CELL 2 CERTIFICATION RECEIVED 12/15/2005 and 1/6/2005

TETRA TECH, INC.

HARTMAN & ASSOCIATES, INC.

engineers, hydrogeologists, surveyors & management consultants

January 5, 2005

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Via UPS Overnight

Ms. Simone Core, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Subject:

Response to Cell 2 Certification Comments Enterprise Recycling & Disposal Facility Angelo's Aggregate Materials, Ltd. FDEP Permit Nos. 177982-001-SC, 177982-002-SO Pasco County, Florida

Dear Ms. Core:

On behalf of Angelo's Aggregate Materials, Ltd., Hartman & Associates, Inc. (HAI) is providing responses to your request for additional information regarding the certification documentation for Cell 2 at the Enterprise Recycling and Disposal Facility in Dade City, Florida. Your comments are stated first with our responses following.

The cover letter indicates that construction activities were completed on September 29, 2004. 1. Please note that during the Department's site inspection on November 1, 2004, final construction activities on Cell 2 were still in progress. Please clarify.

According to Angelo's Project Manager, Mr. Jeff Rogers, the cell floor construction was **Response:** completed on September 29, 2004. However, after cell construction was completed, Angelo's compacted additional confining material into the side slopes of the cell for additional coverage. The cell was then fine graded to eliminate the equipment tracks and Foresight Surveyors completed the fill survey. Mr. Rogers stated that these were the activities observed by the FDEP inspector on November 1, 2004.

Appendix D, page 1 contains a typographic error. It appears that the last sentence of the 2. paragraph should state 87 ft NGVD on the south end of cell 2 rather than the north end. Please correct.

The error has been corrected and a revised page is attached. **Response:**

Ms. Simone Core, P.E. January 5, 2005 Page 2

3. September 29, 2004 site inspection report [Appendix D] does not indicate whether permeability and IPD tests were taken on the second and third lifts of Cell 2. Please provide a revised September 29, 2004 site inspection report.

Response: A revised page is attached.

4. The majority of test location descriptions on the In-place Density Test Report do not correspond to the Figure from UES. Please provide a figure drawn to scale showing IPD test locations accurately reflecting the test location descriptions. For example, test nos. 50 and 51 correspond to the northern end of Cell 2 on the figure provided by UES, however the test report indicates that test nos. 50 and 51 are to the south and east of the SW corner of Cell 2. Please clarify.

Response: HAI has requested that UES prepare a response and submit directly to the Department.

5. The majority of test location descriptions on the Permeability Test Report do not correspond to the Figure from UES. Please provide a figure drawn to scale showing permeability test locations accurately reflecting the test location descriptions.

Response: HAI has requested that UES prepare a response and submit directly to the Department.

6. Please provide more detailed location descriptions for test nos. 37, 39, 42 through 45 and 47 through 53 on the Permeability Test Report.

Response: HAI has requested that UES prepare a response and submit directly to the Department.

7. Please indicate on the IPD and Permeability Test Reports which test nos. correspond to the first, second and third lift.

Response: HAI has requested that UES prepare a response and submit directly to the Department.

8. It appears that an insufficient number of permeability tests were conducted. At 5.57 acres, a minimum of 18 permeability tests should have been conducted. In addition, the figure provided by UES shows that tests were not conducted along the eastern and southern boundary of Cell 2. Please address.

Response: Fifteen permeability tests were conducted in Cell 2. HAI determined this to be an appropriate number of tests based on prior discussions regarding the required tests for Cell 16. HAI and the Department agreed that 15 tests would be adequate for Cell 16, with acreage of 5.75 acres. Therefore, 15 tests for Cell 2, which is slightly smaller with 5.57 acres, should be adequate.

UES selected the locations of the permeability tests based on the field conditions at the time of sample collection for the first lift. These field conditions include temporary storage locations of confining material to be spread and compacted, equipment locations, and areas completed. The test locations for

Ms. Simone Core, P.E. January 5, 2005 Page 3



the second and third lifts were completed near to the first lift test locations. Since in-place density tests were also conducted during construction, the permeability tests were completed for confirmation of the field test results. Based on the consistent quality of the in-place density test and laboratory permeability test results, we are confident the entire cell has an adequate confining layer.

However, during construction of the next disposal cell, HAI will predetermine a more disperse pattern for confining layer lift permeability testing in order to cover a larger area of the cell floor.

9. Please note that future cells must be constructed with side slopes of 6(H):1(V) in accordance with the construction permit.

Response: Angelo's will construct the future cells with appropriate side slopes unless a modification to the construction permit is issued.

10. UES Photograph Location Plan does not show the location of photos 16 and 17 that were on the CD. Please provide a revised Photograph Location Plan.

Response: Photos 16 and 17 were not intended for Cell 2 certification purposes and were not taken within the boundaries of the Photograph Location Plan. Please disregard Photos 16 and 17.

11. The financial assurance funding must be approved by Fred Wick in Tallahassee. Please notify the Department once the funding has been approved.

Response: The updated financial assurance mechanism should be received by Fred Wick on Thursday, January 6, 2005.

We trust this submittal, along with the forthcoming approval of the updated financial assurance mechanism and information from UES, will satisfy the Department's requirements. Please call me if you have any questions.

Very truly yours,

Hartman & Associates, Inc.

Jennifer L. Deal, P.E

Project Manager

JLD/cr/99.0331.013/corresp/cell 2 cert response Attachments

cc: Dominic Iafrate, Angelo's

Jeff Rogers, Angelo's Susan Pelz, P.E., FDEP – Southwest District

Angels's Recycles Materials

41111 Enterprise Rd. Dade City, FL 33525

Cell #2 Construction

Project Manager: Jeff Rogers

Construction Equipment: Cat D5 Dozer, Cat D8 Dozer, Komatsu PC1100 Excavator; New Holland sheepsfoot roller, (4) Terex 35 ton dump trucks, Volvo 35 ton dump truck

Construction Plan: Cell #2 will be excavated to a bottom grade of 82' NGVD on the north end of the cell sloping up to 84' NGVD on the South end of the cell. Once the bottom grade has been surveyed, three feet of clay will then be compacted in the cell in three 1 foot lifts. Each lift will then be tested at the rate of 1 test per lift for density and permeability. The density test pass 95% and the permeability must meet at least 1x10-6 cm per second. The test will be conducted by Universal Engineering. Cell #2 elevation will then be 85' NGVD on the north end sloping up to 87'NGVD on the south end.

Sept 14, 2004 Began placing and compacting the north west corner of cell #2 while working on cell #1. Clay was hauled with 5 dump trucks and spread with D5 and D8 dozer and compacted with sheepsfoot roller and at the end of the day all trucks were loaded and drove over compacted area to ensure desity was achieved. Called Universal to test 2nd lift area in cell #1 and take test on completed area of 1st lift in cell #2.

Sept 15, 2004 Universal engineering performed test on cell #1 2nd lift and cell #2 1st lift. Once test were taken began filling and compacting 3rd lift in cell #1 using 5 dump trucks, D5 and D8 dozer as well as sheepsfoot roller. Completed 3rd lift in cell #1.

Sept 16, 2004 received 2.2 inches of rain will try to resume placing and compacting clay on 20th.

Sept 20, 2004. Rain on the 18 resume re-compaction on 22nd. Universal tested 3rd lift on cell #1

Sept 22, 2004 resumed placing 1st lift on north and west sections of Cell #2 using 5 dump trucks, D5 and D8 dozer, and sheepsfoot roller. Called Universal to schedule tech for 23rd to perform density test as well as permeability test on compacted area in the north and west end of cell. Completed approximately 65 percent of 1st lift in Cell #2 and began placing clay on the second lift in Cell#2 on the area where the 1st lift had been tested

Sept 23, 2004 Universal arrived on site and tested 1st lift. Using 5 dump trucks, D5 and D8 dozer, and sheepsfoot roller. Completed the northern and western 65% of lift #2 and tested and also the northern approximate 65% of the 3rd lift and Universal tested

September 24, 2004 began placing and compacting clay on the first lift on the remaining south and east 35% of cell #2 Stopped by rain will resume construction on 28th.

September 28, 2004 resumed 1st lift on remaining 35% of Cell#2 placing and compacting clay using 5 dump trucks, D5 and D8 dozer, and sheepsfoot roller completed 1st lift and arranged for Universal to do testing all day on the 29th.

Sept 29, 2004 Universal tested remainder of the 1^{st} lift in cell #2. We placed and compacted the remaining 2^{nd} and 3^{rd} lifts in cell #2 using 5 dump trucks, D5 and D8 dozer, and sheepsfoot roller. Universal then preformed density and permeability test on the first and second lifts.

Sept 30th Cell #2 final graded and Foresight called for final top survey.

Note: After final cell construction Angello's compacted additional clay material into the side slopes of the cell for additional clay coverage. Fine grading was then preformed to clear equipment tracks. Foresight surveyed cell #2 after fine grading was completed. Some of these additional activities were still ongoing during the FDEP's Nov.1, 2004 inspection.

