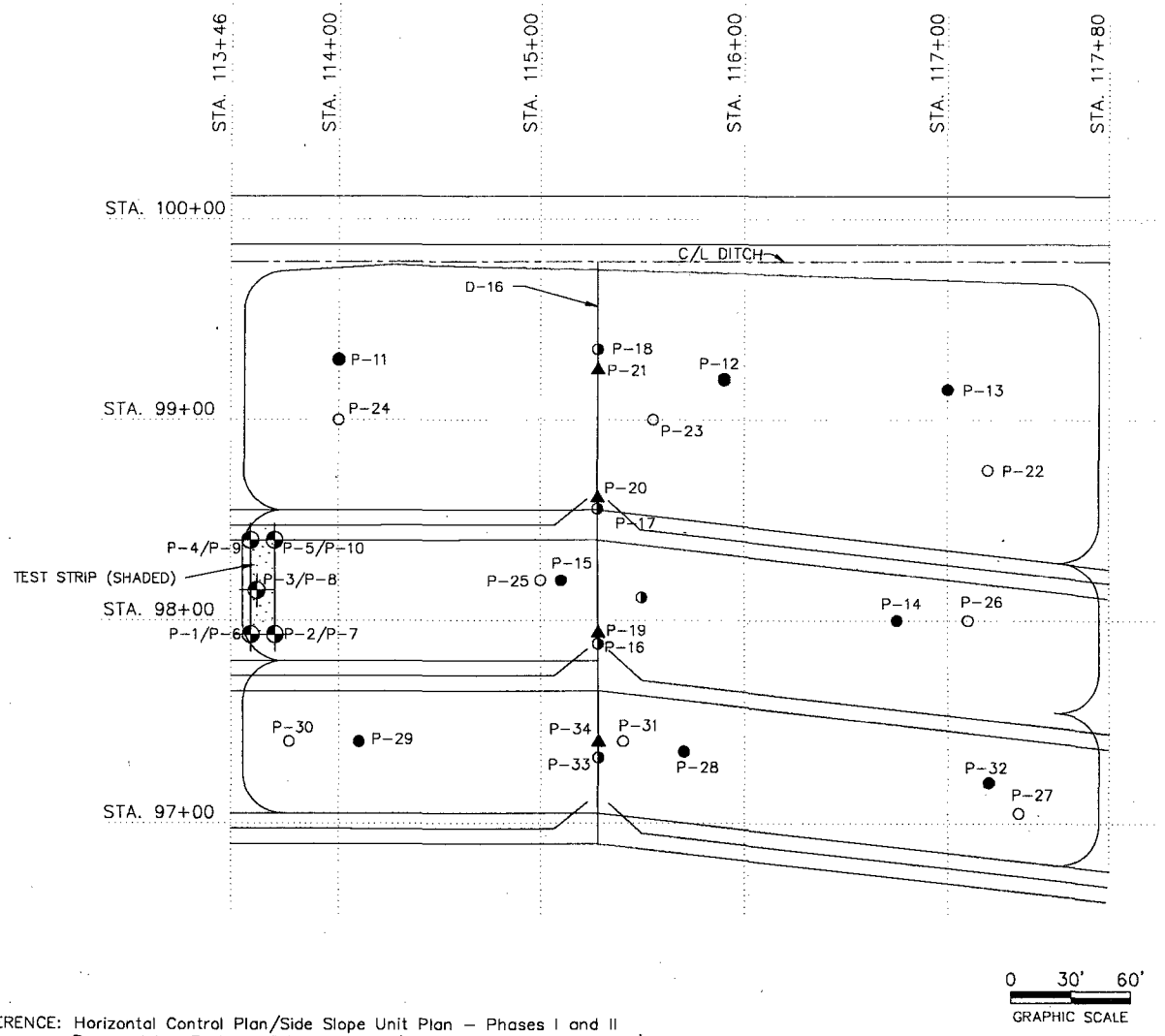
NOTE: Clay Liner test depths referenced to top of final cover. Downcomer Pipe test depths referenced to pipe invert.

REFERENCE: Horizontal Control Plan/Side Slope Unit Plan – Phases I and II
Prepared by: England, Thims and Miller
Dated: June 18, 1993

LAW ENGINEERING
JACKSONVILLE, FLORIDA

CLAY LAYER DENSITY TEST LOCATION PLAN
Trail Ridge Landfill – Side Slope Closure
Units 9, 10 and 11
Jacksonville, Florida

DRAWN: JP	DATE: 9/14/94	SCALE: 1"=60'
CHECKED: JAH	PROJ. NO. 446-02322-01	APPROX.



N

LEGEND FOR CLAY LAYER PERMEABILITY TESTS

- ● 2ND LIFT TEST LOCATION
- ○ 1ST LIFT TEST LOCATION
- ⊕ 1ST & 2ND LIFT TEST LOCATION
- ▲ 2ND LIFT TEST LOCATION (DOWNCOMER PIPE)
- ◑ 1ST LIFT TEST LOCATION (DOWNCOMER PIPE)

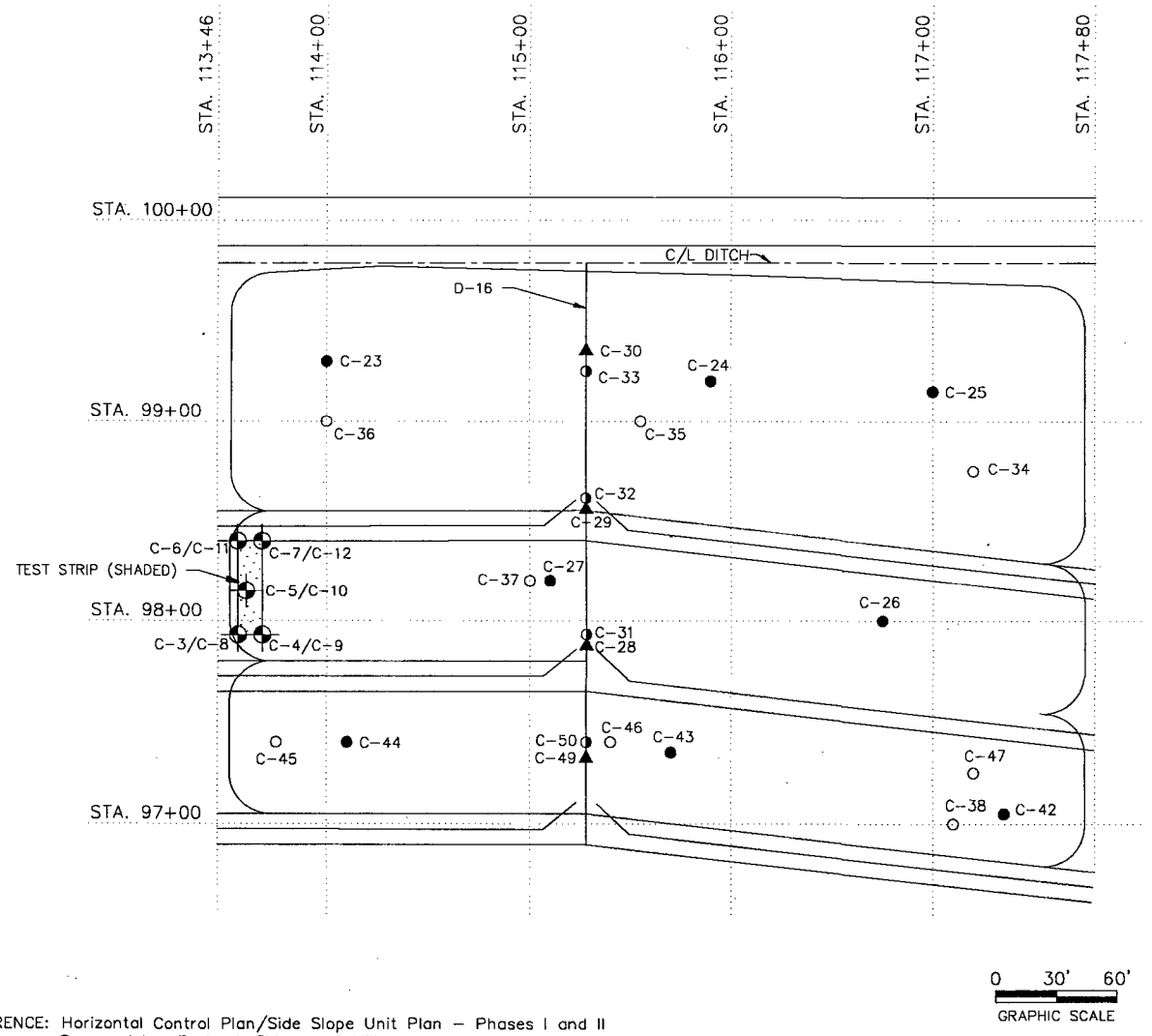
NOTE: Clay Liner test depths referenced to top of final cover. Downcomer Pipe test depths referenced to pipe invert.

REFERENCE: Horizontal Control Plan/Side Slope Unit Plan – Phases I and II
Prepared by: England, Thims and Miller
Dated: June 18, 1993

LAW ENGINEERING
JACKSONVILLE, FLORIDA

CLAY LAYER PERMEABILITY TEST LOCATION PLAN
Trail Ridge Landfill – Side Slope Closure
Units 9, 10 and 11
Jacksonville, Florida

DRAWN: JP	DATE: 9/14/94	SCALE: 1"=60'
CHECKED: JAH	PROJ. NO. 446-02322-01	APPROX.



N

LEGEND FOR CLAY LAYER DENSITY TESTS

- ● 2ND LIFT TEST LOCATION
- ○ 1ST LIFT TEST LOCATION
- ⊕ 1ST & 2ND LIFT TEST LOCATION
- ▲ 2ND LIFT TEST LOCATION (DOWNCOMER PIPE)
- ◑ 1ST LIFT TEST LOCATION (DOWNCOMER PIPE)

NOTE: Clay Liner test depths referenced to top of final cover. Downcomer Pipe test depths referenced to pipe invert.

0 30' 60'
GRAPHIC SCALE

REFERENCE: Horizontal Control Plan/Side Slope Unit Plan – Phases I and II
Prepared by: England, Thims and Miller
Dated: June 18, 1993

LAW ENGINEERING
JACKSONVILLE, FLORIDA

CLAY LAYER DENSITY TEST LOCATION PLAN
Trail Ridge Landfill – Side Slope Closure
Units 9, 10 and 11
Jacksonville, Florida

DRAWN: JP	DATE: 9/14/94	SCALE: 1"=60'
CHECKED: JAH	PROJ. NO. 446-02322-01	APPROX.

RECORD OF CLAY LAYER THICKNESS

PROJECT: TRAILRIDGE LANDFILL SIDE SLOPE CLOSURE
PHASE I AND II

CLIENT: ENGLAND, THIMS & MILLER, INC.

SENIOR TECHNICIAN: KEN BUNNELL
PROJECT NO: 446-02322-01
DATE: _____

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N97+93 E113+56	-2.5'	7"	Field density test No. 3	Test strip
N97+93 E 113+68	-2.5'	7 1/2"	Field density test No. 4	
N 98+15 E 113+60	-2.5'	6 3/4"	Field density test No. 5	
N 98+40 E 113+56	-2.5'	7"	Field density test No. 6	
N 98+40 E 113+68	-2.5'	7 1/2"	Field density test No. 7	
N 97+93 E 113+56	-2.0'	13 1/4"	Field density test No. 8	
N 97+93 E 113+68	-2.0'	14"	Field density test No. 9	
N 98+15 E 113+60	-2.0'	13"	Field density test No. 10	
N 98+40 E 113+56	-2.0'	13 3/4"	Field density test No. 11	
N 98+40 E 113+68	-2.0'	14 1/2"	Field density test No. 12	

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

PROJECT: TRAILRIDGE LANDFILL SIDE SLOPE CLOSURE
PHASE I AND II

CLIENT: ENGLAND, THIMS & MILLER, INC.

SENIOR TECHNICIAN: KEN BUNNELL
PROJECT NO: 446-02322-01
DATE: _____

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 99+30 E 114+00	-2.5'	6 1/4"	Field density test NO. 23	SLOPE 9
N 99+20 E 115+90	-2.5'	6 3/4"	Field density test NO. 24	SLOPE 9
N 99+15 E 117+00	-2.5'	7"	Field density test NO. 25	SLOPE 9
N 98+75 E 114+50	-2.5'	6 1/2"	NO density test	SLOPE 9
N 99+30 E 115+50	-2.5'	7"	NO density test	SLOPE 9
N 98+40 E 116+10	-2.5'	6 1/4"	NO density test	SLOPE 9
N 98+00 E 116+75	-2.5'	7"	Field density test NO. 26	SLOPE 10
N 98+20 E 115+10	-2.5'	6 1/4"	Field density test NO. 27	SLOPE 10
N 98+00 E 113+70	-2.5'	6 1/2"	NO density test	SLOPE 10
N 98+30 E 114+30	-2.5'	7"	NO density test	SLOPE 10
N 98+05 E 115+80	-2.5'	6 3/4"	NO density test	SLOPE 10

RECORD OF CLAY LAYER THICKNESS

PROJECT: TRAILRIDGE LANDFILL SIDE SLOPE CLOSURE
PHASE I AND II

CLIENT: ENGLAND, THIMS & MILLER, INC.

SENIOR TECHNICIAN: KEN BUNNELL
PROJECT NO: 446-02322-01
DATE: _____

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 97+85 E 116+30	-2.5'	7"	no density test	SLOPE 10
N 98+75 E 117+20	-2.0'	12"	Field density test NO 34	SLOPE 9
N 99+00 E 115+55	-2.0'	13"	Field density test NO 35	SLOPE 9
N 99+00 E 114+00	-2.0'	13"	Field density test NO 36	SLOPE 9
N 98+80 E 114+30	-2.0'	13"	NO density test	SLOPE 9
N 98+70 E 116+00	-2.0'	12 1/2"	NO density test.	SLOPE 9
N 99+20 E 117+00	-2.0'	12 1/4"	NO density test	SLOPE 9
N 98+20 E 115+00	-2.0'	13 1/2"	Field density test NO 37	SLOPE 10
N 98+00 E 117+10	-2.0'	13 1/2"	Field density test NO 38	SLOPE 10
N 97+80 E 116+50	-2.0'	13 1/4"	no density test	SLOPE 10
N 98+20 E 115+85	-2.0'	13 1/2"	NO density test	SLOPE 10

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

PROJECT: TRAILRIDGE LANDFILL SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: KEN BUNNELL
PROJECT NO: 446-02322-01
DATE: _____

CLIENT: ENGLAND, THIMS & MILLER, INC.

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 97+90 E 114+40	-2.0'	12 3/4"	No density test	SLOPE 10
N 98+30 E 113+90	-2.0'	13"	No density test	SLOPE 10
N 97+05 E 117+35	-2.5'	7"	Field density test NO 42	SLOPE 11
N 97+35 E 115+70	-2.5'	7"	Field density test NO 43	SLOPE 11
N 97+40 E 114+10	-2.5'	6"	Field density test NO 44	SLOPE 11
N 97+50 E 114+20	-2.5'	6 1/2"	No density test	SLOPE 11
N 97+40 E 116+15	-2.5'	7"	No density test	SLOPE 11
N 97+20 E 116+70	-2.5'	6 3/4"	No density test	SLOPE 11
N 97+40 E 113+75	-2.0'	13"	Field density test NO 45	SLOPE 11
N 97+40 E 115+40	-2.0'	12 1/2"	Field density test NO 46	SLOPE 11
N 97+25 E 117+20	-2.0'	13"	Field density test NO 47	SLOPE 11

LAW ENGINEERING, INC

RECORD OF CLAY LAYER THICKNESS

PROJECT: TRAILRIDGE LANDFILL SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: KEN BUNNELL
PROJECT NO: 446-02322-01
DATE: _____

CLIENT: ENGLAND, THIMS & MILLER, INC.