Jeff Rogers, Angelo's Project Manager



Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

Mr. Dominic lafrate Angelo's Aggregate Materials 1755 20th Avenue SE Largo, Florida 33771

RE:

Enterprise Recycling and Disposal Facility

Cell #2 Certification

Dear Mr. lafrate:

In response to the letter from Simone Core, P.E. of the Solid Waste Section of FDEP, dated January 4, 2005, we offer the following response to items 4, 5, 6, and 7.

January 5, 2005

- 4. Density reports DR#10 and DR#12 have been revised. The in-place density location plan has also been revised showing accurate locations of tests. Revisions are included with this package.
- 5. The permeability location plan has been revised and a test location summary developed with locations for all permeability tests taken for cell #2. All revisions are included.
- 6. A summary report of test locations is included in this package.
- 7. Revisions to the density test reports and permeability summary have been made and are included.

We hope that this information is helpful in addressing the concerns of the FDEP and apologize for any inconvenience. Please do not hesitate to contact our office with any additional questions or concerns.

Sincerely,

Universal Engineering Sciences

David Barnett

Construction Services Manager

enclosures:

DR#10 r1

DR#12 r1 DR#13

PWSUM cell2

revised density test location plan

revised permeability test location plan

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706



Project No.: 80540-001-02 Report No.: DR #10 Date:

September 14, 2004

Southwest District Tampa

January 6, 2005 Revision:

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

IN-PLACE DENSITY TEST REPORT

Client:

Angelo's Aggregate Materials Attention: Dominic lafate 26400 Sherwood Street

Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Area Tested:

Clay Liner Fill in Cell #1 and #2, Fill

Reference

Datum:

0 = Top of Native

Type of Test - Field:

ASTM D-2937 Drive Cylinder Method

Date Tested:

9/15/04

Laboratory:

ASTM D-698 Standard Proctor

Remarks:

The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABOR RESI		FIE	FIELD TEST RESULTS	
Test No.	· '		Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
47	70' N 150' W From SW Corner of Cell #1	+2	108.6	16.5	110.0	10.1	101.2
48	70' N 215 W From SW Corner of Cell #1	+2	108.6	16.5	109.2	12.1	100.5
49	130' N 300' W From SW Corner of Cell #1	+2	108.6	16.5	108.8	12.6	100.1
50	50' South and 80' East of NW corner of Cell #2	+1	108.6	16.5	112.1	14.1	103.2
51	50' South and 110' West of NE cnr of cell #2	+1	108.6	16.5	109.9	15.1	101.2

Technician:

Vince Simmons

CC:

Client (1)

Reviewed By,

Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

Mark K. Hardy, P.E. Tampa Branch Manager

Professional Engineer No. 57233

Date: 1/6/05

Project No.: Report No.:

80540-001-02 DR #12

September 27, 2004 January 6, 2005

Date: Revision:

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

Construction Materials Testing • Threshold Inspection • Private Provider Inspection

IN-PLACE DENSITY TEST REPORT

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Area Tested:

Clay Liner, Backfill

Reference

Datum:

0 = Top of Native

Type of Test - Field:

ASTM D-2937 Drive Cylinder Method

Date Tested:

9/23/04

ASTM D-698 Standard Proctor

Remarks:

The tests below meet the minimum 98 percent relative soil compaction requirement of Laboratory Proctor maximum

dry density.

Laboratory:

TEST LOCATION				ATORY JLTS	FIELD TEST RESULTS		ESULTS
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
57	290' South and 200' East of NW cnr of cell #2	+1	108.6	16.5	107.6	12.1	99.1
58	70' South and 100' East of NW cnr of cell #2	+2	108.6	16.5	111.8	11.6	102.9
59	70' South and 100' West of NE cnr of cell #2	+2	108.6	16.5	110.8	12.2	102.0
60	250' West and 280' South of NE cnr of cell #2	+2	108.6	16.5	110.1	11.6	101.4
61	105' East and 60' South of NW cnr of cell #2	+3	108.6	16.5	111.9	11.0	103.1
62	100' South and 100' West of NE cnr of cell #2	+3	108.6	16.5	108.7	11.4	100.1
63	270' South and 250' West of NE cnr of cell #2	+3	108.6	16.5	112.4	14.1	103.8

Technician:

Vince Simmons

cc:

Client (1)

Reviewed By,

Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

Mark K. Hardy, P.E. Tampa Branch Manager

Professional Engineer No. 57233

Date: 1/6/05

Project No.: Report No.:

80540-001-02 DR #13

Date:

October 4, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

IN-PLACE DENSITY TEST REPORT

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Area Tested:

Clay Liner in Landfill Cell #2, Backfill

Reference

Datum:

0 = Top of Native

Type of Test - Field:

ASTM D-2937 Drive Cylinder Method

Date Tested:

9/29/04

Laboratory:

ASTM D-698 Standard Proctor

Remarks:

The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum

dry density.

TEST LOCATION			LABOR RESI		FIELD TEST RESULTS		ESULTS
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
64	100' NE from SW Corner of Cell #2	+2	108.6	16.5	107.8	15.7	99.3
65	150' NW from SE Corner of Cell #2	+2	108.6	16.5	109.5	16.3	100.8
66	120' NE from SW Corner of Cell #2	+1	108.6	16.5	107.5	15.6	99.0
67	140' NW from SE Corner of Cell #2	+1	108.6	16.5	107.9	16.8	99.4
68	150' NW from SE Corner of Cell #2	+3	108.6	16.5	108.0	15.1	99.4
69	160' NE from SW Corner of Cell #2	+3	108.6	16.5	107.6	16.3	99.1

Technician:

Vince Simmons

CC:

Client (1)

Reviewed By,

Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

Mark K. Hardy, P.E. Tampa Branch Manager

Professional Engineer No. 57233



Project No: Report No.: Date:

80540-001-02 **PWSUM Cell2** January 6, 2005

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

SUMMARY OF TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, Cell #2

Tested By:

Greg Kemp

Ordered By:

David Barnett

Test	Location	Elev.	Percent	Permeability		
#			passing No. 200 Sieve	K (cm/s)	K ft/day	
36	50' South and 80' East of NW cnr of Cell #2	+1	60.2	5.6 E-09	1.59 E-05	
37	50' South and 110' West of NE cnr of cell #2	+1	54.3	1.8 E-08	5.0 E-05	
39	290' South and 200' East of NW cnr of cell #2	+1	47.7	2.0 E-08	5.6 E-05	
42	70' South and 100' West of NW cnr of cell #2	+2	45.5	2.7 E-08	7.5 E-05	
43	70' South and 100' West of NE cnr of cell #2	+2	45.7	6.6 E-08	1.9 E-04	
44	250' West and 280' South of NE cnr of cell #2	+2	48.1	6.0 E-08	1.7 E-04	
45	105' East and 60' South of NW cnr of cell #2	+3	48.9	1.3 E-07	3.8 E-04	
46	100' South and 100' West of NE cnr of cell #2	+3	52.4	6.1 E-08	1.73 E-04	
47	270' South and 250' West of NE cnr of cell #2	+3	61.1	1.2 E-08	3.4 E-05	
48	100' NE of SW corner of cell #2	+2	48.9	2.5 E-08	7.0 E-05	
49	150' NW of SE corner of cell #2	+2	54.4	9.5 E-08	2.7 E-04	
50	120' NE of SW corner of cell #2	+1	60.4	7.1 E-09	2.0 E-05	
51	140' NW of SE corner of cell #2	+1	46.2	3.3 E-07	9.5 E-04	
52	150' NW of SE corner of cell #2	+3	53.9	1.98 E-08	5.6 E-05	
53	160' NE of SW corner of cell #2	+3	49.7	1.2 E-08	3.3 E-05	

Reviewed By,

Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

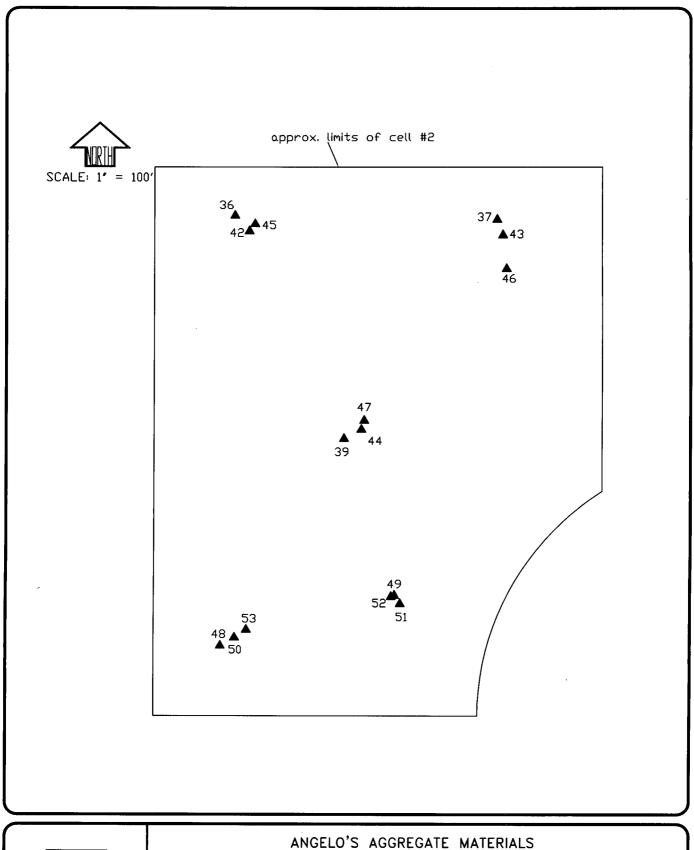
Mark K. Hardy, P.E.

Tampa Branch Manager

Professional Engineer No. 57233 Date: /

Technician:

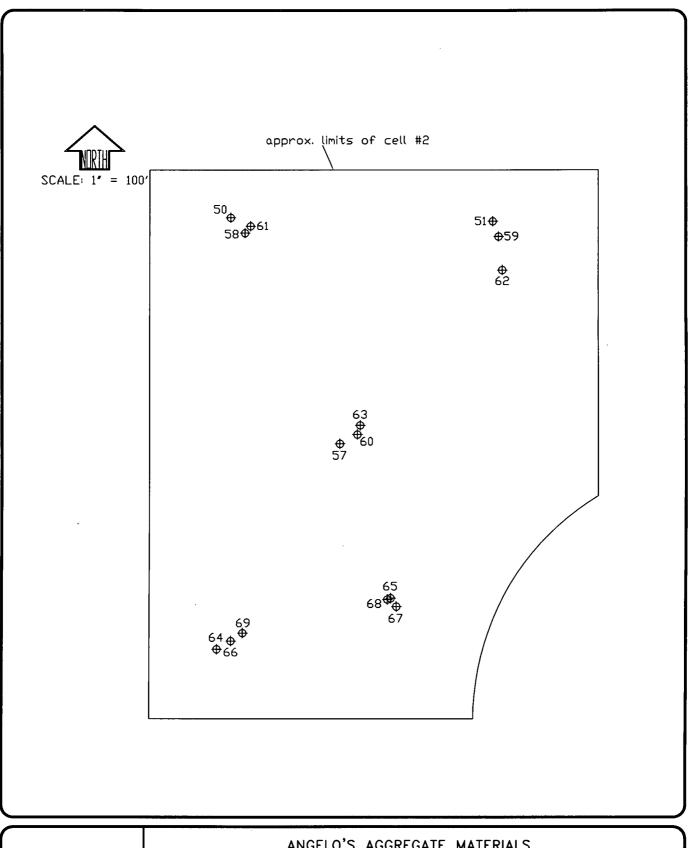
N/A





ANGELO'S AGGREGATE MATERIALS PERMIABILITY TEST LOCATION PLAN CLAY LINED CELL #2

١	DRAWN BY: D.B.	DATE: JAN 6, 2005	CHECKED BY: D.B.	DATE: JAN 6, 2005
	SCALE: 1:100	PROJECT NO: 80540-001	-02 REPORT NO:	PAGE NO:





ANGELO'S AGGREGATE MATERIALS DENSITY TEST LOCATION PLAN CLAY LINED CELL #2

DRAWN BY: D.B.	DATE: JAN 6, 2005	CHECKED BY: D.B.	DATE: JAN 6, 2005
SCALE: 1:100	PROJECT NO: 80540-001	-02 REPORT NO:	PAGE NO:

TETRA TECH, INC.

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HARTMAN & ASSOCIATES, INC.

engineers, hydrogeologists, surveyors & management consultants

December 15, 2004

Les H. Porterfield, P.E. Andrew T. Woodcock, P.E., M.B.A. John P. Toomey, P.E. Jennifer L. Woodall, P.E. Rafael A. Terrero, P.E., DEE Jill M. Hudkins, P.E. Valerie C. Davis, P.G. Charles M. Shultz, P.E.

Sean M. Parks, AICP, QEP W. Bruce Lafrenz, P.G. Alexis K. Stewart, P.E. Christopher W. Hardin, P.E.

ASSOCIATES:

HAI #99/03 1019 Alexis K. Stewart, P.E. Christopher W. Hardin, P.E. James R. Warner, P.E.

Via UPS Overnight

Ms. Susan Pelz, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Subject:

Cell 2 Certification

Enterprise Recycling & Disposal Facility

Angelo's Aggregate Materials, Ltd.

FDEP Permit Nos. 177982-001-SC, 177982-002-SO

Pasco County, Florida

Dear Ms. Pelz:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting this certification for Cell 2 at the above referenced facility. Confining layer construction activities were completed on September 29, 2004. The certification form and referenced summary of deviations are included in Appendix A.

Specific Condition 9.c. of the construction permit, in part, states "The maximum hydraulic conductivity below or as part of each cell floor shall be less than 1×10^{-6} cm/sec in a continuous layer of at least 36 inches in thickness, unless otherwise approved in writing by the Department."

Confining Layer Construction

Construction of the confining layer in Cell 2 was performed in concurrence with construction activities for the remainder of Cell 1. Mr. Jeff Rogers, the facility manager and Angelo's Project Manager for the landfill construction, was on-site to oversee all construction and verify that the work was performed to HAI's criteria. This included verification of the use of appropriate stockpiled confining material and compaction equipment, coordination with Foresight Surveyors, Inc. (Foresight) for documentation of the excavation and fill elevations, and coordination with Universal Engineering Sciences (UES) for on-site soil testing and permeability test sample collection. The contractor used a track hoe to excavate the cell. Foresight verified the

Ms. Susan Pelz, P.E. December 15, 2004 Page 2

excavation grades to ensure that the appropriate base elevation was achieved. Surveys of the constructed areas were also completed to ensure the appropriate cell floor grades and confining material thickness were achieved. Copies of the excavation and fill as-built surveys, including the cell boundaries, are attached for your review in Appendix B.

Stockpiled clay material used for construction of Cell 1 and Cell 16 was also used for the construction of Cell 2. To be acceptable, HAI required the material compaction to achieve 95% of the maximum density, as evaluated by the laboratory proctor test. Though the test results were provided in the certification package for Cell 16 and the remainder of Cell 1, an additional photocopy is provided in this submittal for the Department's reference. The result of the Wash 200 test on the material was 35.1%. The optimum moisture content for the material to achieve acceptable compaction was 16.5%. The results of the proctor test, provided by UES, are attached for your review in Appendix C.

The designated confining material was placed in three lifts, at least 12-inches in thickness, and compacted by multiple passes with a D-5 and D-8 Dozer. The dozers compacted the material in the bottom of the excavation and into the cell side slopes. After each lift was compacted with the dozers, a sheeps-foot roller was used to roll and further compact the material. A representative of UES visited the site on three occasions to conduct in-place density testing on the confining layer lifts and to obtain soil samples for confirmation laboratory permeability testing. Jeff Rogers documented the confining layer construction activities and dates of testing. A copy of Mr. Rogers's construction summary is provided in Appendix D.

Field CQA Testing

In-place density testing of the confining material lifts was performed by UES using a Speedy Moisture Content device in accordance with ASTM D2937-00e1, Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method, to test each compacted lift to ensure the proper density and moisture content were achieved. Fifteen tests were conducted in Cell 2. Field test results were reviewed by HAI and demonstrate that appropriate compaction was achieved during construction. The density test results for Cell 2 were included in the certification package for Cell 16 and the remainder of Cell 1, however, an additional photocopy of the test results, along with a Density Test Location Plan, are included in Appendix E for your review. Please note, according to UES, density test locations for Cell 2 shown on the Density Test Location Plan that was included in the certification package for Cell 16 and the remainder of Cell 1 were not completely accurate, and may differ from those in the attached plan.

Shelby tube samples were collected for laboratory confirmation testing for permeability at a frequency of one sample, per acre, per lift, as previously requested by the Department. Permeability samples were collected in accordance with ASTM D1587, Standard Practice for

Ms. Susan Pelz, P.E. December 15, 2004 Page 3

Thin-Walled Tube Geotechnical Sampling of Soils. Fifteen permeability samples were collected from Cell 2, and correspond to the locations and depths of the in-place density tests. Please see the locations plans in Appendix E for reference. Permeability testing was completed by UES laboratory in Orlando, in accordance with ASTM D5084-00e1, Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter. Permeability test results, along with a Permeability Test Location Plan, are included in Appendix E. The permeability sample test dates will not necessarily correspond with the sample collection dates. This is due to sample preparation and limited laboratory equipment to run all of the collected samples concurrently. Please note, according to UES, permeability test locations for Cell 2 shown on the Permeability Test Location Plan that was included in the certification package for Cell 16 and the remainder of Cell 1 were not completely accurate, and may differ from those in the attached plan.

Photographs of some construction activities, provided by UES, are included on a CD in Appendix E along with a Photograph Location Plan.

Please note, the UES Weekly Report on Site Inspections in Appendix E contains an error. The third date of testing was September 29, 2004, not September 25, 2004. UES will forward a corrected page to the Department. In addition, the test result for permeability test #50 in Appendix E has an error. The correct test result for permeability in cm/s should be 7.1 E-9. UES will forward a corrected page to the Department.