LOCATION	ELEVATION	THICKNESS	SURFACE PREPARATION	REMARKS
N 97+10 E 114+50	-2.0'	13"	No density test	SLOPE 11
N 97+40 E 115+90	-2.0'	12 3/4"	NO density test	SLOPE 11
N 96+90 E 116+80	-2.0'	12 1/2"	NO density test	SLOPE 11
N 97+90 E 115+28	-0.5'	7"	Field density test NO 28	SLOPE 10 DOWNCOMER 16
N98+58 E 115+28	-0.5'	7 1/2"	Field density test NO. 29	SLOPE 9 DOWNCOMER 16
N99+35 E 115+28	-0.5'	7 1/2"	Field density test NO. 30	SLOPE 9 DOWNCOMER 16
N 97+92 E 115+28	-0.0'	14"	Field density test NO. 31	SLOPE 10 DOWNCOMER 16
N 98+60 E 115+28	-0.0'	13 1/2"	Field density test NO 32	SLOPE 9 DOWNCOMER 16
N 99+25 E 115+28	-0.0'	13 1/2"	Field density test NO 33	SLOPE 9 DOWNCOMER 16
N 97+32 E 115+28	-0.5'	7"	Field density test NO 99	SLOPE 11 DOWNCOMER 16
N 97+40 E 115+28	-0.0'	13 1/2"	Field density test NO 50	SLOPE 11 DOWNCOMER 16

LAW ENGINEERING, INC

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF SOIL TESTING

CLIENT: England, Thims & Miller, Inc. **DATE:** August 10, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

As requested, Law Engineering, Inc. (LAW) has completed the laboratory testing of soil samples obtained by our representative. The samples were tested for plasticity index and percent fines. The results of these tests are outlined below.

SAMPLE NO.	LOCATION	ELEVATION	PLASTICITY INDEX	LIQUID LIMIT	PERCENT FINES
1	Slope 11 - Sta. N97+30, E113+90	-2.0'	N/A	N/A	77.12
2	Slope 11 - Sta. N97+30, E113+90	-2.5'	87	122	80.54
3	Slope 11 - Sta. N97+50, E115+60	-2.0'	77	114	69.78
4	Slope 11 - Sta. N97+50, E115+60	-2.5'	N/A	N/A	72.57
5	Slope 11 - Sta. N97+00, E117+30	-2.0'	N/A	N/A	70.76
6	Slope 11 - Sta. N97+00, E117+30	-2.5'	75	107	78.23
7	Slope 10 - Sta. N97+80, E117+50	-2.0'	66	100	74.29
8	Slope 10 - Sta. N97+80, E117+50	-2.5'	N/A	N/A	74.50
9	Slope 10 - Sta. N98+30, E115+50	-2.0'	N/A	N/A	72.49
10	Slope 10 - Sta. N98+30, E115+50	-2.5'	65	110	78.93
11	Slope 10 - Sta. N98+20, E114+00	-2.0'	74	106	75.23
12	Slope 10 - Sta. N98+20, E114+00	-2.5'	N/A	N/A	77.67
13	Slope 9 - Sta. N98+80, E113+70	-2.0'	58	95	80.35
14	Slope 9 - Sta. N98+80, E113+70	-2.5'	68	105	75.80
15	Slope 9 - Sta. N98+70, E115+90	-2.0'	N/A	N/A	85.94
16	Slope 9 - Sta. N98+70, E115+90	-2.5'	N/A	N/A	75.75
17	Slope 9 - Sta. N98+40, E117+40	-2.0'	69	107	79.33
18	Slope 9 - Sta. N98+40, E117+40	-2.5'	N/A	N/A	70.93

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

REPORT OF PERMEABILITY TESTING
CLAY LINER TEST STRIP
TRAILRIDGE SIDE SLOPE CLOSURE
LAW PROJECT NO. 446-02322-01

TEST NO.	LOCATION	DRY DENSITY (PCF)	MOISTURE (PERCENT)	COEFFICIENT OF PERMEABILITY (CM/SEC)
P-1	Test Strip, Cell 10 - Sta. 113+56 at 97+93	66.5	52.4	6.0×10^{-9}
P-2	Test Strip, Cell 10 - Sta. 113+68 at 97+93	73.3	45.4	1.2×10^{-8}
P-3	Test Strip, Cell 10 - Sta. 113+60 at 98+15	70.9	34.9	2.3×10^{-8}
P-4	Test Strip, Cell 10 - Sta. 113+56 at 98+40	62.3	57.9	5.6×10^{-9}
P-5	Test Strip, Cell 10 - Sta. 113+68 at 98+40	71.3	45.4	1.2×10^{-8}
P-6	Test Strip, Cell 10 - Sta. 113+56 at 97+93	68.6	50.0	5.4×10^{-9}
P-7	Test Strip, Cell 10 - Sta. 113+68 at 97+93	67.1	49.9	6.1×10^{-9}
P-8	Test Strip, Cell 10 - Sta. 113+60 at 98+15	66.8	49.3	1.2×10^{-8}
P-9	Test Strip, Cell 10 - Sta. 113+56 at 98+40	65.2	56.4	6.0×10^{-9}
P-10	Test Strip, Cell 10 - Sta. 113+68 at 98+40	70.1	51.9	5.7×10^{-9}

Respectfully Submitted:

LAW ENGINEERING, INC.

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

REPORT OF PERMEABILITY TESTING
FIRST SIX INCHES CLAY LINER
TRAILRIDGE SIDE SLOPE CLOSURE
LAW PROJECT NO. 446-02322-01

TEST NO.	LOCATION	DRY DENSITY (PCF)	MOISTURE (PERCENT)	COEFFICIENT OF PERMEABILITY (CM/SEC)
P-11	Cell 9 - Sta. 99+30 at 114+00	65.7	51.8	6.4×10^{-9}
P-12	Cell 9 - Sta. 99+20 at 115+90	79.1	34.9	6.5×10^{-9}
P-13	Cell 9 - Sta. 99+15 at 117+00	65.5	51.7	4.4×10^{-9}
P-14	Cell 10 - Sta. 98+00 at 116+75	54.9	69.6	2.0×10^{-9}
P-15	Cell 10 - Sta. 98+20 at 115+10	63.8	57.9	3.9×10^{-9}
P-16	Downcomer D16 - Sta. 97+90	66.2	50.3	4.1×10^{-9}
P-17	Downcomer D16 - Sta. 98+58	65.0	53.7	2.1×10^{-9}
P-18	Downcomer D16 - Sta. 99+35	66.5	52.3	2.2×10^{-9}
P-19	Downcomer D16 - Sta. 97+92	64.5	54.9	2.1×10^{-9}
P-20	Downcomer D16 - Sta. 98+60	74.6	41.2	4.3×10^{-9}
P-21	Downcomer D16 - Sta. 99+25	69.6	46.6	4.6×10^{-9}

Respectfully Submitted,

LAW ENGINEERING, INC.

Bryant B. Wildes

Bryant B. Wildes
Chief Engineering Technician

REPORT OF PERMEABILITY TESTING TRAILRIDGE SIDE SLOPE CLOSURE LAW PROJECT NO. 446-02322-01				
TEST NO.	**LOCATION**	**DRY DENSITY (PCF)**	**MOISTURE (PERCENT)**	**COEFFICIENT OF PERMEABILITY (CM/SEC)**
P-22	Cell 9 - Sta. 98+75 at 117+20	65.5	55.4	4.3×10^{-9}
P-23	Cell 9 - Sta. 99+00 at 115+55	63.9	55.2	2.1×10^{-9}
P-24	Cell 9 - Sta. 99+00 at 114+00	71.2	51.6	2.2×10^{-9}
P-25	Cell 10 - Sta. 98+20 at 115+00	62.8	57.5	4.6×10^{-9}
P-26	Cell 10 - Sta. 98+00 at 117+10	63.9	55.5	6.8×10^{-9}

Respectfully Submitted,

LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

REPORT OF PERMEABILITY TESTING
TRAILRIDGE SIDE SLOPE CLOSURE
LAW PROJECT NO. 446-02322-01

TEST NO.	LOCATION	DRY DENSITY (PCF)	MOISTURE (PERCENT)	COEFFICIENT OF PERMEABILITY (CM/SEC)
P-27	Cell 11 - Sta. 97+05 at 117+35	70.7	53.2	5.9×10^{-9}
P-28	Cell 11 - Sta. 97+35 at 115+70	77.8	38.2	7.9×10^{-9}
P-29	Cell 11 - Sta. 97+40 at 114+10	66.6	48.2	5.5×10^{-9}
P-30	Cell 11 - Sta. 97+40 at 113+75	76.9	39.1	2.0×10^{-9}
P-31	Cell 11 - Sta. 97+40 at 115+40	74.1	42.2	4.2×10^{-9}
P-32	Cell 11 - Sta. 97+20 at 117+20	70.3	51.1	4.5×10^{-9}
P-33	Downcomer D16 - Sta. 97+32	60.4	63.6	2.1×10^{-9}
P-34	Downcomer D16 - Sta. 97+40	59.8	70.3	4.4×10^{-9}

Respectfully Submitted,

LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

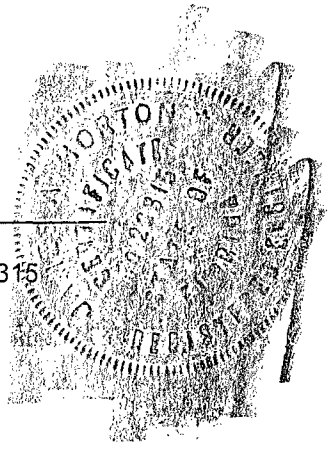
TOP SOIL

TOP SOIL

The top soil material came from a location designated as the Crystal Springs Pit. The test report dated June 16, 1994, was the pre-qualification verification of material properties. The locations and results of the thickness measurements and organic content and pH are included in this section. The density test results 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 QA/QC Plan.

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



LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF TOPSOIL PRE-QUALIFICATION

CLIENT: England, Thims & Miller, Inc. **DATE:** June 16, 1994

PROJECT: Trailridge Side Slope Closure
Cells 9, 10 and 11 **LAW PROJECT NO.** 446-02322-01

As requested, Law Engineering, Inc. (LAW) has completed the laboratory testing of a topsoil sample obtained by our representative. The sample was obtained at the Crystal Springs pit. The results are outlined below.

LOCATION	PH	PERCENT ORGANICS
Crystal Springs Pit (Stockpile)	5.31	2.9

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

RECORD OF FINAL COVER THICKNESS

PROJECT: TRAILRIDGE LANDFILL SIDE SLOPE CLOSURE
PHASE I AND II

CLIENT: ENGLAND, THIMS & MILLER, INC.

SENIOR TECHNICIAN: KEN BUNNELL
PROJECT NO: 446-02322-01
DATE: _____

LOCATION	THICKNESS	REMARKS
N 97+10 E 117+60	26"	SLOPE 11 Field density test NO 55
N 97+25 E 115+60	28"	SLOPE 11 Field density test NO 56
N 98+00 E 117+55	27"	SLOPE 10 Field density test NO 57
N 98+10 E 115+60	30"	SLOPE 10 Field density test NO. 58
N 97+40 E 114+20	29"	SLOPE 11 Field density test NO- 59
N 98+25 E 114+20	27"	SLOPE 10 Field density test NO- 61
N 98+60 E 117+30	26"	SLOPE 9 Field density test NO. 63
N 98+75 E 116+00	24"	SLOPE 9 Field density test NO. 65
N 99+30 E 117+20	19"	SLOPE 9 Field density test NO 67
N 99+50 E 116+30	18 1/2"	SLOPE 9 Field density test NO. 68

LOCATION	THICKNESS	REMARKS

LAW ENGINEERING, INC

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF TOPSOIL TESTING

CLIENT: England, Thims & Miller, Inc. **DATE:** July 22, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

As requested, Law Engineering, Inc. (LAW) has completed ph and organic content testing of topsoil samples obtained by our field representative. The results are outlined below.

SAMPLE NO.	LOCATION	PH	PERCENT ORGANICS
TS1	Cell 11 - Sta. N97+10, E117+60	5.56	2.99
TS2	Cell 11 - Sta. N97+25, E115+60	5.17	3.56
TS3	Cell 10 - Sta. N98+00, E117+55	5.03	3.68
TS4	Cell 10 - Sta. N98+10, E115+60	5.13	3.65

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF TOPSOIL TESTING

CLIENT: England, Thims & Miller, Inc. **DATE:** July 28, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

As requested, Law Engineering, Inc. (LAW) has completed testing of topsoil obtained by our representative in the field. The results are outlined below.

SAMPLE NO.	LOCATION	PH	PERCENT ORGANICS
TS5	Side slope 11 - Sta. N97+40, E114+20	5.89	8.35
TS6	Side slope 10 - Sta. N98+25, E114+20	5.56	6.97

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF TOPSOIL TESTING

CLIENT: England, Thims & Miller, Inc. **DATE:** August 4, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

As requested, Law Engineering, Inc. (LAW) has completed the laboratory testing of topsoil samples obtained by our representative. The results of these tests are outlined below.

SAMPLE NO.	LOCATION	PH	PERCENT ORGANICS
TS7	Slope 9 - Sta. N98+60, E117+30	5.86	3.5
TS8	Slope 9 - Sta. N98+75, E116+00	5.62	3.7
TS9	Slope 9 - Sta. N99+30, E117+20	5.77	3.5
TS10	Slope 9 - Sta. N99+50, E116+30	5.41	2.9

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904) 396-5173

REPORT OF SOIL TESTING

CLIENT: England, Thims & Miller, Inc. **DATE:** August 11, 1994

PROJECT: Trailridge Closure Cells 9, 10 & 11 **LAW PROJECT NO.** 446-02322-01

As requested, Law Engineering, Inc. (LAW) has completed ph and percent organic testing of two soil samples obtained by our field representative on August 9, 1994. The results of these tests are outlined below.

SAMPLE NO.	LOCATION	PERCENT ORGANIC	REQUIRED PERCENT ORGANIC	PH	REQUIRED PH
11	Slope 9 - Sta. N99+65, E114+00	4.23	1.5 - 10.0	5.54	5 - 7
12	Slope 9 - Sta. N98+90, E114+00	6.95	1.5 - 10.0	6.34	5 - 7

Respectfully Submitted,
LAW ENGINEERING, INC.

Bryant B. Wildes
Chief Engineering Technician

DOWNCOMER PIPE

DOWNCOMER PIPES

The clay material used was the same as that noted in the compacted clay layer section. The testing locations and results are also included in that section. Similarly, the results of the initial cover (clay layer subgrade) testing is included in the Initial Cover 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 QA/QC Plan.