Field Inspection

A representative of HAI performed a field inspection on November 12, 2004 to observe the completed construction. At the time of the inspection, the cell floor appeared to be constructed properly and in accordance with the requirements previously discussed with the Department, and included in the construction permit minor modification request. Photographs from this site visit are included in Appendix F. The photographs are labeled, and the general locations and directions of the photographs have been hand-entered on a copy of the UES Photograph Location Plan. This is also provided in Appendix E.

It is our understanding that when conducting the certification inspection for Cell 16 and the remainder of Cell 1, the Department also inspected Cell 2, since the confining layer construction was completed at that time.

Ms. Susan Pelz, P.E. December 15, 2004 Page 4

We trust this certification submittal will satisfy the Department. Please call me if you have any questions or require additional information.

Very truly yours,

Hartman & Associates, Inc.

Jennifer L. Deal, P.E.

Project Manager

N/hydro/jld/larkin.cell 2 cert.doc Attachments

cc: Dominic Iafrate, Angelo's
Jeff Rogers, Angelo's
John Morris, P.G., FDEP
Simone Core, P.E., FDEP

APPENDIX A



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

DEP Form # 62-701.	900(2) on of Construction Completion
Form Title Certification	on of Construction Completion
Effective Date May I	
DEP Application No.	
District Contract Con	(Filled by DEP)

Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction Permit No: 177982-001-	SCCount	ty: Pasco	
Name of Project: Enterprise Recycling & Dis	sposal Facility		
Name of Owner: Angelo's Aggregate Mater	ials, Ltd.		
Name of Engineer: Hartman & Associates,	Inc.		_
Type of Project: Certification for Cell 2			
see attached surveys from Foresight Surve	yors for areas.		,
Cost: Estimate \$ 100,000	Actua	ıl \$ 150,000	
Site Design: Quantity: 1500 cy/day	ton/day Site Acreage: 5.	.57	_Acres
Deviations from Plans and Application Ap	proved by DEP: Please s	see the attached summary	<u></u>
Address and Telephone No. of Site: 4111	Enterprise Road, Dade C	ity, FL 33525	
352-567-7676			
		<u> </u>	
Name(s) of Site Supervisor: <u>Jeff Rogers</u>			
Date Site inspection is requested: Facility n	nanager stated FDEP inspe	ected Cell 2 at previous sit	e visit
This is to certify that, with the exception project has been completed in substantial a	n of any deviation noted accordance with the plans	d above, the construction authorized by Construct	n of the
Permit No. 177982-001-SC	:Dated: October 5	5, 2001	
Date: 12/15/04			. 1188111111111111111111111111111111111
	Signature of	Professional Engineer	"ALL X
	Page 1 of 1	201 - Orl	E. Pine St., Suite 10
		≟ o _z Eq₂	incering Bysiness #5

Northwest District 160 Governmental Center Pensacola, FL 32501-5794 850-595-8360

Northeast District 7825 Baymeadows Way, Ste. B200 Jacksonville, FL32256-7590 904-448-4300

Central District 3319 Maguire Blvd., Ste. 232 Orlando, FL 32803-3767 407-894-7555

Southwest District 3804 Coconut Palm Dr. Tampa, FL 33619 813-744-6100

South District 2295 Victoria Ave., Ste. 364 Fort Myers, FL 33901-3881 941-332-6975 Southeast District 400 North Congress Ave. West Palm Beach, FL 33401 561-681-6600

SUMMARY OF DEVIATIONS FROM FDEP APPROVED PLANS ENTERPRISE RECYCLING & DISPOSAL FACILITY DADE CITY, FLORIDA

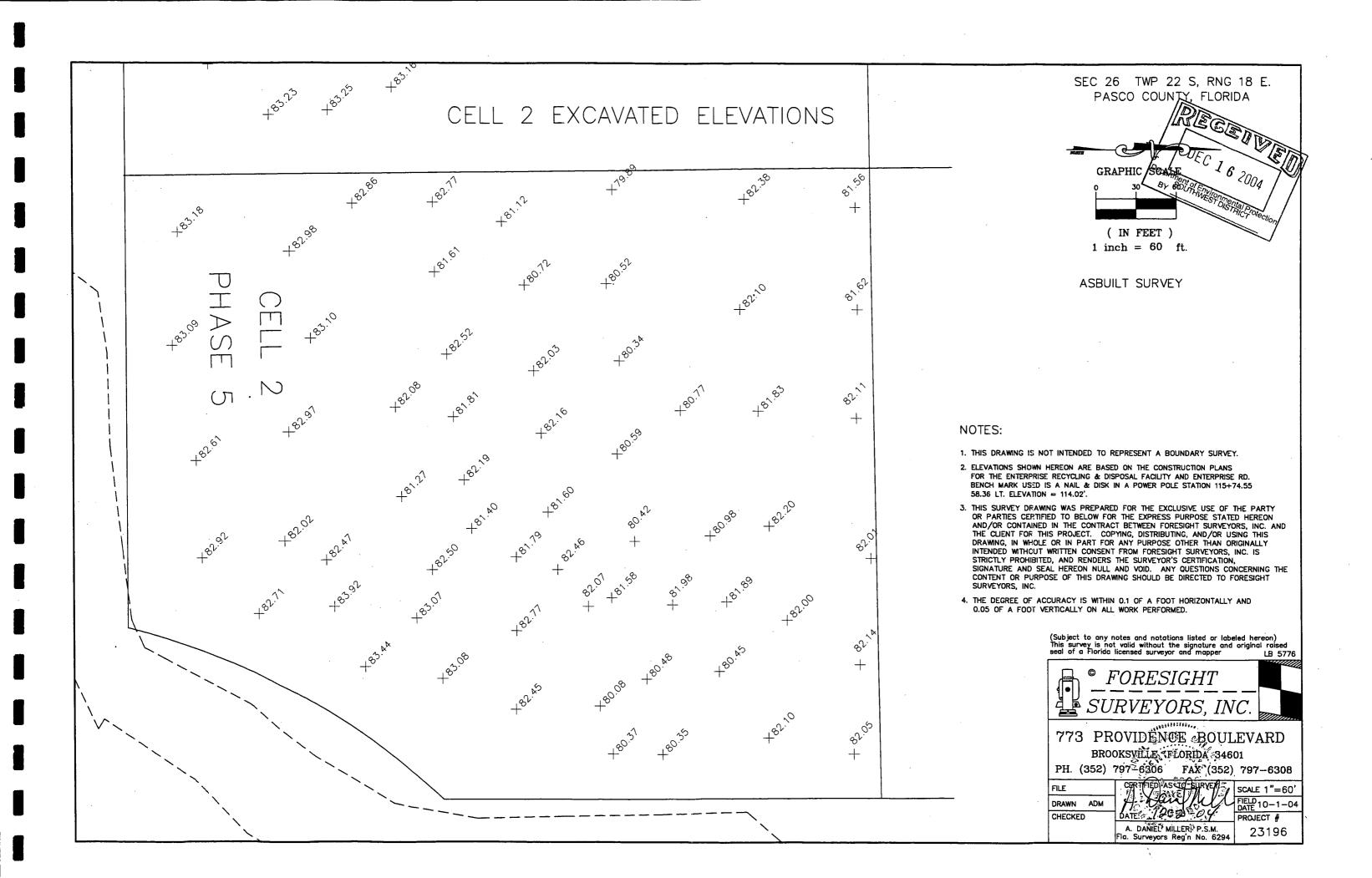
As-built survey data to confirm the grades in Cell 2 is provided in Appendix B. The elevation in Cell 2 is slightly higher than the permitted grades, however, this provides additional protection by increasing the distance between the waste and the groundwater table. The elevations are consistent with the constructed portions of Cell 1 and the newly constructed area generally slopes towards the northwest. The cell grades are in substantial compliance with the requirements and intent of the approved plans, as required by the specific conditions of the facility construction permit, and the modified FDEP stormwater permit.