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

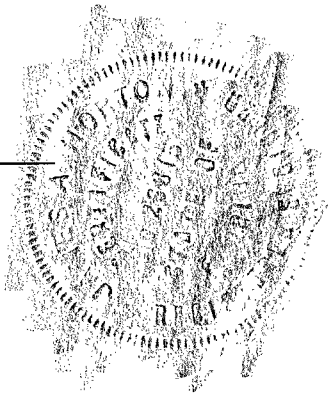
UNDERDRAIN - FILTER SAND

UNDERDRAIN FILTER SAND

The filter sand was obtained at an off-site borrow source in Edgar, Florida. The report included in this section dated July 6, 1994 was the pre-qualification verification of material properties. The installation verification testing results are included in this section. The locations of the testing are shown on the reports of test results. Chain of custody truck tickets are also included.

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 QA/QC Plan.

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



LAW ENGINEERING

P.O. Box 5728 — 3901 Carmichael Ave.
Jacksonville, Florida 32207
(904) 396-5173

REPORT of Filter Bed Sand Testing

Client: England, Thims & Miller, Inc. Date: 7/6/94

Project: Trailridge Closure Cells 9, 10 & 11 Project No: 446-02322-01

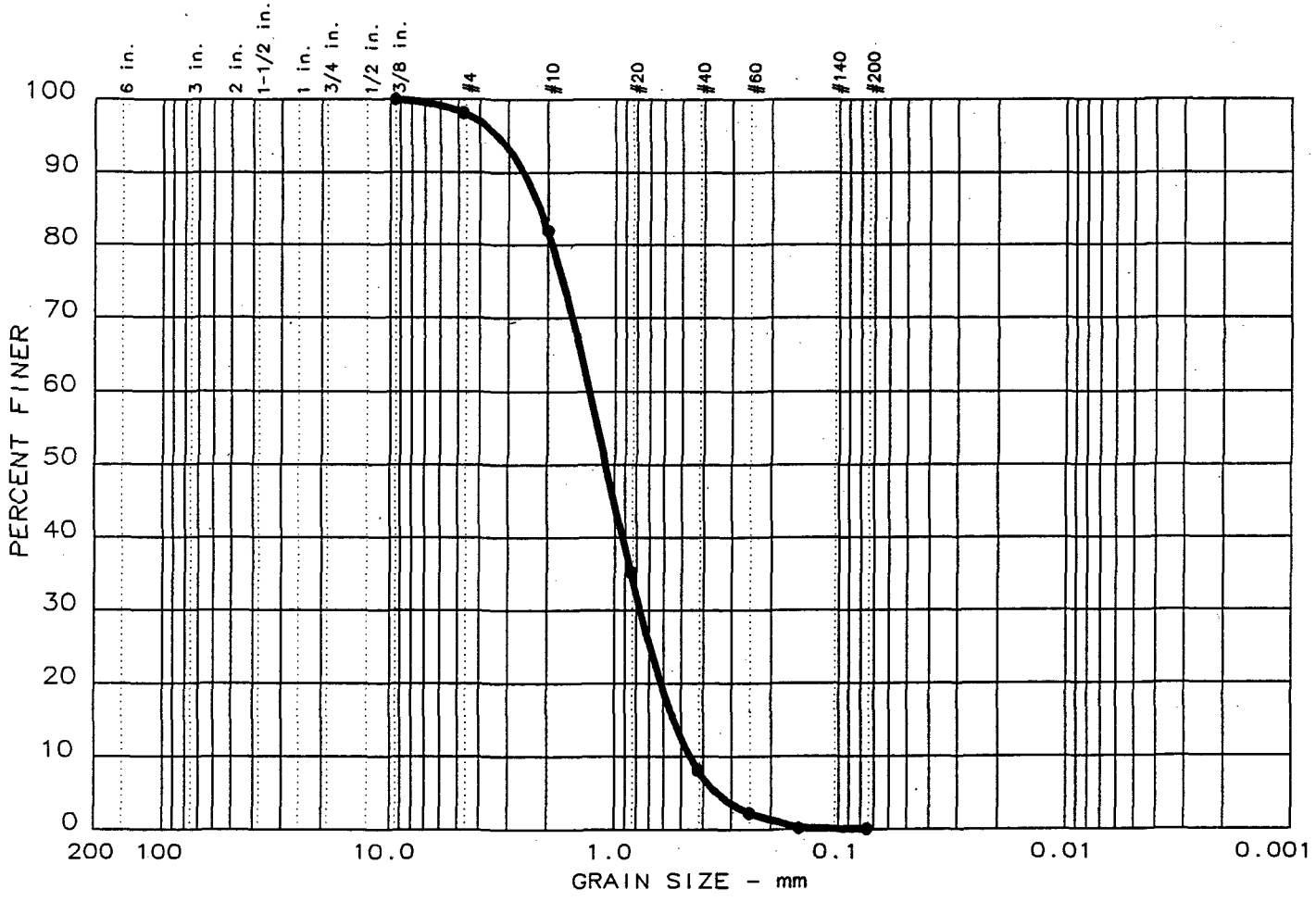
As requested, Law Engineering, Inc. (LAW) has completed testing of a filter bed sand sample obtained by our field representative from a truckload supplied by Feldspur Corporation. Tests include grain sieze, and hydraulic conductivity test per ASTM D-2434. The results are outlined below.

SAMPLE NO.	COEFFICIENT OF PERMEABILITY (CM/SEC)	PERCENT COMPACTION	REQUIRED COEFFICIENT OF PERMEABILITY (CM/SEC)	EFFECTIVE GRAIN SIZE (MM)	REQUIRED EFFECTIVE GRAIN SIZE (MM)
1	1.1×10^{-2}	100	1.0×10^{-3}	.458	.2 to .5

Respectfully submitted,
LAW ENGINEERING

Bryant B. Wildes, Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	1.9	98.1	0.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			2.16	1.30	1.10	0.769	0.5383	0.4581	0.99	2.8

MATERIAL DESCRIPTION	USCS	AASHTO
● Light Grey Coarse to Medium SAND	SP	A-1-b

Project No.: 446-02322-01
Project: Trailridge Closure Cells 9, 10 & 11
● Location: Filter Bed Sand

Date: 7-6-94

Remarks:
Sample No. 1
Source: Feldspar Corp.
Effective Grain Size:.5

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

Permeability Testing

Project: Trailridge Closure, Cells 9, 10 & 11

Client: England–Thims & Miller, Inc.

Project No.: 446–02322–01 Date: 7–12–94

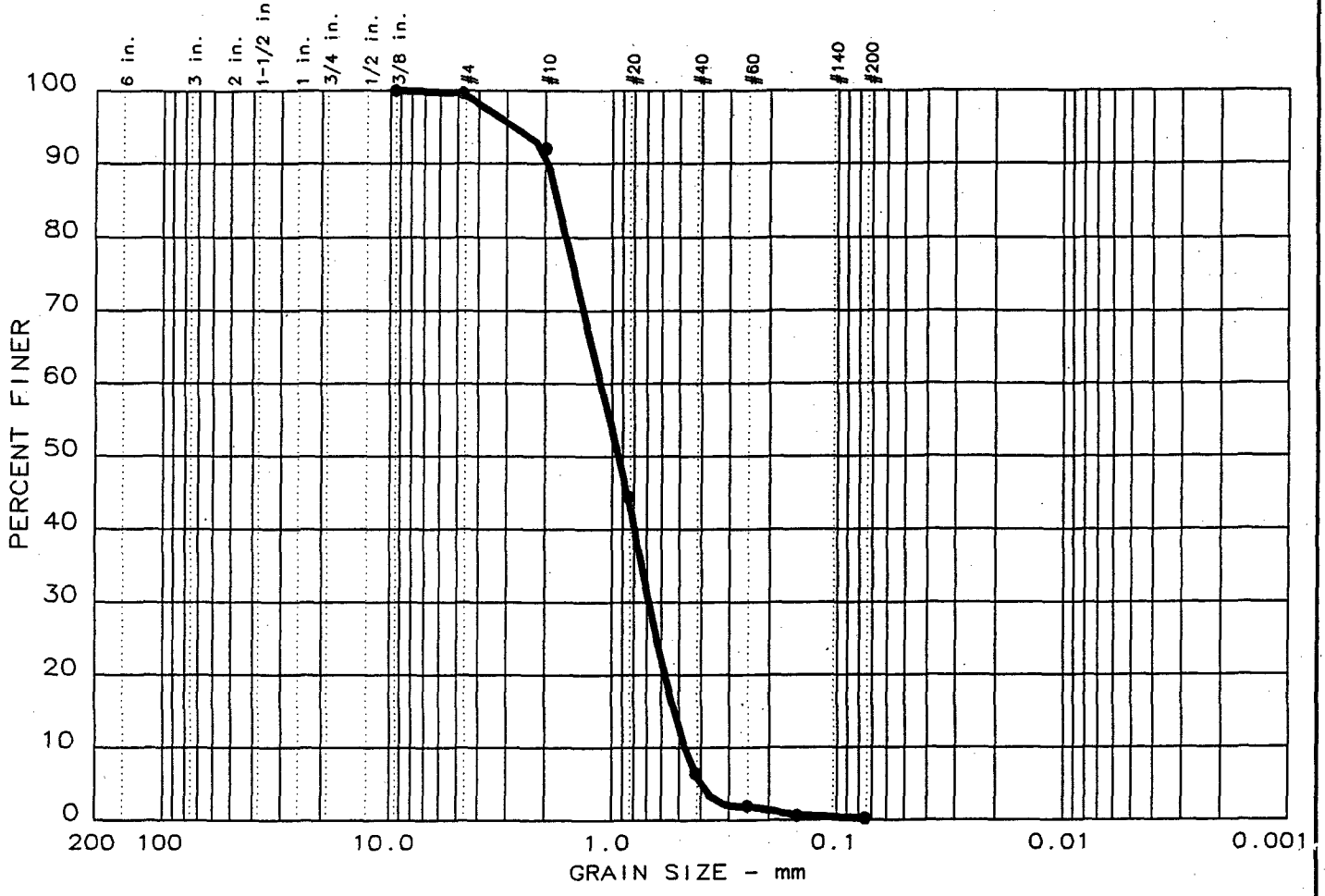
Sample No.	2
Proctor No.	1
Permeameter No.	8
Max. Dry Density of Sample (lbs/cuft)	108.6
Wt. Permeameter & Sample (gr)	1203.9
Wt. Permeameter (gr)	669
Permeameter Volume (cuft)	0.0096
Sample Wt. (gr)	534.9
Sample Wet Density (lbs/cuft)	122.8
Sample Moisture Content	13.2%
Sample Dry Density (lbs/cuft)	108.5
Sample Percent Compaction	100%
Area of Sample (sq cm)	21.31
Water Discharge (ml)	24.0
Time of Discharge (sec)	60.0
Distance Between Manometers (in)	2.7
Differance in Head (in)	2.3

Coeficient of Permeability	2.2E–02

Location of Sample: Terrace, Top of Cell No. 9

BTBW

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.3	99.5	0.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.76	1.12	0.94	0.685	0.5278	0.4704	0.89	2.4

MATERIAL DESCRIPTION	USCS	AASHTO
● Light Grey Medium to Fine SAND	SP	A-1-b

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
● Location: Terrace, Top of Cell No. 9
CLIENT: England, Thims & Miller, Inc.
Date: 7-12-94

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING

Remarks:
Sample No. 2

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

LAW ENGINEERING

Permeability Testing

Project: Trailridge Closure, Cells 9, 10 & 11

Client: England–Thims & Miller, Inc.

Project No.: 446–02322–01 Date: 7–12–94

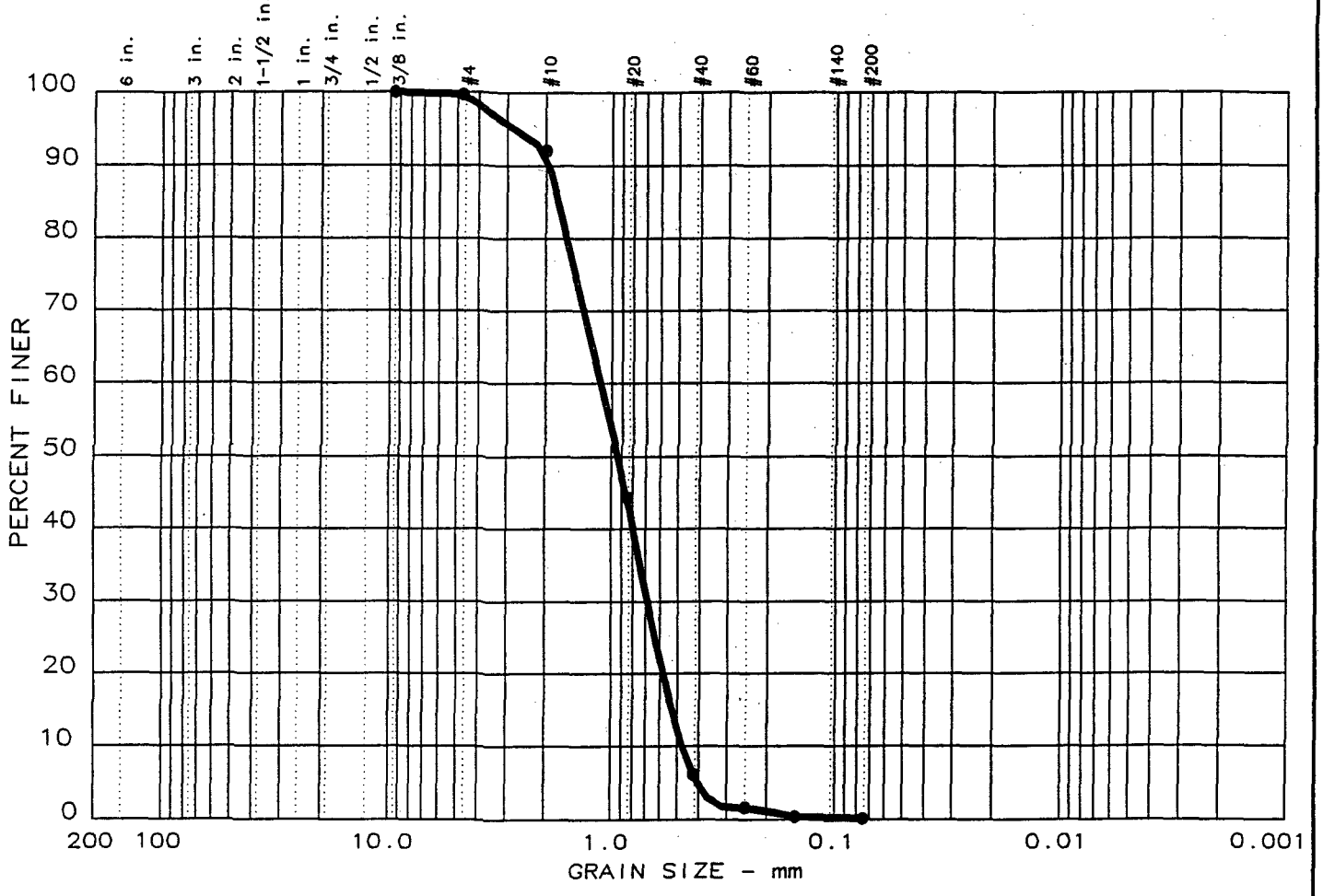
Sample No.	3
Proctor No.	1
Permeameter No.	17
Max. Dry Density of Sample (lbs/cuft)	108.6
Wt. Permeameter & Sample (gr)	1190.5
Wt. Permeameter (gr)	667.7
Permeameter Volume (cuft)	0.0094
Sample Wt. (gr)	522.8
Sample Wet Density (lbs/cuft)	122.6
Sample Moisture Content	13.0%
Sample Dry Density (lbs/cuft)	108.5
Sample Percent Compaction	100%
Area of Sample (sq cm)	21.49
Water Discharge (ml)	30.0
Time of Discharge (sec)	60.0
Distance Between Manometers (in)	2.5
Differance in Head (in)	6.5

Coeficient of Permeability	8.9E–03

Location of Sample: Terrace, Top of Cell No. 10

BBW

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	0.3	99.6	0.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.76	1.12	0.94	0.686	0.5303	0.4748	0.88	2.4

MATERIAL DESCRIPTION	USCS	AASHTO
● Light Grey Medium to Fine SAND	SP	A-1-b

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
● Location: Terrace, Top of Cell No. 10
CLIENT: England, Thims & Miller, Inc.
Date: 7-12-94

Remarks:
Sample No. 3

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date _____ 19__

Name

Address

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT	

QUAN	DESCRIPTION	PRICE	AMOUNT
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29056 Rec'd by

GS-46 GREENE'S PRINTING INC. - OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 7-6 19 94

Name Mid Florida

Address J B Coxwell Job #9411

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT
			✓			

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73780
	17 WP		24100
	1/2		
	#540		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29058 Rec'd by [signature]

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 7-6 19 94

Name Mid Florida

Address J B Coxwell Job #9411

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT
			✓			

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73780
	17 WP		23600
	1/2		
	#529		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29059 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 7-6 19 [illegible]

Name [illegible] Florida

Address [illegible]

SOLD BY	CASH	C O D	CHARGE	ON ACCT	MDSE RETD	PAID OUT
				✓		

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73280
	17 WP		24750
	1/2		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29063 Rec'd by [illegible]

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date [illegible] 19 [illegible]

Name [illegible] Florida

Address [illegible] Coxwell

SOLD BY	CASH	C O D	CHARGE	ON ACCT	MDSE RETD	PAID OUT
			✓			

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73280
	17 WP		73300
	1/2		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29062 Rec'd by

GS 46 GREENE'S PRINTING INC · OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 7-11 19 84

Name J B Caswell

Address no 1-Florida

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE RETD	PAID OUT	
			/				

QUAN	DESCRIPTION	PRICE	AMOUNT
			7328
	17 LVP		24470
	9/11		
	3554		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29123 Rec'd by J Caswell

GS-46 GREENE'S PRINTING INC. - OCALA, FL 32670 | 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 7. 11 19 SV
Name Tri-State Ridge Landfill
Address

SOLD BY	CASH	C O D	CHARGE ✓	ON ACCT	MDSE RETD	PAID OUT

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73280
	17 L WP		23900
	MF-552		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29131 Rec'd by [signature]

GS-46 GREENE'S PRINTING INC. - OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION
SILICA PRODUCTS
EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 7. 11 19 SV
Name Tri-State Ridge Landfill
Address

SOLD BY	CASH	C O D	CHARGE ✓	ON ACCT	MDSE RETD	PAID OUT

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73280
	17 L WP		23100
	# MF 560		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29132 Rec'd by [signature]

GS-46 GREENE'S PRINTING INC - OCALA, FL 32670 14007-AJ

THE Feldspar CORPORATION

EPK CLAY DIVISION

SILICA PRODUCTS

EDGAR, FLORIDA 32049 TEL: 904/481-2421

Customer's Order No. _____ Date 7-11 19 DV

Name Trail Ridge Landfill

Address

SOLD BY	CASH	C O D	CHARGE	ON ACCT	MDSE RETD	PAID OUT	
			✓				

QUAN.	DESCRIPTION	PRICE	AMOUNT
			73280
	1T WP		23300
	18 MF 550		
	TAX		
	TOTAL		

All claims and returned goods MUST be accompanied by this bill.

29133 Rec'd by

GS-46 GREENE'S PRINTING INC. · OCALA, FL 32670 14007-AJ

GAS WELL

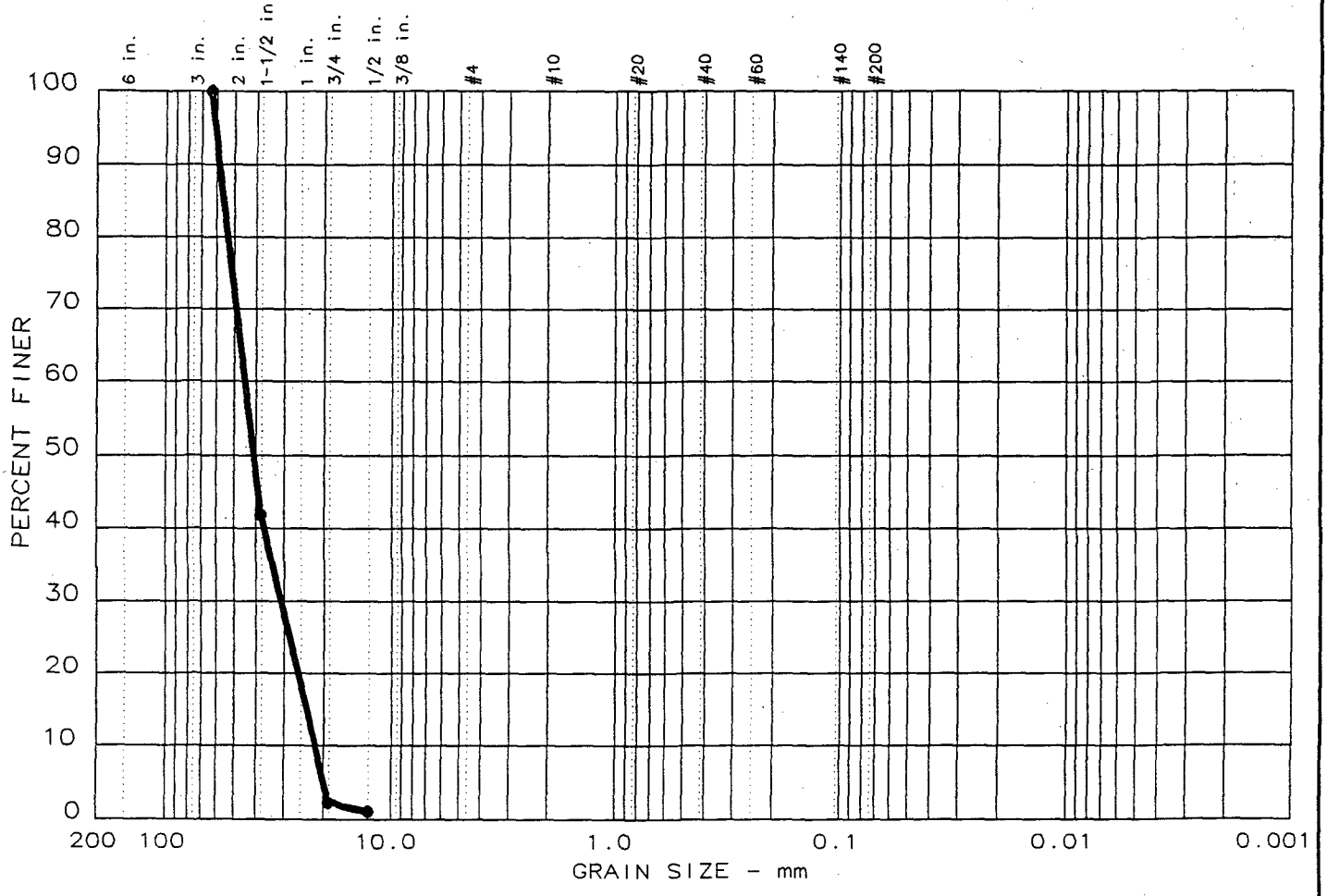
GAS WELL

The gradation of gravel for the gas well is included in this section. Chain of custody truck tickets for the gravel were verified at the site by our technician. The certification from the supplier for the bentonite is included. A log of the gas well is also provided.

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 QA/QC Plan.

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

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	100.0	0.0		

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			55.72	44.93	41.11	30.974	23.7684	21.8022	0.98	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● River Rock **Conforms to ASTM D 448 #24 Stone**	GP	A-1-a

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
● Location: Stockpile Sample No. 1
CLIENT: England, Thims & Miller, Inc.
Date: 6-6-94

Remarks:
Gas Well No. 4

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

WYO-BEN, INC.

WYO-BEN

November 24, 1993

Telefax: 713/675-4820

Mr. Roger Seigler
Griffin Remediation
Houston, TX

Roger:

In reference to our conversation of yesterday, I am submitting the following for your review and consideration. Wyo-Ben, Inc. is the manufacturer of ENVIROPLUG MEDIUM chipped bentonite. When this product is properly dispersed in an aqueous slurry, as per ASTM D1140, it will be composed of particles 90% or more of which will pass a 200 mesh sieve. In addition, we state that ENVIROPLUG MEDIUM is basically inert in the presence of methane, carbon dioxide and the combination of both compounds.

Also, at your request, I am faxing this to Wayne Williford with J. B. Coxwell Contracting at 904-783-2970.

Please advise us if you need any additional backup data.

Best regards,

Pat Kelly

Pat Kelly
Technical Sales Engineer

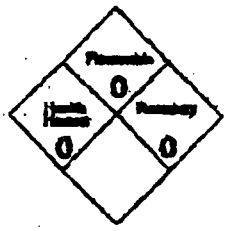
PK/jdm

cc: Richard K. Brown, Wyo-Ben

3044 Hesper Road•P.O. Box 1979•Billings, Montana 59103 U.S.A.•406-652-6351•Telex 31-9430•Telefax 406-656-0748

WYO-BEN, INC.

MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD IDENTIFICATION SYSTEM

Trade Name(s): ENVIROPLUG® MEDIUM	
Generic Name(s): Wyoming (Western) Bentonite (CAS No. 1302-78-9)	
Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0)	
Manufacturer: WYO-BEN, INC. Address: P.O. Box 1979 Billings, Montana 59103	Telephone Numbers: Information: (406) 652-6351 EMERGENCY: (406) 652-6351

Ingredient	CAS No.	%	Hazard
Crystalline Silica (SiO_2)	7631-86-9		Low concentrations of crystalline silica (SiO_2) in the form of quartz, crystobalite, and tridymite may be present in airborne bentonite dust. The concentration level of total free silica in airborne bentonite dust is variable depending upon origin of bentonite ore, fineness of product, moisture content of product, local humidity and wind conditions, etc. (See Section VI)

Boiling Point (°F): NA	Specific Gravity (H_2O=1): 2.45-2.55
Vapor Pressure (mm. Hg): NA	Melting Point: Approx. 1450°C
Vapor Density (Air = 1): NA	Evaporation Rate (Butyl Acetate = 1): NA
Solubility in Water: Insoluble, forms colloidal suspension.	pH: 8-10 (5% aqueous suspension)
Density (at 20° C): 67 lbs./cu.ft. as product.	
Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.	

Flash Point: NA	Flammable Limits: LEL: NA UEL: NA
Special Fire Fighting Procedures: NA	
Unusual Fire and Explosion Hazards: None. Product will not support combustion.	
Extinguishing Media: None for product. Any media can be used for the packaging.	

Stability: Stable	
Hazardous Polymerization: None	
Incompatibility: None	
Hazardous Decomposition Products: None	
NA = Not Applicable ND = Not Determined	Date Prepared: March 9, 1990

Routes of Exposure and Effects:

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: Acute (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in a dry cough.

Chronic (long term) exposure to free silica containing airborne bentonite dust where levels are higher than TLV's may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion are symptomatic.

Ingestion: No adverse effects.

Permissible Exposure Limits: (for air contaminants)	OSHA PEL (8hr. TWA)	ACGIH TLV
Bentonite as nuisance dust		
Total dust	15mg/m³	ND
Respirable dust	5mg/m³	ND
Crystalline Quartz (respirable)	(0.1mg/m³	0.1mg/m³

Where cristobalite or tridymite are present use 1/2 of the PEL or TLV value for crystalline quartz.

Carcinogenicity: Bentonite is not listed by NTP, IARC or OSHA. IARC, 1987, concludes that there is limited evidence suggesting the carcinogenicity in humans of inhaled crystalline silica (IARC Class 2A).

Acute Oral LD_{50}: ND	Acute Dermal LD_{50}: ND	Aquatic Toxicology LC_{50}: ND

Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

Inhalation: Move to area free from dust. If symptoms of irritation persist contact physician. Inhalation may aggravate existing respiratory illness.

Steps to be Taken if Material is Released or Spilled: Avoid breathing dust; wear respirator approved for silica bearing dust. Vacuum up to avoid generating airborne dust. Avoid using water. Product slippery when wetted.

Waste Disposal Methods: Product should be disposed of in accordance with applicable local, state and federal regulations.

Handling and Storage Precautions: Use NIOSH/MSHA respirators approved for silica bearing dust when free silica containing airborne bentonite dust levels exceed PEL/TLV's. Clean up spills promptly to avoid making dust. Storage area floors may become slippery if wetted.

Ventilation Requirements: Mechanical, general room ventilation. Use local ventilation to maintain PEL's/TLV's.

Respirator: Use respirators approved by NIOSH/MSHA for silica bearing dust.

Eye Protection: Generally not necessary. Personal preference.

Gloves: Generally not necessary. Personal preference.

Other Protective Clothing or Equipment: None

Avoid prolonged inhalation of airborne dust.

Shipping Name: Common Ground Clay (NOIBN)	Hazard Class: Not Hazardous

Hazardous Substances: None

Cautionary Labeling: None required

All information presented herein is believed to be accurate, however, it is the user's responsibility to determine in advance of use that the information is current and suitable for their circumstances. No warranty or guarantee, expressed or implied is made by WYO-BEN, INC. as to this information, or as to the safety, toxicity or effect of the use of this product.