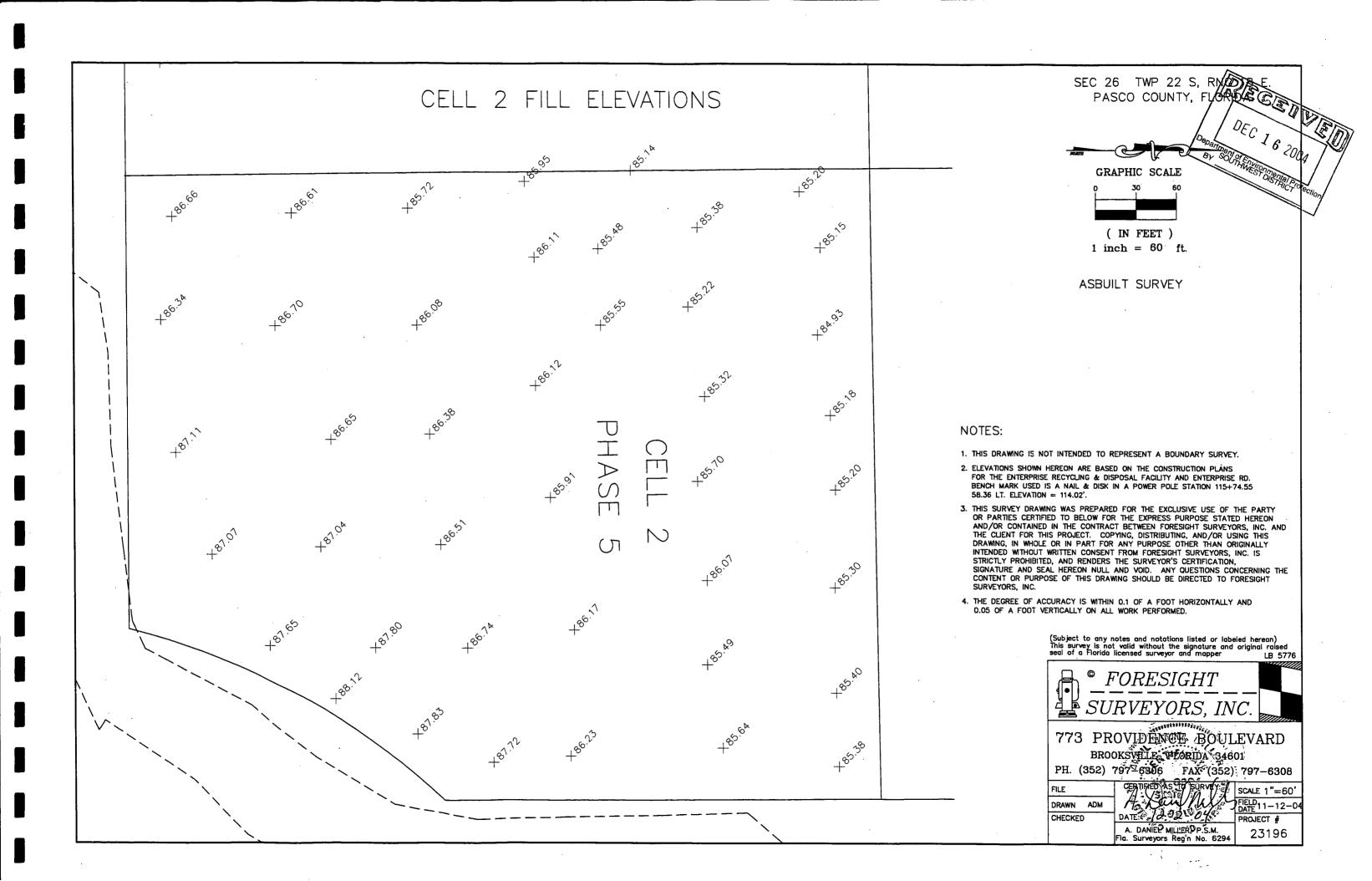
Deviations to the original approved plans for Cell 2 are indicated in the as-built survey in Appendix B and the photographs in Appendix F. The berm and open channel previously located in Cell 1 were eliminated during the additional construction. The berm and channel should be reconstructed in order to further minimize stormwater contact with the waste in Cells 1 and 2, and this should be done as excavation is initiated in the adjacent cells.

The side slopes of Cell 2 are constructed steeper than described in the approved plans, as shown in the referenced photographs. These slopes were not surveyed, but appear to be substantially vertical. All side slopes were to be constructed to 6H:1V until immediately prior to waste placement against the slopes, or until the slope was eliminated due to excavation of an adjacent cell. As constructed, the slopes will have a higher potential for erosion, so Angelo's must implement the erosion controls in the approved plans on an as needed basis to prevent erosion of the side slope material into Cell 2.

The maintenance area is intended for future use and therefore is not completed at this time.

APPENDIX B





APPENDIX C

UNIVERSAL **ENGINEERING SCIENCES**

PROCTOR TEST RESULTS

CLIENT

Angelo's Aggregate Materials Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

PROJECT NAME/LOCATION

Dade City Landfill, 5 acre Clay Liner

PROJECT NO.: 80540-001-02

Sample Location: Stockpile

125

120

115

110

105

DRY UNIT WEIGHT - POUNDS PER CUBIC FOOT

Sample Description: Brown Fine Sand with Clay

DESC	RIPTION OF F	ROCTOR TEST	S
Test Method (1,2 or 3)	(1) Standard ASTM D698 (AASHTO T-99)	(2) Modified ASTM D1557 (AASHTO T-180 4" mold)	(3) Modified ASTM D1557 (AASHTO T-180 6" mold)
Vol. of Cylinder(cu.ft.)	1/30	1/30	1/13.333
Hammer Weight (lbs.)	5-1/2	10	10
Hammer Drop (in.)	12	18	18
Hammer Blows Per Layer	25	25	56
Number of Layers	3	5	5
Compaction Energy (ftkips per cu. ft.)	12.375	56.259	56.259
		SUMM	ARY OF

CURVES OF 100% SATURATION FOR SPECIFIC GRAVITY

EQUAL TO:

TEST RESULTS					
Lab No.	421				
Date Tested	6/30/04				
Test Method	ASTM D-1557				
Maximum Dry Density (pcf)	108.6				
Optimum Moisture Content (%)	16.5				
Wash 200 (%)	35.1				

					\ /	2.65
100 -				/	M//	2.70
	Section 1					2.75
95 -	3			2		
	e en la companya de l					
00				eria yang berakan Berakan kengan	a representation of	
90 -			-			
85 -	5 1	0 1:	5 2	0 2	5 3	0 3
,	'	MOISTURE C				

UNIVERSAL ENGINEERING SCIENCES, INC. Certificate of Authorization No.: 00000549

cc: Client (1)

Mark K. Hardy, P.E. Professional Engineer No. 57233

10/12/04 Date:

Date: July 12, 2004

Re-issued Date: October 12, 2004

Report No.: PR #2

APPENDIX D

Angels's Recycles Materials

41111 Enterprise Rd. Dade City, FL 33525

Cell #2 Construction

Project Manager: Jeff Rogers

Construction Equipment: Cat D5 Dozer, Cat D8 Dozer, Komatsu PC1100 Excavator; New Holland sheepsfoot roller, (4) Terex 35 ton dump trucks, Volvo 35 ton dump truck

Construction Plan: Cell #2 will be excavated to a bottom grade of 82' NGVD on the north end of the cell sloping up to 84' NGVD on the South end of the cell. Once the bottom grade has been surveyed, three feet of clay will then be compacted in the cell in three 1 foot lifts. Each lift will then be tested at the rate of 1 test per lift for density and permeability. The density test pass 95% and the permeability must meet at least 1x10-6 cm per second .The test will be conducted by Universal Engineering. Cell #2 elevation will then be 85' NGVD on the north end sloping up to 87'NGVD on the north end.

Sept 14, 2004 Began placing and compacting the north west corner of cell #2 while working on cell #1. Clay was hauled with 5 dump trucks and spread with D5 and D8 dozer and compacted with sheepsfoot roller and at the end of the day all trucks were loaded and drove over compacted area to ensure desity was achieved. Called Universal to test 2nd lift area in cell #1 and take test on completed area of 1st lift in cell #2.

Sept 15, 2004 Universal engineering performed test on cell #1 2nd lift and cell #2 1st lift. Once test were taken began filling and compacting 3rd lift in cell #1 using 5 dump trucks, D5 and D8 dozer as well as sheepsfoot roller. Completed 3rd lift in cell #1.

Sept 16, 2004 received 2.2 inches of rain will try to resume placing and compacting clay on 20^{th} .

Sept 20, 2004. Rain on the 18 resume re-compaction on 22nd. Universal tested 3rd lift on cell #1

Sept 22, 2004 resumed placing 1st lift on north and west sections of Cell #2 using 5 dump trucks, D5 and D8 dozer, and sheepsfoot roller. Called Universal to schedule tech for 23rd to perform density test as well as permeability test on compacted area in the north and west end of cell. Completed approximately 65 percent of 1st lift in Cell #2 and began placing clay on the second lift in Cell#2 on the area where the 1st lift had been tested

Sept 23, 2004 Universal arrived on site and tested 1st lift. Using 5 dump trucks, D5 and D8 dozer, and sheepsfoot roller. Completed the northern and western 65% of lift #2 and tested and also the northern approximate 65% of the 3rd lift and Universal tested

September 24, 2004 began placing and compacting clay on the first lift on the remaining south and east 35% of cell #2 Stopped by rain will resume construction on 28th.

September 28, 2004 resumed 1st lift on remaining 35% of Cell#2 placing and compacting clay using 5 dump trucks, D5 and D8 dozer, and sheepsfoot roller.completed 1st lift and arranged for Universal to do testing all day on the 29th.

Sept 29, 2004 Universal tested remainder of the 1^{st} lift in cell #2. We placed and compacted the remaining 2^{nd} and 3^{rd} lifts in cell #2 using 5 dump trucks, D5 and D8 dozer, and sheepsfoot roller.

Sept 30th Cell #2 final graded and Foresight called for final top survey.