LANDFILL GAS WELL CONSTRUCTION LOG

Landfill Name Trail Ridge

Date June 9, 1994

Well No. GW4 Ventwell #2

Location Trailridge

Installer Griffin Dewatering

DIMENSIONS:

a. Diameter of well (ft) 2

b. Well casing interval (ft) 40

c. Diameter of lower well casing (in) 8

d. Diameter of upper well casing (in) 8

e. Total depth of well (ft) 44

f. Slotted interval of well casing (ft) 40
from 44 ft to 4 ft.

h. Permeable material interval (ft) 41

i. Impermeable plug interval (ft) 1

k. Backfill material interval (ft) 2

l. Length of pipe above ground (ft) 3.5

MATERIALS:

Permeable material FDOT #2 River Rock

Impermeable material Enviroplug Bentonite

Backfill material 2ft Sand 1ft Clay

Casing material CPVC Sch 80

CONSTRUCTION:

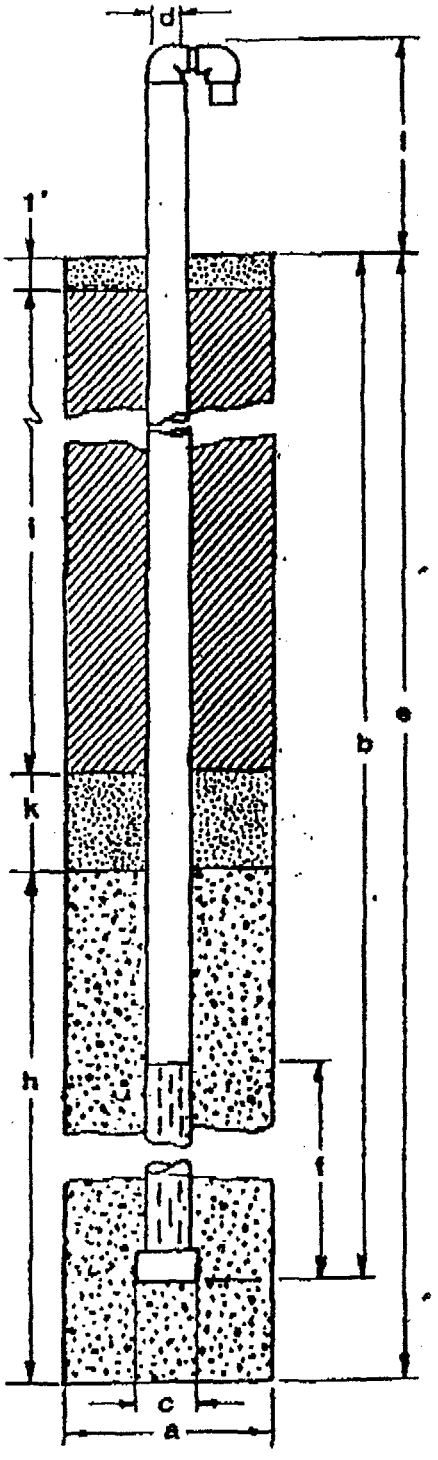
Method of drilling well Caldweld 200 Bucket Auger

Method of placing fill material Backhoe

Method of placing casing Drill Rig

Problems encountered NONE

(Use back side for additional comments)



CONSTRUCTION PHOTOGRAPHS

CLAY LAYER TEST STRIP - 5-26-94

CLAY LAYER TEST STRIP - 5-27-94

CLAY LAYER INSTALLATION - 6-1-94

CLAY LAYER INSTALLATION - 6-29-94

GAS WELL G4 INSTALLATION - 6-9-94

SAND INSTALLATION - 7-19-94

LAYER AT TIE-IN - 6-01-94

CLAY LAYER AT TIE-IN - 6-02-94

EXCAVATION OF TRASH FOR DOWNCOMER PIPE - 6-4-94

COMPLETED DOWNCOMER 7-16-94

TOPSOIL PLACEMENT - 7-19-94

SOD INSTALLATION - 7-22-94

APPENDIX A

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
			Tests Performed on 05/25/94				
1	14.5	107.5	2	90	90	3	*
2	15.1	108.1	2	90	90	3	*
			Tests Performed on 05/26/94				
3	22.9	85.3	1	91	80	3	**
4	22.0	84.8	1	90	80	3	**
5	23.1	85.4	1	91	80	3	**
6	21.5	84.4	1	90	80	3	**
7	21.0	84.5	1	90	80	3	**

TEST LOCATIONS:

1 Test strip cell 10 - Sta. 113+61 at 97+98; **Subgrade Thickness 18+"**
2 Test strip cell 10 - Sta. 113+61 at 98+98; **Subgrade Thickness 18+"**
3 Test strip cell 10 - Sta. 113+56 at 97+93; **Clay Thickness 7"**
4 Test strip cell 10 - Sta. 113+68 at 97+93; **Clay Thickness 7½"**
5 Test strip cell 10 - Sta. 113+60 at 98+15; **Clay Thickness 6-3/4"**
6 Test strip cell 10 - Sta. 113+56 at 98+40; **Clay Thickness 7"**
7 Test strip cell 10 - Sta. 113+68 at 98+40; **Clay Thickness 7½"**

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
2	119.8	13.4
1	94.2	23.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

*** Top of Intermediate (Initial Cover Fill)**
**** Top of First 6" Lift of Clay Cover**

PERMEABILITY SAMPLE NO.

No. 3 - P1 No. 6 - P4
No. 4 - P2 No. 7 - P5
No. 5 - P3

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

Bryant B. Wildes

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 05/27/94					
8	25.3	84.7	1	90	80	3	*
9	25.0	84.7	1	90	80	3	*
10	24.4	84.9	1	90	80	3	*
11	23.0	84.4	1	90	80	3	*
12	23.0	84.6	1	90	80	3	*

TEST LOCATIONS:

8 Clay Cover - Test strip cell 10, Sta. 113+56 at 97+93
9 Clay Cover - Test strip cell 10, Sta. 113+68 at 97+93
10 Clay Cover - Test strip cell 10, Sta. 113+60 at 98+15
11 Clay Cover - Test strip cell 10, Sta. 113+56 at 98+40
12 Clay Cover - Test strip cell 10, Sta. 113+68 at 98+40

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
1	94.2	23.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

* Top of Second Lift of Clay Cover in Test Strip

CLAY THICKNESS AND PERM SAMPLE NO.

No. 8 13½" P6
No. 9 14" P7
No. 10 13" P8
No. 11 13-3/4" P9
No. 12 14½" P10

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

Bryant B. Wildes

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 05/31/94							
13	8.9	107.5	2	90	90	3	*
14	9.4	107.9	2	90	90	3	*
15	8.2	107.4	2	90	90	3	*
16	10.5	113.5	2	95	90	3	*
17	11.1	110.4	2	92	90	3	*

TEST LOCATIONS:

13 Cell 9, Sta. 99+18 at 114+25; Initial cover thickness 18"
14 Cell 9, Sta. 99+18 at 115+60; Initial cover thickness 18"
15 Cell 9, Sta. 99+18 at 117+00; Initial cover thickness 18"
16 Cell 10, Sta. 98+10 at 115+60; Initial cover thickness 24+"
17 Cell 10, Sta. N98+10 at 117+00; Initial cover thickness 24+"

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
2	119.8	13.4

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

*** Top of Initial Cover Material**

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

Bryant B. Wildes

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/04/94							
18	13.9	107.4	2	90	90	1	*
19	12.8	108.5	2	91	90	1	*
20	13.2	110.0	2	92	90	1	*
21	12.6	109.1	2	91	90	1	*

TEST LOCATIONS:

18 Initial cover - cell 10 downcomer D16, Sta. 97+85; Depth Check 19"
19 Initial cover - cell 10 downcomer D16, Sta. 98+45; Depth Check 18"
20 Initial cover - cell 9 downcomer D16, Sta. 99+05; Depth Check 18"
21 Initial cover - cell 9 downcomer D16, Sta. 99+50; Depth Check 19"

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
2	119.8	13.4

REMARKS

Performed In General Accordance With:
1 - ASTM D2937

* Top of Initial Cover Material - Downcomer Subgrade

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO.:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
		Tests Performed on 06/06/94					
22	14.0	108.5	2	91	90	3	*

TEST LOCATIONS:

22 Same location as test 21 after repair of erosion from rain
Thickness 18"

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
2	119.8	13.4

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

* Top of Downcomer Subgrade

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/09/94							
23	43.8	70.6	4	87	80	3	*
24	46.7	73.0	4	89	80	3	*
25	48.1	68.9	4	84	80	3	*
26	47.0	67.6	4	83	80	3	*
27	50.1	68.2	4	84	80	3	*
28	45.9	70.8	4	87	80	3	*
29	47.1	70.4	4	86	80	3	*
30	43.7	72.2	4	89	80	3	*

TEST LOCATIONS:

23 Cell 9 - Sta. 99+30 at 114+00; 6-1/4" Thickness, Perm Sample P11
24 Cell 9 - Sta. 99+20 at 115+90; 6-3/4" Thickness, Perm Sample P12
25 Cell 9 - Sta. 99+15 at 117+00; 7" Thickness, Perm Sample P13
26 Cell 10 - Sta. 98+00 at 116+75; 7" Thickness, Perm Sample P14
27 Cell 10 - Sta. 98+20 at 115+10; 6-1/4" Thickness, Perm Sample P15
28 Downcomer D16, Sta. 97+90; 7" Thickness, Perm Sample P16
29 Downcomer D16, Sta. 98+58; 7-1/2" Thickness, Perm Sample P17
30 Downcomer D16, Sta. 99+35; 7-1/2" Thickness, Perm Sample P18

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

* Top of First 6" Lift of Cover Clay

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

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LAW ENGINEERING

3901 Carmichael Avenue, Jacksonville, Florida 32207

REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/14/94							
31	40.4	73.9	4	91	80	3	*
32	43.8	73.4	4	90	80	3	*
33	41.7	74.1	4	91	80	3	*

TEST LOCATIONS:

31 Downcomer D16, Sta. 97+92; 14" Thickness, Perm Sample P19
32 Downcomer D16, Sta. 98+60; 13-1/2" Thickness, Perm Sample P20
33 Downcomer D16, Sta. 99+25; 13-1/2" Thickness, Perm Sample P21

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

* Top of Second 6-Inch Lift of Clay Liner

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/23/94							
34	50.5	69.0	4	85	80	3	*
35	48.2	71.7	4	88	80	3	*
36	44.1	73.9	4	91	80	3	*
37	48.6	70.1	4	86	80	3	*
38	48.5	69.9	4	86	80	3	*

TEST LOCATIONS:

34 Cell 9, Sta. 98+75 at 117+20; Thickness 12", Perm Sample P22
35 Cell 9, Sta. 99+00 at 115+55; Thickness 13", Perm Sample P23
36 Cell 9, Sta. 99+00 at 114+00; Thickness 13", Perm Sample P24
37 Cell 10, Sta. 98+20 at 115+00; Thickness 13-1/2", Perm Sample P25
38 Cell 10, Sta. 98+00 at 117+10; Thickness 13-1/2", Perm Sample P26

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

* Top of 2nd 6-Inch Lift of Cover Clay (Finish Elevation)

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/29/94							
39	10.9	110.9	2	93	90	3	*
40	9.3	116.5	2	97	90	3	*
41	10.1	109.4	2	91	90	3	*

TEST LOCATIONS:

39 Cell 11 - Sta. 97+40 at 114+00, initial cover; 18" Thickness
40 Cell 11 - Sta. 97+35 at 115+70, initial cover; 24" Thickness
41 Cell 11 - Sta. 97+10 at 117+20, initial cover; 24" Thickness

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
2	119.8	13.4

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

*** Top of Initial Cover Material**

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 06/30/94							
42	47.2	75.0	4	92	80	3	*
43	49.7	72.6	4	89	80	3	*
44	51.4	70.7	4	87	80	3	*

TEST LOCATIONS:

42 Cell 11 - Sta. 97+05 at 117+35; 7" Thickness, Perm Sample P27
43 Cell 11 - Sta. 97+35 at 115+70; 7" Thickness, Perm Sample P28
44 Cell 11 - Sta. 97+40 at 114+10; 6" Thickness, Perm Sample P29

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

* Top of First 6-Inch Lift of Cover Clay

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 07/01/94							
45	50.0	73.6	4	90	80	3	*
46	58.5	67.5	4	83	80	3	*
47	52.0	73.0	4	89	80	3	*
48	10.2	107.7	2	90	90	3	**
49	67.0	65.4	4	80	80	3	***
50	50.1	67.3	4	82	80	3	****

TEST LOCATIONS:

45 Cell 11 - Sta. 97+40 at 113+75; 13" Thickness, Perm Sample P30
46 Cell 11 - Sta. 97+40 at 115+40; 12-1/2" Thickness, Perm Sample P31
47 Cell 11 - Sta. 97+25 at 117+20; 13" Thickness, Perm Sample P32
48 Downcomer D16 - Sta. 97+30
49 Downcomer D16 - Sta. 97+32; 7" Thickness, Perm Sample P33
50 Downcomer D16 - Sta. 97+40; 13-1/2" Thickness, Perm Sample P34

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
4	81.6	34.4
2	119.8	13.4

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

* Top of Second 6-Inch Lift of Cover Clay
** Top of Initial Cover
*** First 6-Inch Lift of Cover Clay
**** Second 6-Inch Lift of Cover Clay

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
			Tests Performed on 07/20/94				
51	13.8	105.8	3	94	90	3	*
52	13.2	106.1	3	94	90	3	*
53	14.9	94.2	5	92	90	3	*
54	15.6	95.4	5	93	90	3	*
55	13.2	93.8	5	91	90	3	**
56	13.8	94.4	5	92	90	3	**
57	13.0	93.6	5	91	90	3	**
58	14.1	94.8	5	92	90	3	**

TEST LOCATIONS:

51 Slope 11 - Sta. 97+05 at 117+60
52 Slope 11 - Sta. 97+30 at 115+60
53 Slope 10 - Sta. 97+95 at 117+55
54 Slope 10 - Sta. 98+10 at 115+60
55 Slope 11 - Sta. 97+10 at 117+60; 26" Thickness, Sample #TS1
56 Slope 11 - Sta. 97+25 at 115+60; 28" Thickness, Sample #TS2
57 Slope 10 - Sta. 98+00 at 117+55; 27" Thickness, Sample #TS3
58 Slope 10 - Sta. 98+10 at 115+60; 30" Thickness, Sample #TS4

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
3	113.1	12.1
5	102.6	15.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

* First 1' Lift of Topsoil
** Second 1' Lift of Topsoil

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 07/27/94							
59	13.4	93.3	5	91	90	3	*
60	14.5	94.2	5	92	90	3	**
61	12.6	94.7	5	92	90	3	*
62	13.9	94.3	5	92	90	3	**

TEST LOCATIONS:

59 Side slope No. 11 - Sta. N97+40, E114+20;29" Thickness; Sample TS5
60 Side slope No. 11 - Sta. N97+40, E114+20;
61 Side slope No. 10 - Sta. N98+25, E114+20;27" Thickness; Sample TS6
62 Side slope No. 10 - Sta. N98+25, E114+20;

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
5	102.6	15.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

*** Second Lift of Topsoil**
**** First Lift of Topsoil**

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

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REPORT OF FIELD DENSITY TESTS

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 08/04/94							
63	12.6	94.4	5	92	90	3	*
64	13.1	96.3	5	94	90	3	**
65	11.9	95.7	5	93	90	3	*
66	12.4	95.5	5	93	90	3	**
67	10.6	95.7	5	93	90	3	*
68	11.6	96.3	5	94	90	3	*

TEST LOCATIONS:

63 Slope 9 - Sta. N98+60, E117+30; 26" Thickness, Sample TS7
64 Slope 9 - Sta. N98+60, E117+30
65 Slope 9 - Sta. N98+75, E116+00; 24" Thickness, Sample TS8
66 Slope 9 - Sta. N98+75, E116+00
67 Slope 9 - Sta. N99+30, E117+20; 19" Thickness, Sample TS9
68 Slope 9 - Sta. N99+50, E116+30; 18-1/2" Thickness, Sample TS10

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
5	102.6	15.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

*** Second Lift of Topsoil**
**** First Lift of Topsoil**

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

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REPORT OF FIELD DENSITY TESTS

** CORRECTED COPY **

CLIENT: England, Thims & Miller, Inc. **JOB NO:** 446-02322-01

PROJECT: Trailridge Landfill Closures 9, 10 & 11

TEST NUMBER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PROCTOR NUMBER	COMPACTION (%)	SPECIFIED COMPACTION (%)	TEST METHOD	ELEVATION OR DEPTH
Tests Performed on 08/09/94							
69	18.6	93.1	5	91	90	3	*
70	17.9	94.4	5	92	90	3	*
71	19.1	94.5	5	92	90	3	**

TEST LOCATIONS:

69 Slope 9 - Sta. N99+65, E114+00; 19" Thickness, Sample TS11
70 Slope 9 - Sta. N98+90, E114+00; 25" Thickness, Sample TS12
71 Slope 9 - Sta. N98+90, E114+00

TEST COMPARED TO:

PROCTOR NUMBER	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)
5	102.6	15.0

REMARKS

Performed In General Accordance With:
3 - ASTM D2922

*** Second Lift of Topsoil**
**** First Lift of Topsoil**

DISTRIBUTION:
England, Thims & Miller, Inc. (D2C2)

RESPECTFULLY SUBMITTED:

Bryant B. Wildes

Bryant B. Wildes

APPENDIX B

RECORD OF DAILY RAINFALL

The record of daily rainfall was recorded by LAW engineering technicians Ken Bunnell and Harlon Wiggins during the period of June 2, and August 1, 1994. Rain gauges were located at two locations, near the leachate tank and behind the administration office. The rain gauge behind the administration office was moved to the top of the hill on June 20, 1994. The following data was recorded at the leachate tank rain gauge location.

RECORD OF DAILY RAINFALL

TRAILRIDGE LANDFILL
SIDE SLOPE CLOSURE
PHASE I AND II

SENIOR TECHNICIAN: KEN BUNNELL
LAW PROJECT NO.: 446-02322-01

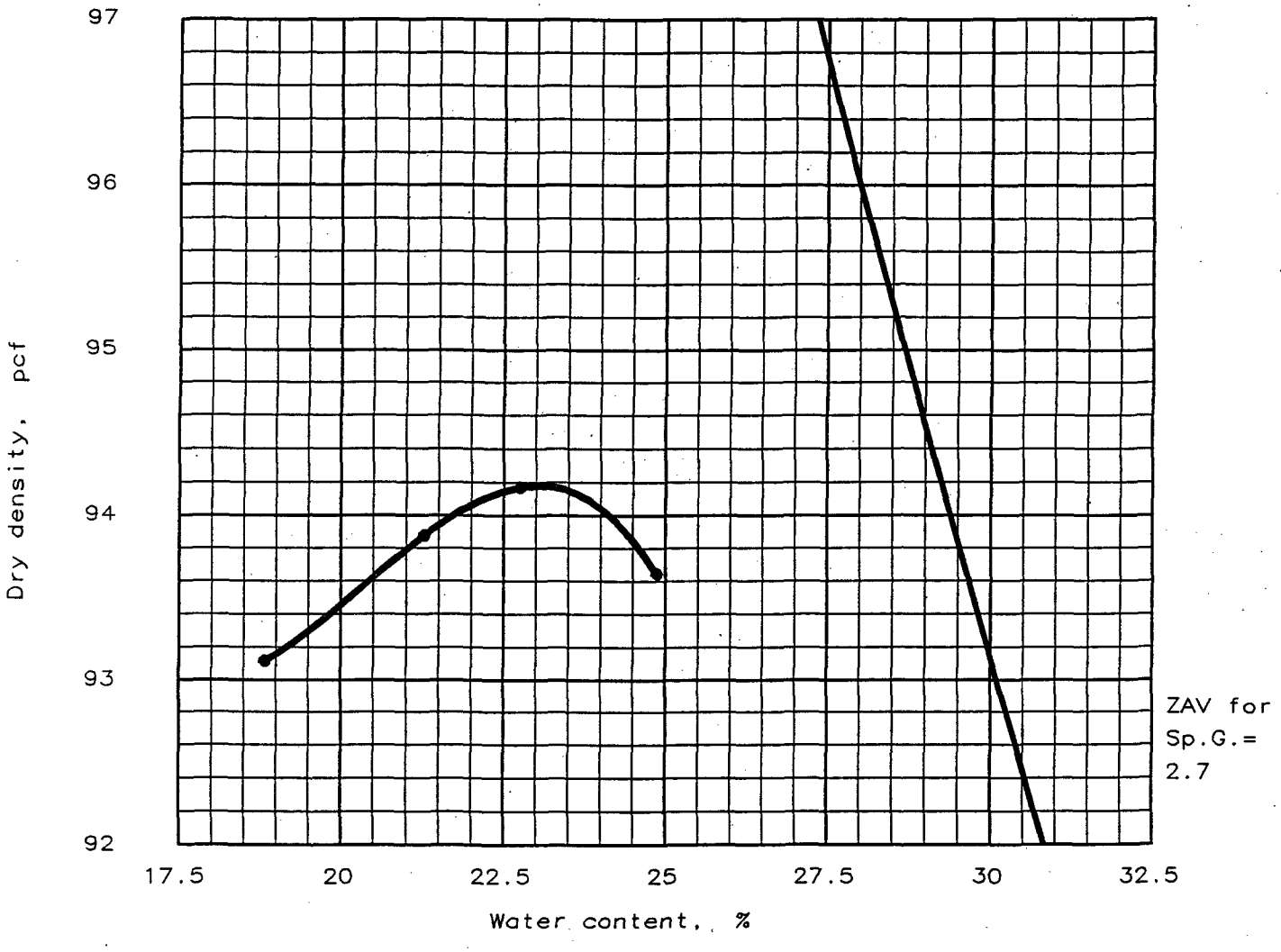
DATE	RECORDED RAINFALL		DATE	RECORDED RAINFALL		DATE	RECORDED RAINFALL
6-2-94	0.00"		6-21-94	0.40"		7-11-94	0.00"
6-4-94	0.10"		6-22-94	0.00"		7-12-94	0.00"
6-6-94	0.80"		6-23-94	0.00"		7-13-94	1.20"
6-7-94	1.50"		6-24-94	1.50"		7-14-94	0.00"
6-8-94	1.25"		6-27-94	1.50"		7-15-94	0.00"
6-9-94	0.35"		6-28-94	0.00"		7-16-94	0.00"
6-10-94	1.30"		6-29-94	0.00"		7-18-94	0.00"
6-11-94	0.80"		6-30-94	0.00"		7-19-94	0.00"
6-13-94	1.3"		7-1-94	0.10"		7-20-94	0.70"
6-14-94	0.30"		7-5-94	0.70"		7-21-94	0.00"
6-15-94	0.00"		7-6-94	0.00"		7-22-94	<0.10"
6-16-94	0.50"		7-7-94	0.90"		7-27-94	<0.10"
6-17-94	0.40"		7-8-94	0.80"		7-28-94	0.20"
6-18-94	0.00"		7-9-94	0.00"		8-1-94	0.80"
6-20-94	0.30"		7-10-94	0.10"			

NOTE: Recorded rainfall at leachate tank rain gauge location.

LAW ENGINEERING, INC.

APPENDIX C

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						
	CH	A-7-6	26% %		116	95	0 %	62.4 %

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 23.0 % Maximum dry density = 94.2 pcf	Grey Brown Silty Very Sandy CLAY

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
Location: Clay Qualification Sample No. 1
CLIENT: England, Thims & Miller, Inc.
Date: 5-20-94

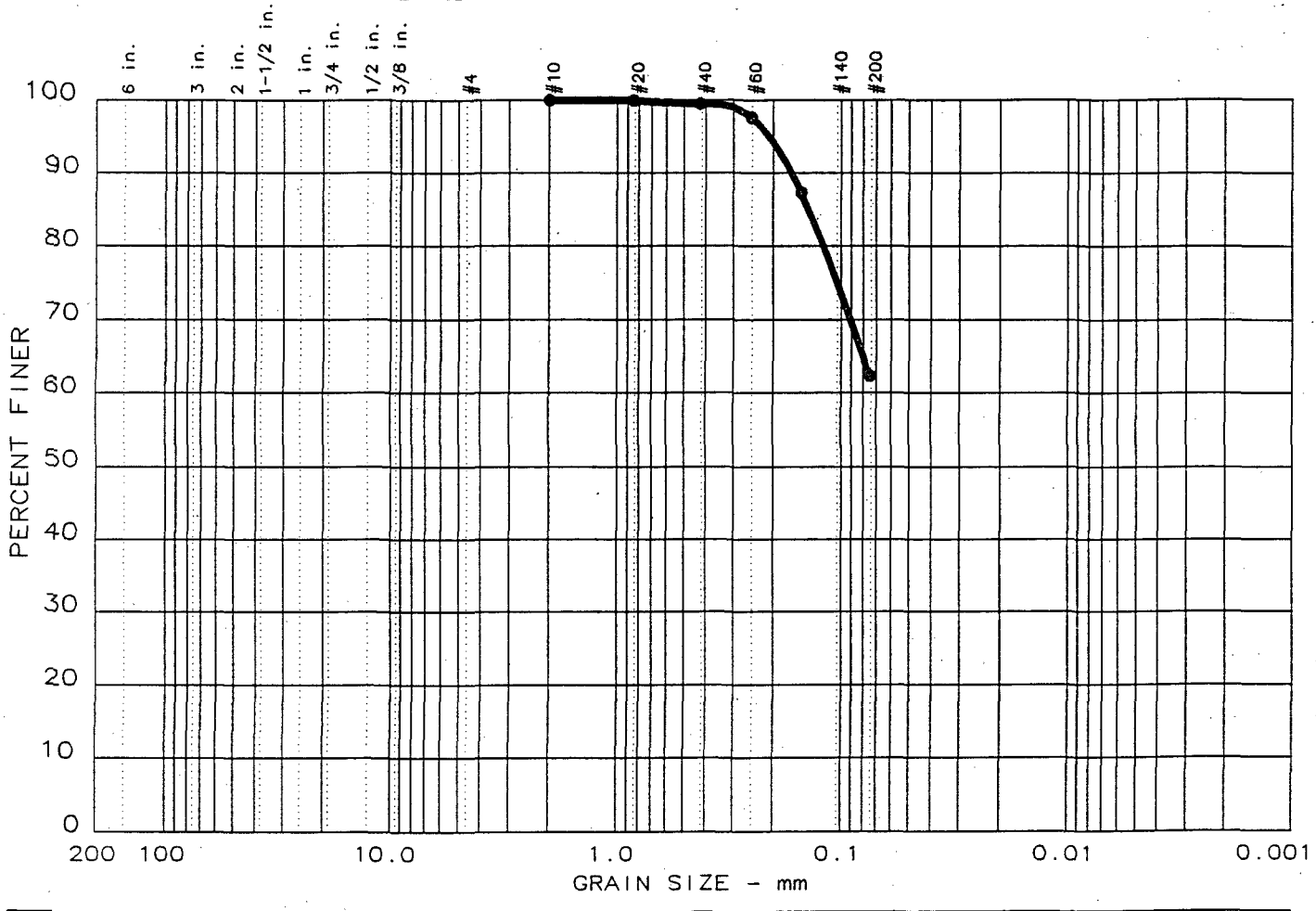
Remarks:
Proctor No. 1

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	37.6	62.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	116	95	0.14							

MATERIAL DESCRIPTION	USCS	AASHTO
● Grey Brown Silty Very Sandy CLAY	CH	A-7-6

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
● Location: Clay Qualification Sample No. 1

Date: 5-23-94

Remarks:

Proctor No. 1

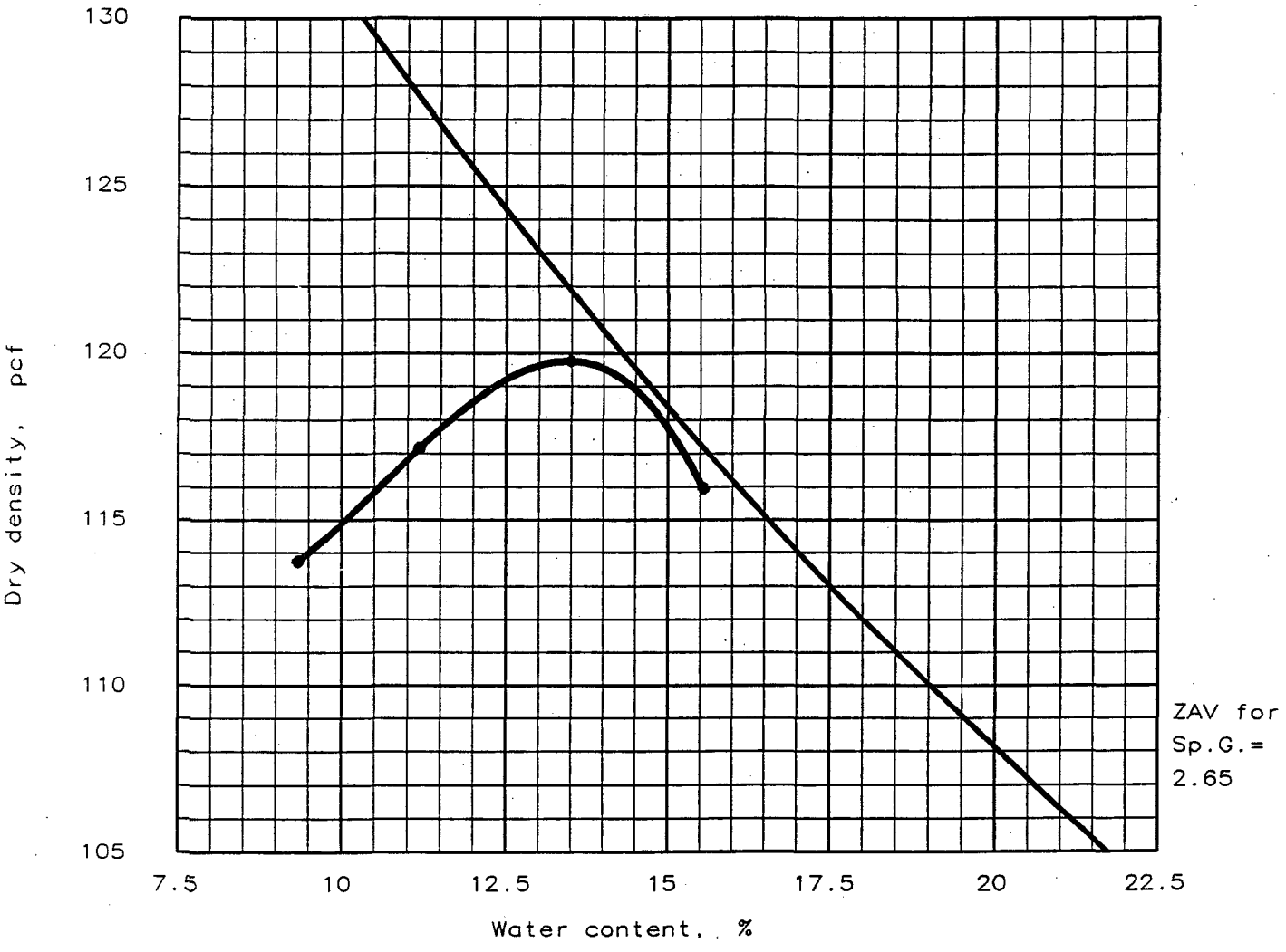
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Modified" Proctor, ASTM D 1557, Method A, ASTM D 4718 correction applied