Jeff Rogers, Angelo's Project Manager



Project No: Report No.: 80540-001-02 PW #11

Date:

December 7, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

AND PERCENT PASSING NO. 200 SIEVE 2000 Naterials

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

Test	Date	Location	Percent	Permeability		
#	Tested		passing No. 200 Sieve	K (cm/s)	K ft/day	
50	11/23/04	Cell 2	60.4	7.1 E-09	2.0 E-05	

Technician: N/A Reviewed By Constitution of the Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

Mark K. Hardy, P.E. Tampa Branch Manager Professional Engineer No. 57233



Project No.:

80540-001-02

Report No.:

SI #8

December 13, 2004

Date: Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, Fl 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

WEEKLY REPORT ON SITE INSPECTIONS

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Scope of

Field Work:

Compaction & Permeability Clay Liner

Inspected By: Vince Simmons

September 15, 2004

Arrived on site, performed eight in place density's on cell 1 lifts 2 and 3, two in place density's on cell 2. Sampled for permeability at eight locations for cell 1 and 2 for cell 2.

September 23, 2004

Arrive on site, performed seven in place density's on cell 2 liner. Seven permeability samples taken at in place density locations.

September 29, 2004

Arrived on site, performed six in place density's on cell 2 liner. Six permeability samples taken and sent to Orlando for testing.

Client (1) CC:

Tampa Branch Mana Professional Engin

Universal Engineering Sciences, Inc.

Certificate of Authorization No

Reviewed By,



Project No.: Report No.: 80540-001-02 SI #2

Date:

Revised:

July 12, 2004 12/07/04

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

WEEKLY REPORT ON SITE INSPECTIONS

Client:

Angelo's Aggregate Materials Attention: Dominic lafrate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Scope of

Field Work:

Monitor Placement and Compaction of Clay Liner; to Include IPD's and Permeability Sample Pickup

Inspected By: Vince Simmons

July 6, 2004

Monitored track hoe loading end jumps from section #3 of cell and hauling to stockpile area at east end of cell areas outside of construction zone. At end of excavation in section #3 D-7 dozer compacted clay liner at 12" lifts and grading while sheep's foot roller compacted graded clay liner. Three density test performed in section #2 at locations on density test report form. Also 3 permeability samples were taken at one sample per lift at location noted on density report form and sent to Orlando lab for testing. Surveyors not on site today. Area cleared in section #3 measured at 315' long and 73' wide. No test were ready for section #3 today.

July 7, 2004

Monitored track hoe loading two end dumps from section #4 cell and hauling excavates fill to stockpile area at east end of cell areas outside of construction zone. Clay liner fill hauled back in section #4 and graded with day dozer and compacted with sheep's foot roller at 12" lifts. Dimension of section #4 is 315' long and 68' wide. Goodwin Construction stop working at 12:30 p.m. due to rain showers and lightening which lasted about 45 minutes. 3 IPD's and perm samples taken for section #3. At present time about 50% of first lift completed and excavated...

July 8, 2004

Arrived on site Goodwin Brother's Construction working on excavating materials out of section #5 and loading into end dumps. Sheep's front roller and dozer are working in section #4 on first lift. End dumps unloading excavated fill at stockpile areas at east end of construction zone. Took two IPD's and two permeability tests in section #4. Excavation at 70%.

July 9, 2004

Arrived on site and monitored excavation of material in section #6. Materials loaded in two end dumps and transported off site to stockpile area at east end of construction zone. Goodwin Brother's will continue excavating in area before backfilling leff with Angelo's didn't require me to be on site for excavation remaining area in section #6. Good win Brothers Construction will begin backfilling on 7/12/04. Job excavation at 95%. Left site at 12:00 p.m.

Client (1) CC:

Reviewed Bv. Universal Engineering Sciences, Inc. Certificate of Authorization No. 20000549

Mark K. Hardy, P. F. Tampa Branchi Managèr

Professional Engineer No. 57

Date: 12/21/04.....



Project No.:

Date:

80540-001-02

Report No.:

SI #8

December 13, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

WEEKLY REPORT ON SITE INSPECTIONS

Client:

Angelo's Aggregate Materials Attention: Dominic lafate 26400 Sherwood Street

Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Scope of

Field Work:

Compaction & Permeability Clay Liner

Inspected By: Vince Simmons

September 15, 2004

Arrived on site, performed eight in place density's on cell 1 lifts 2 and 3, two in place density's on cell 2. Sampled for permeability at eight locations for cell 1 and 2 for cell 2.

September 23, 2004

Arrive on site, performed seven in place density's on cell 2 liner. Seven permeability samples taken at in place density locations.

September 25, 2004

Arrived on site, pérformed six in place density's on cell 2 liner. Six permeability samples taken and sent to Orlando for testing.

Reviewed By:

Universal Enginediting Sciences, Inc. of Authorization No. 00000549

CC:

Client (1)



Project No.: Report No.:

80540-001-02 DR #10

Date:

September 14, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

3802 Palm River Road • Tampa, Fl 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

IN-PLACE DENSITY TEST REPORT

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street

Warren, MI 48091

ينوزوز:

Dade City Landfill, 5 acre Clay Liner

a Tested:

Clay Liner Fill in Cell #1 and #2, Fill

erence

um:

0 = Top of Native

ASTM D-2937 Drive Cylinder Method

Date Tested:

9/15/04

Euroe of Test - Field:

ASTM D-698 Standard Proctor Laboratory:

Remarks:

The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum

dry density.

	TEST/LOCATION	LABORATORY RESULTS			FIELD TEST RESULTS		
Test Ao.	Description. of Test Location	Depth (ft:)	. Maximum Density (pcf)	Moisture	The state of the s	Field Moisture (%)	Soil Compaction (%)
47	70' N 150' W From SW Corner of Cell #1	+2	108.6	16.5	110.0	10.1	101.2
1 8	70' N 215 W From SW Corner of Cell #1	+2	108.6	16.5	109.2	12.1	100.5
49	130' N 300' W From SW Corner of Cell #1	+2	108.6	16.5	108.8	12.6	100.1
-5 0	50' S 80' E From SW Corner of Cell #2	+1	108.6	16.5	112.1	14.1	103.2
51	50' S 110' E From SW Corner of Cell #2	+1	108.6	16.5	109.9	15.1	101.2

Technician:

Vince Simmons

Client (1)

Reviewed By,

Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

Mark K. Hardy, P.E.

Tampa Branch Manager

Professional Engineer No. 57233

Date: 9/27/0



ENGINEERING SCIENCES

Project No.: Report No.:

80540-001-02

Date:

DR #12 September 27, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, Fl 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

IN-PLACE DENSITY TEST REPORT

Cilent:

Angelo's Aggregate Materials Attention: Dominic lafate

26400 Sherwood Street

Warren, MI 48091

Project:

Lade City Landfill, 5 acre Clay Liner

Area Tested:

Clay Liner, Backfill

Reference Datum:

0 = Top of Native

Type of Test - Field:

ASTM D-2937 Drive Cylinder Method

Date Tested:

9/23/04

Laboratory:

ASTM D-698 Standard Proctor

Remarks:

The tests below meet the minimum 98 percent relative soil compaction requirement of Laboratory Proctor maximum

					DEGINERAL SERVICES		HELD TESTERSULTS		
	No.	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Description 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			Gatimum Monsture (Va)			
	57		iom Northwest Corner of Cell #2	+1	108.6	16.5	107.6	12.1	99.1
	58	•	from Northwest Corner of Cell #2	+2	108.6	16.5	111.8	11.6	102.9
F	59		from Northeast Corner of Cell #2	+2	108.6	16.5	110.8	12.2	102.0
	60		from Northeast Corner of Cell #2 🏏	+2	108.6	16.5	110.1	11.6	101.4
	61		rom Northwest Comer of Cell #2 🗸	+3	108.6	16,5	111.9	11.0	103.1
	62		from Northeast Corner of Cell #2	+3	108.6	16.5	108.7	11.4	100.1
	63	250' West	form Northeast Comer of Cell #2	+3	108.6	16.5	112.4	14.1	103.8

Technician:

Virice Simmons

Client (1)

Reviewed By,

Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

Mark K. Hardy, P.E.

Tampa Branch Manager

Professional Engineer No. 57233 Date: 0/14/04



ERING SCIENCES

Project No.:

80540-001-02

Report No.: Date:

DR #13

October 4, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, Fl 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

IN-PLACE DENSITY TEST REPORT

Client:

Angelo's Aggregate Materials Attention: Dominic lafate 26400 Sherwood Street V/arren, MI 48091

Project:

Cade City Landfill, 5 acre Clay Liner

Area Tested:

Clay Liner in Landfill Cell #2, Backfill

Reference

atum:

0 = Top of Native

ype of Test - Field:

ASTM D-2937 Drive Cylinder Method

Date Tested:

9/29/04

Laboratory: ASTM D-698 Standard Proctor

Remarks:

The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum

dry density.