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 13.4 % Maximum dry density = 119.8 pcf	Light Brown Clayey Very Silty Fine SAND

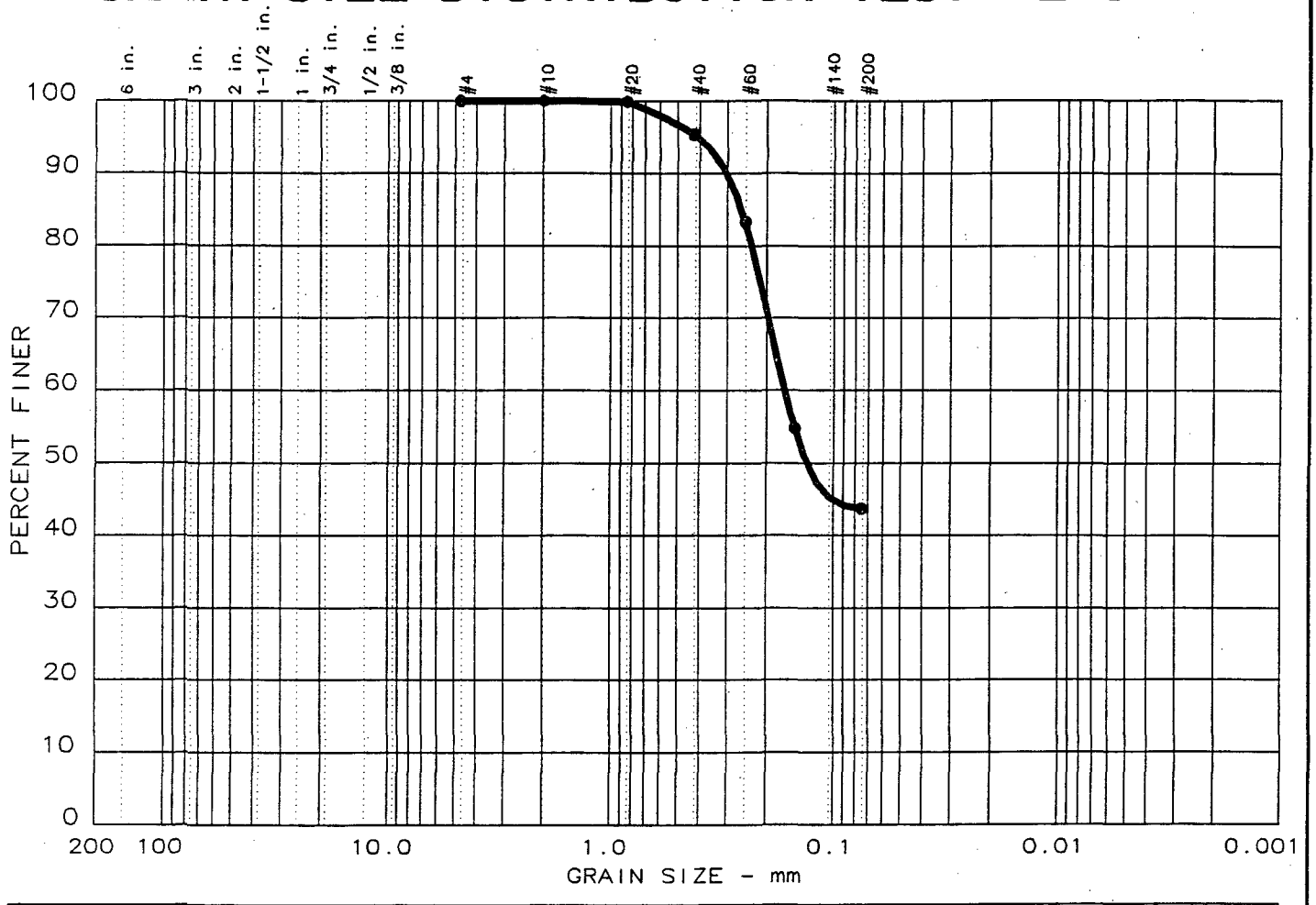
Project No.: 446-02322-01
Project: Trailridge Closure Cells 9,10,& 11
Location: New Retention Pond, CMP Crossing
CLIENT: England, Thims & Miller, Inc.
Date: 5-18-94

Remarks:
Proctor No. 2

PROCTOR TEST REPORT
LAW ENGINEERING INC.

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	56.3	43.7	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.26	0.17	0.13					

MATERIAL DESCRIPTION	USCS	AASHTO
● Light Brown Clayey Very Silty Fine SAND	SM	A-4

Project No.: 446-02322-01
Project: Trailridge Closure Cells 9,10,& 11
● Location: New Retention Pond, CMP Crossing

Date: 5-21-94

Remarks:

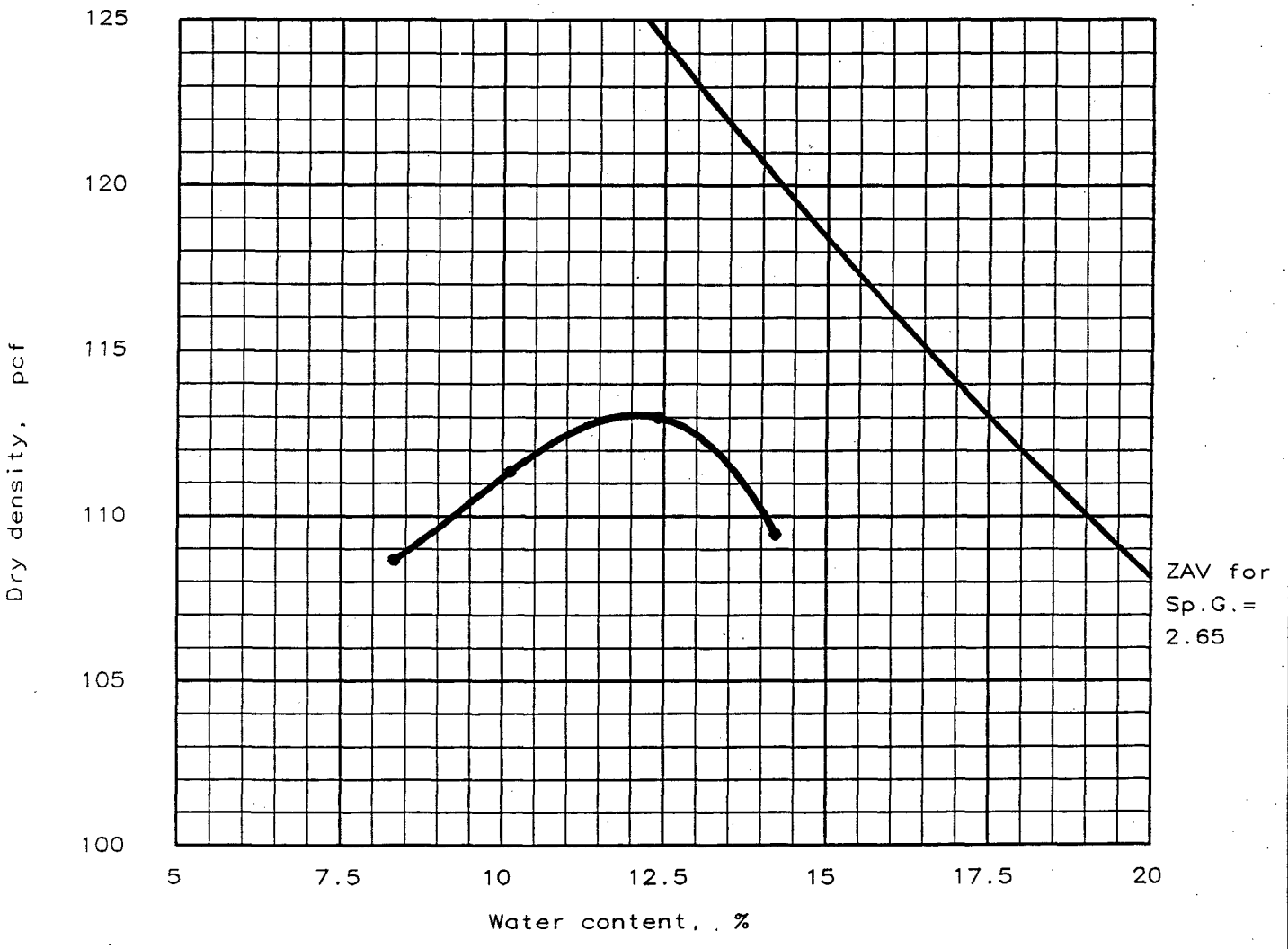
Proctor No. 2

GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Modified" Proctor, ASTM D 1557, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 12.1 % Maximum dry density = 113.1 pcf	Grey Silty Fine SAND w/ A Few Roots

Project No.: 446-02322-01
Project: Trailridge Closure Cells 9,10,& 11
Location: Topsoil Cover, Lawtey Pit-1
CLIENT: England, Thims & Miller, Inc.
Date: 5-18-94

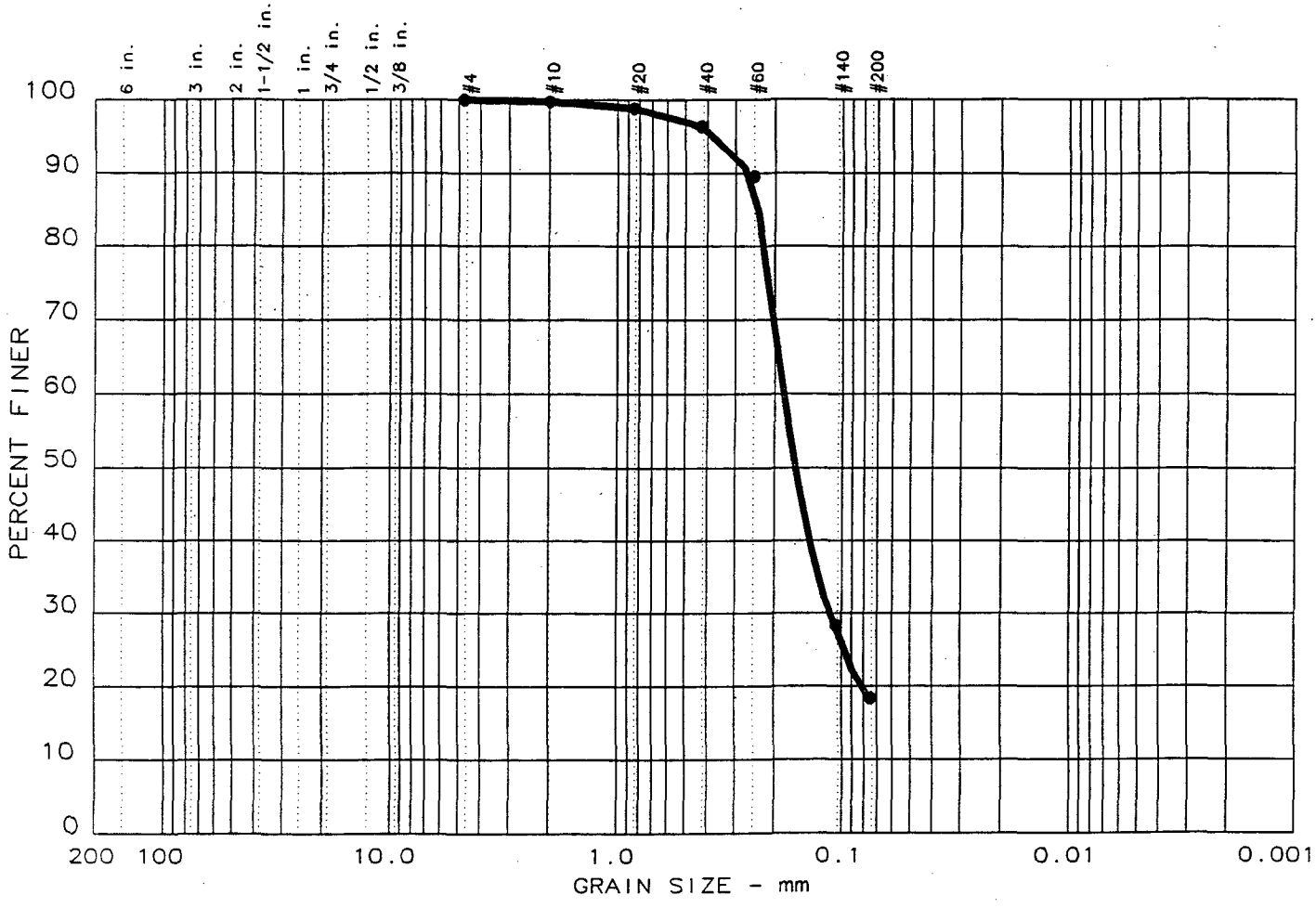
Remarks:
Proctor No. 3
% Organics: 3.12%
PH- 4.38

PROCTOR TEST REPORT
LAW ENGINEERING INC.

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	81.6	18.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.24	0.18	0.16	0.112				

MATERIAL DESCRIPTION	USCS	AASHTO
● Grey Silty Fine SAND w/ A Few Roots	SM	A-2-4

Project No.: 446-02322-01
Project: Trailridge Closure Cells 9,10,& 11
● Location: Topsoil Cover, Lawtey Pit No. 1

Date: 5-21-94

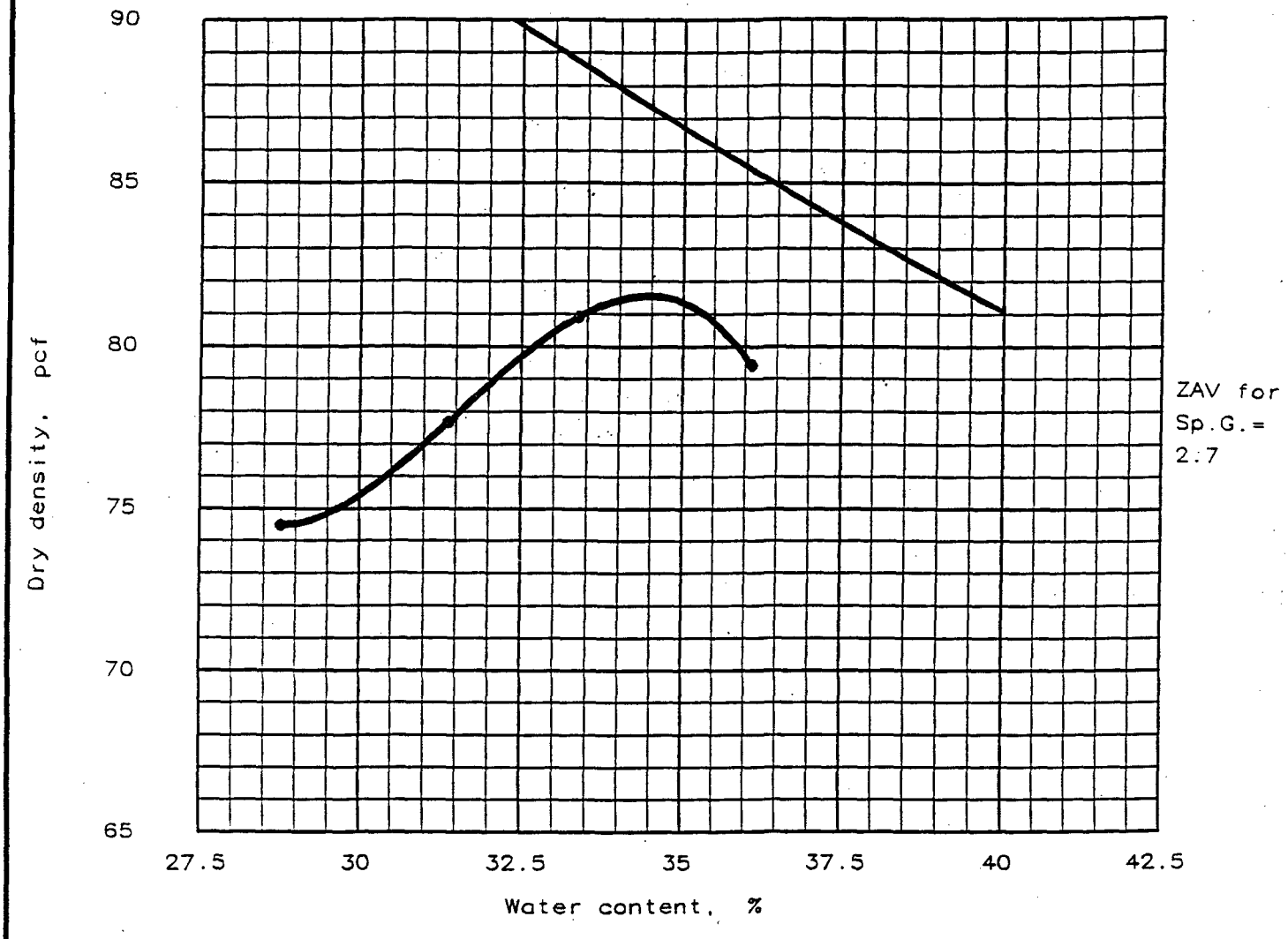
Remarks:
Proctor No. 3
% Organics: 3.12%
PH- 4.38

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING

Bryant B. Wildes

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 34.4 % Maximum dry density = 81.6 pcf	Grey Sandy Very Silty CLAY

Project No.: 446-02322-01

Project: Trailridge Closure, Cells 9, 10 & 11

Location: Clay Cap Material

Date: 6-5-94

Remarks:

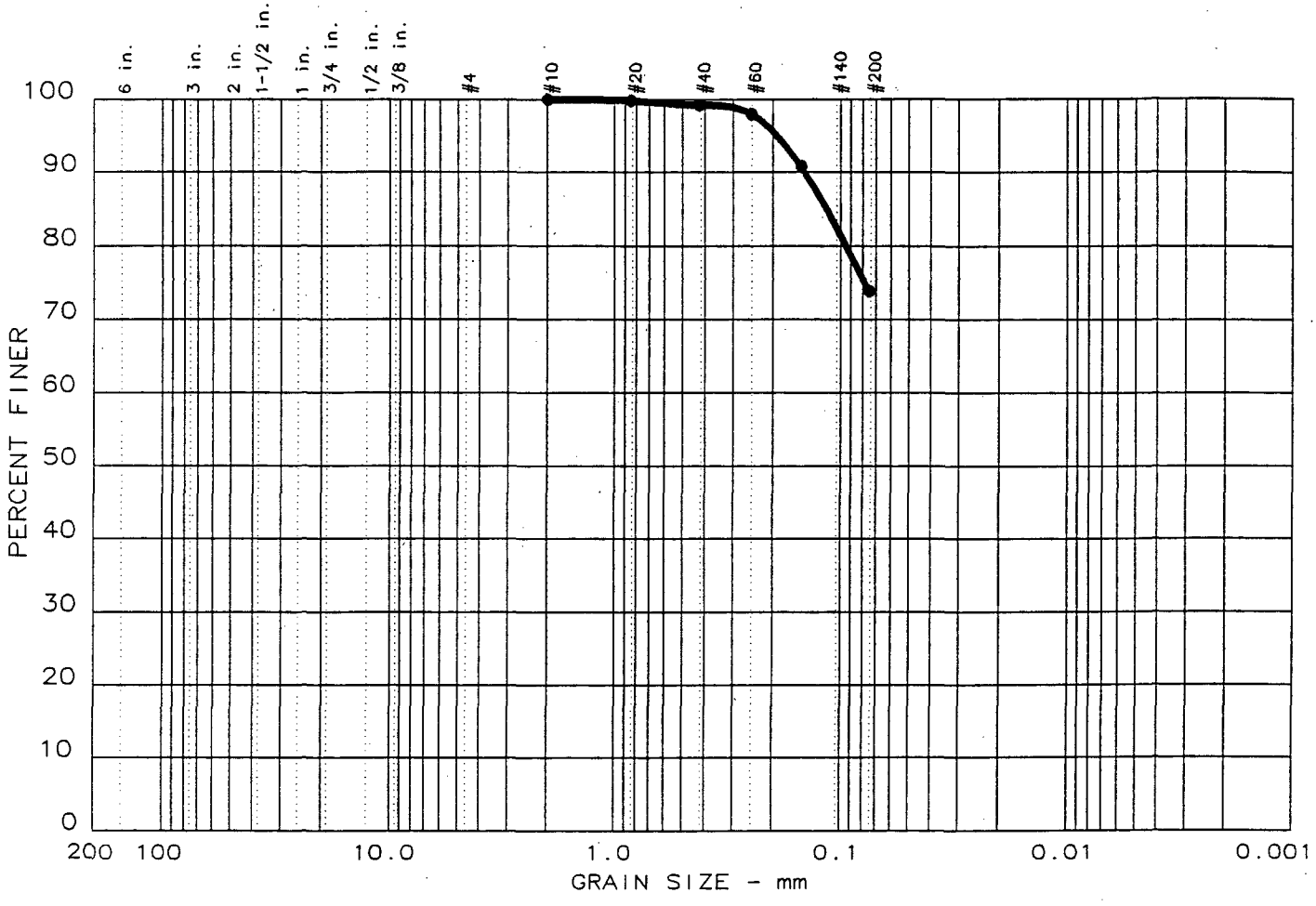
Proctor No. 4

PROCTOR TEST REPORT

LAW ENGINEERING INC.

Bryant B. Wilder

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	26.1	73.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	97	66	0.11							

MATERIAL DESCRIPTION	USCS	AASHTO
● Grey Sandy Very Silty CLAY	CH	A-7-5

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
● Location: Clay Cap Material

Date: 6-5-94

Remarks:

Proctor No. 4

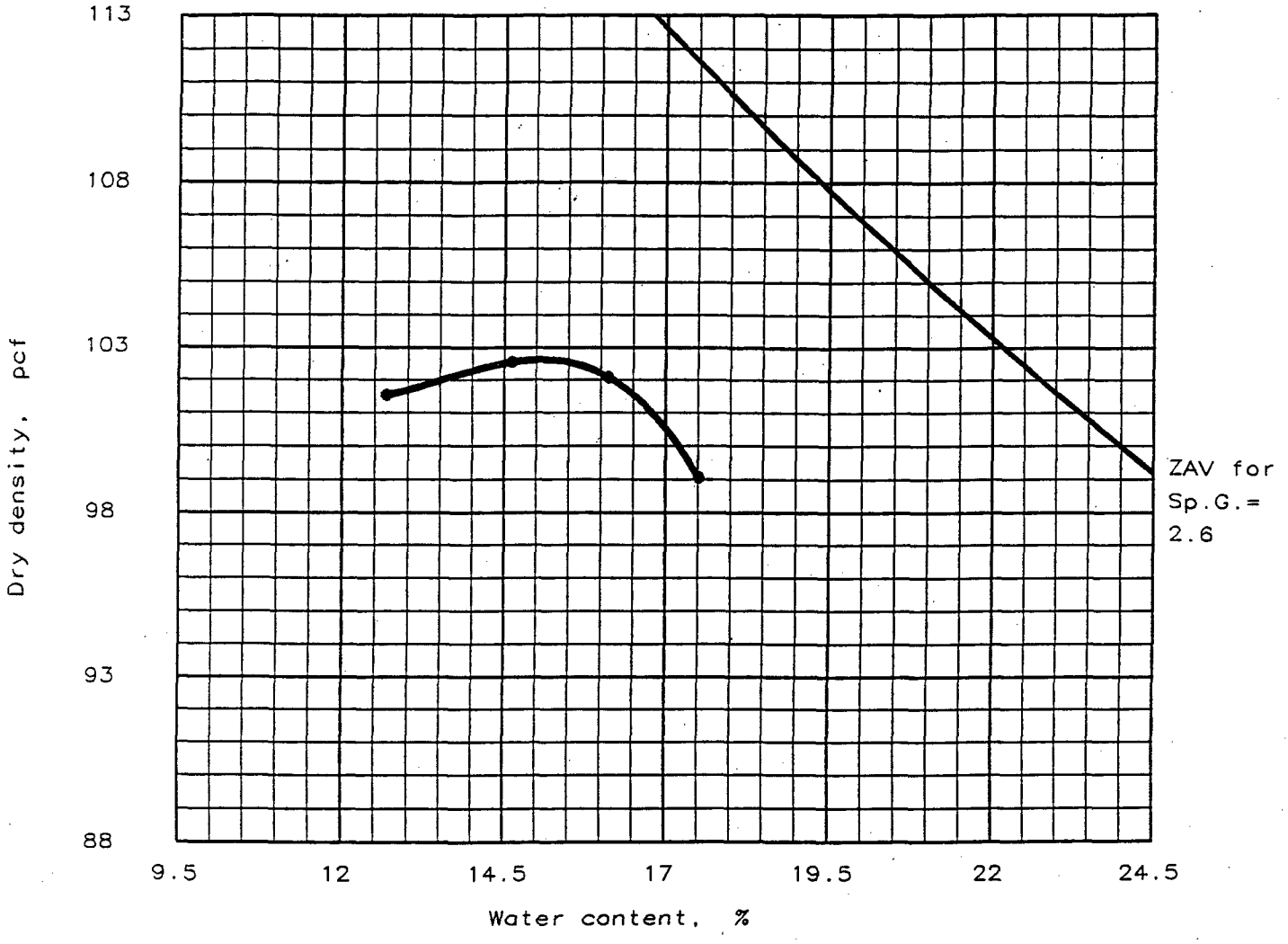
GRAIN SIZE DISTRIBUTION TEST REPORT

LAW ENGINEERING

Bryant B. Wilder

REVIEWED BY: Bryant B. Wildes
Chief Engineering Technician

PROCTOR TEST REPORT



"Modified" Proctor, ASTM D 1557, Method A

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No. 4	% < No. 200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 15.0 % Maximum dry density = 102.6 pcf	Grey Fine SAND w/ A Few Roots

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
Location: Topsoil, Crystal Springs Pit

Date: 6-16-94 **Client: England, Thims & Miller**

Remarks:
Proctor No. 5
Percent Organic: 2.9%
PH Value: 5.31

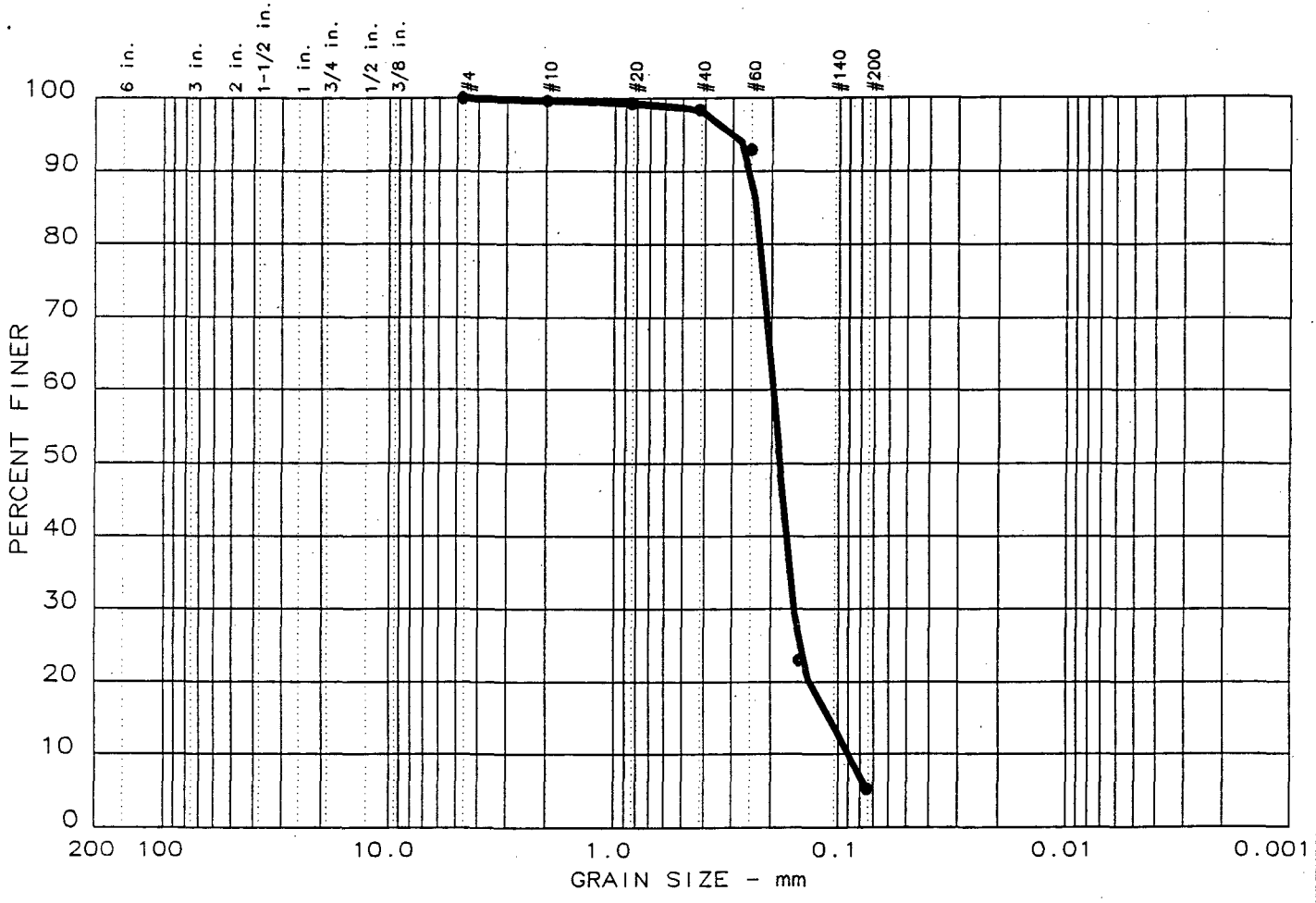
PROCTOR TEST REPORT

LAW ENGINEERING INC.

Bryant B. Wildes

Reviewed By: Bryant B. Wildes
Chief Engineering Technician

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	94.8	5.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.24	0.20	0.18	0.158	0.1091	0.0897	1.41	2.2

MATERIAL DESCRIPTION	USCS	AASHTO
● Grey Fine SAND w/ A Few Roots	SP-SM	A-3

Project No.: 446-02322-01
Project: Trailridge Closure, Cells 9, 10 & 11
● Location: Topsoil, Crystal Springs Pit

Date: 6-20-94

Remarks:
Proctor No. 5

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING BBW

Figure No. ____

2 OVER SIZED

MAP SCANNED

SEPARATELY