	EABOI	Alforez Ultis		ELDHESER	SUL IS
这些情况以此为意	Maximum Density	Optimite Moisture	Density	Moistires	
+2	108.6	16.5	107.8		99,3
+2	108.6	16.5	109.5		100.8
+1	108,6	16.5			99.0
+1	108.6	16.5			99.4
+3					
+3	108.6	16.5	107.6	16.3	<u>99.4</u> 99.1
	+2 +2 +1 +1 +3	### RES Depth Maximum	RESULTS	RESULTS Depth Maximum Optimum Disposity Density Moisture Density Density Period Period	Deptin Maximum

Technician:

Vir ce Simmons

Client (1)

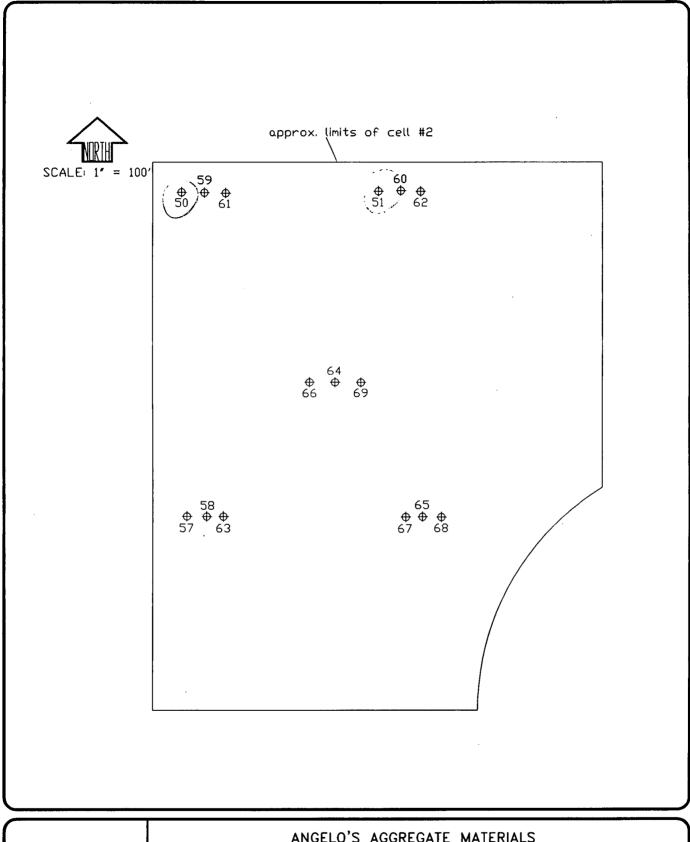
Reviewed By.

Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

Mark K. Hardy, P.E.

Tampa Branch Manager

Professional Engineer No. 57233 Date: 10/12/04





ANGELO'S AGGREGATE MATERIALS DENSITY TEST LOCATION PLAN CLAY LINED CELL #2

DRAWN BY: J.C.	DATE: NOV	. 24, 2004	CHECK	ED BY:	D.B.	DATE:	NOV. 24, 2004
SCALE: 1 : 100	PROJECT NO:	80540-00		REPORT	NO:	PAGE N	0:



PW #4

Date:

80540-001-02

Construction Materials Testing • Threshold Inspection • Private Provider Inspection 9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

Test	Date	_ =		Permeability	
#	Tested		passing No. 200 Sieve	K (cm/s)	K ft/day
32	7/6/04	Section #5: 215' S -120' E from NW Cnr of Cell	45.5	4.3 E-07	1.2 E-03
33	9/15/04	70' N 150' W From SW Corner of Cell #1	45.6	4.3 E-07	1.2 E-03
34	9/15/04	70' N 215 W From SW Corner of Cell #1	44.6	1.52 E-07	4.31 E-04
35	9/15/04	130' N 300' W From SW Corner of Cell #1	50.6	4.1 E-08	1.2 E-04
36	9/15/04	50' S 80' E From SW Corner of Cell #2	60.2	5.60 E-09	1.59 E-05

Technician:

Vince Simmons

Reviewed By; Universal Engineering Sciences, Inc. Certificate of Authorization No. 00000549

Tampa Brangty Manager

Professional E Date: 3/2/1///

All Marie



80540-001-02

Date:

PW #5

October 6, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

Test	Date	Location	Percent	Permeability	
#	Tested		passing No. 200 Sieve	K (cm/s)	K ft/day
37	9/15/04	Cell #2	54.3	1.8 E-08	5.0E-05
38	9/15/04	Cell #1	60.2	5.60 E-09	1.59 E-05
39	9/15/04	Cell #2	47.7	2.0 E-08	5.6 E-05
40	9/15/04	Cell #1	55.4	1.4 E-08	4.0 E-05
41	9/15/04	Cell #1	50.5	7.2 E-08	2.1 E-04
42	9/23/04	Cell #2	45.5	2.7 E-08	7.5 E-05
43	9/23/04	Cell #2	45.7	6.6 E-08	1.9 E-04

Technician:

Vince Simmons

Reviewes By W. A. Harris Sciences, Inc. Certificate of Authorization Not 00000549

Mark K. Hardy, P. E.

Tampa Brangh Manager Professional Englineen No



80540-001-02

Report No.: P

PW #6

October 13, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences
Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

Test Date	Location	Percent	Pern	neability	
#	Tested		passing No. 200 Sieve	K (cm/s)	K ft/day
44	9/29/04	Cell #2	48.1	6.0 E-08	1.7 E-04
45	9/29/04	Cell #2	48.9	1.3 E-07	3.8 E-04

Technician:

Vince Simmons

Reviewed By Markering Colences, Inc. Certificate of Authorization No. 00000549

Mark Mardy

Tampá Branch Manager

Professional Engineer No. 57233

Date:



Date:

80540-001-02 PW #7

t No.: PW

October 22, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences
Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

Test		Location	Percent passing No. 200 Sieve	Pern	neability
#	Tested			K (cm/s)	K ft/day
46	9/29/04	150' NW from SE Corner of Cell #2	52.4	6.10 E-08	1.73 E-04

Technician: Vince Simmons

Reviewed Byy K. M. Diences, Inc. Universal Engineering Sciences, Inc. Certificate of Authoritation Now,00000549

Mark Hardy R. F.

Tampa Branah Manager & A

Date:



Date:

80540-001-02

Report No.:

PW #8

November 10, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

Test	Date	Location	Percent passing No. [Pern	neability
#	Tested			K (cm/s)	K ft/day
47	10/25/04	Cell 2	61.1	1.2 E-08	3.4 E-05

Technician: N/A Reviewed By,

Universal Engineering Sciences, Inc.

Certificate of Aufhorization No. 00000549



80540-001-02

Report No.: Date:

PW #9

November 22, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences
Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Mike Marshall

Ordered By:

David Barnett

TEST RESULTS

Test	Date	Location	Percent passing No. 200 Sieve	Pern	neability
#	Tested			K (cm/s)	K ft/day
48	11/10/04	Cell 2	48.9	2.5 E-08	7.0 E-05

Technician: N

N/A

Reviewed By Universal Engineening Sciences, Inc. Certificate of Authorization No. 00000549

Mark K. Hard POE 238 Tampa Branch Manager

Tampa Branch Manager 29 27233 Professional Engineer No. 57233

100.1



80540-001-02

Report No.: Date:

PW #10

November 24, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

Test	Date	Location	Percent passing No. 200 Sieve	Permeability	
#	Tested			K (cm/s)	K ft/day
49	10/07/04	Cell 2	54.4	9.5 E-08	2.7 E-04

Technician:

N/A

Reviewed By, Maring Sciences, Inc. Universal Englineering Sciences, Inc. Certificate of Authoritzation, No. 00000549

Mark K. Hardy

Tampa Pjanch Waha

Professional Eng Date:



80540-001-02 PW #11

Report No.: PW Date: Dec

December 7, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences
Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

perisel

TEST RESULTS

Test	Date	Location	Percent passing No. [200 Sieve	Perm	neability
#	Tested			K (cm/s)	K ft/day
50	11/23/04	Cell 2	60.4	71 E-08	2.0 E-05

Universal Explined Filip Sciences, Inc. Certificate of Authorization No. 00000549

Támga Branch Managei

Reviewed By Millimin

Date!

Technician:

N/A



80540-001-02 PW #12

Date:

December 13, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

Test		Location	Location Percent passing No. 200 Sieve			neability
#	Tested			K (cm/s)	K ft/day	
51	12/10/04	Cell 2	46.2	3.3 E-07	9.5 E-04	

Technician:

N/A

Certificate of Autronization No. 100000549

80540-001-02 PW #13

Date:

December 14, 2004

Consultants in: Geotechnical Engineering • Environmental Sciences

Construction Materials Testing • Threshold Inspection • Private Provider Inspection

9802 Palm River Road • Tampa, FI 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE

Client:

Angelo's Aggregate Materials

Attention: Dominic lafate 26400 Sherwood Street Warren, MI 48091

Project:

Dade City Landfill, 5 acre Clay Liner

Tested By:

Greg Kemp

Ordered By:

David Barnett

TEST RESULTS

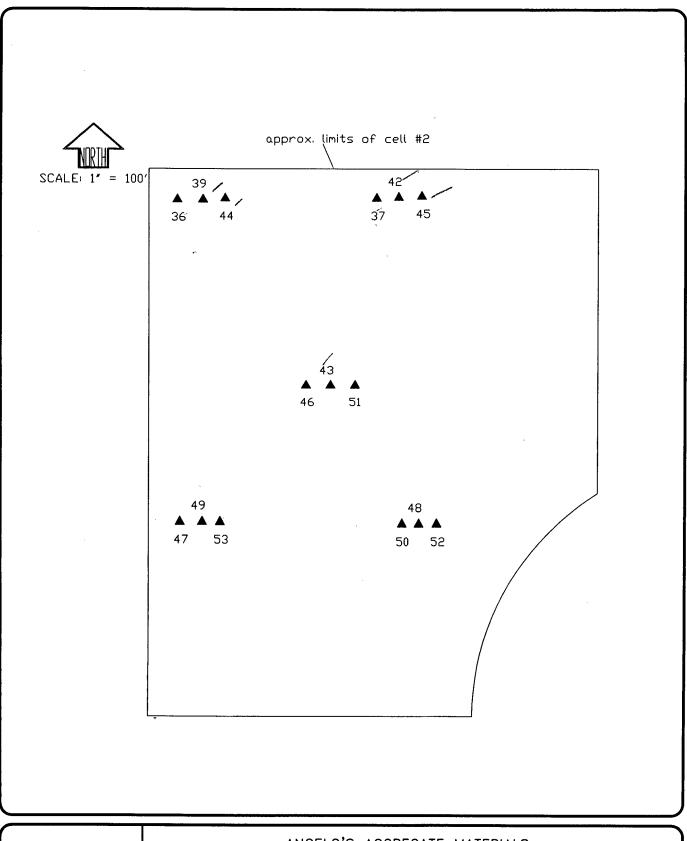
Test	Date	Location	Percent passing No. [200 Sieve	· · · · · · · · · · · · · · · · · · ·	
#	Tested			K (cm/s)	K ft/day
52	12/13/04	Cell 2	53.9	1.98 E-08	5.6 E-05
53	12/14/04	Cell 2	49.7	1.2 E-08	3.3 E-05

Technician: N/A

Reviewed By Universal Engineering Sciences, Inc. Certificate of Authorization No., 00000549

Márk K. Hardy, TEE 723

Professional Engineer No. 5





ANGELO'S AGGREGATE MATERIALS PERMIABILITY TEST LOCATION PLAN CLAY LINED CELL #2

DRAWN BY: J.C.	DATE: NOV.	24, 2004 CHECK	ED BY: D.B.	DATE: NOV. 24, 2004
SCALE: 1 : 100	PROJECT NO:	80540-001-02	REPORT NO:	PAGE NO:



Northeast corner of Cell Z, looking west



Northeast corner of Cellz, looking Southwest

3



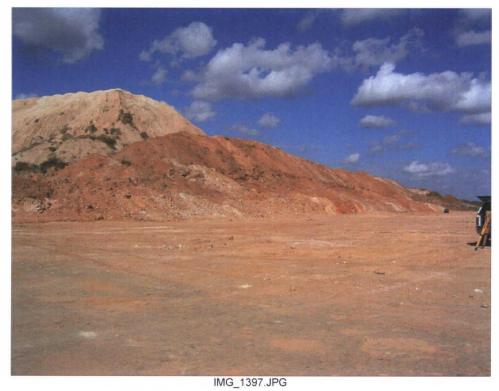
Northeast corner of Cellz, looking Southwest



Near southeast corner of Cellz, typical side slope (east + south sides)



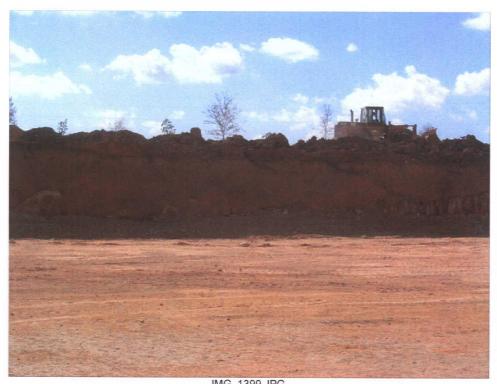
East side of Cell Z, looking west



East side of Cell 2, looking northwest



Southwest corner of Cell 2, looking northeast



Standing in Cell 2, looking at south slope

9

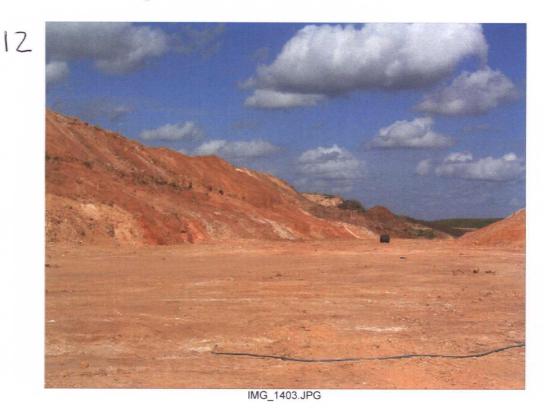


Standing in Cell Z, looking at South slope



Standing in Cell 2, looking at east slope

Standing in Cell 2, looking at southeast slope



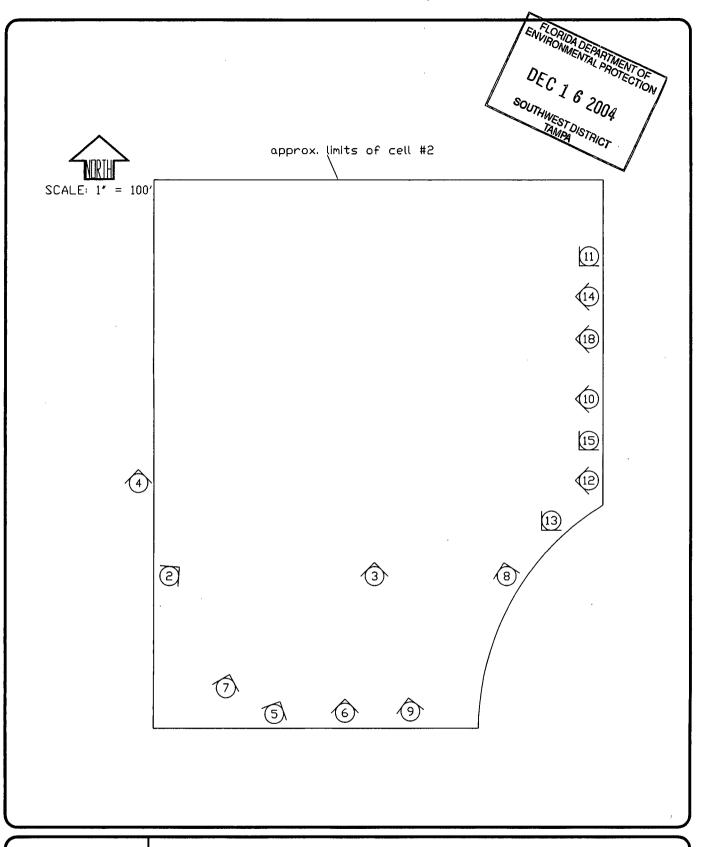
Standing in Cellz, looking at northwest slope

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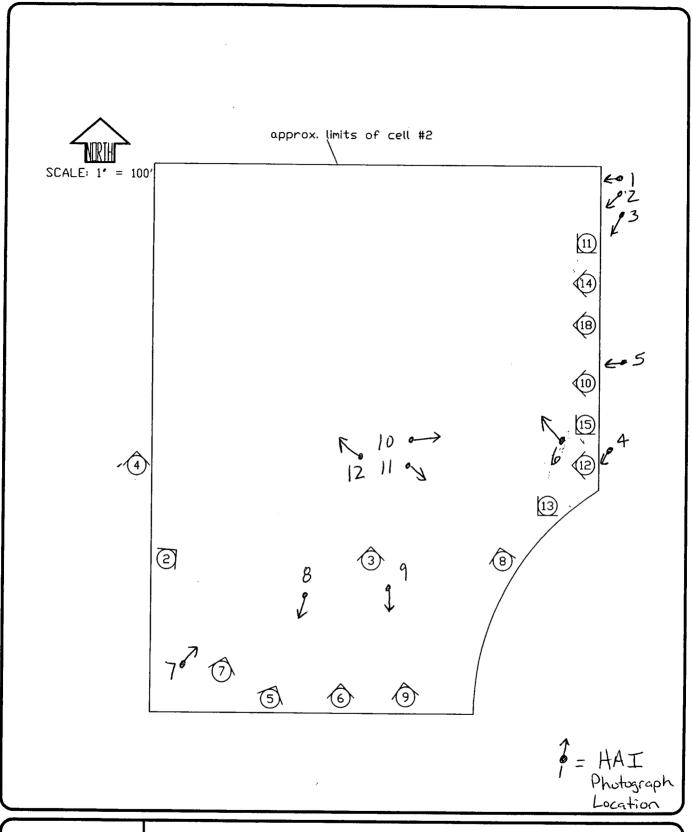
VES#80540-002-01 CELL #2





ANGELO'S AGGREGATE MATERIALS PHOTOGRAPH LOCATION PLAN CLAY LINED CELL #2

ı							
	DRAWN BY: J.C.	DATE:	DEC. 13, 2004	CHECKED B	Y: D.8.	DATE:	DEC. 13, 2004
I	SCALE: 1:100	PROJECT	NO: 80540-001	-02 REP	ORT NO:	PAGE NO:	





ANGELO'S AGGREGATE MATERIALS
PHOTOGRAPH LOCATION PLAN
CLAY LINED CELL #2

DRAWN BY: J.C.	DATE: DEC.	13, 2004	CHECKED BY:	D.8.	DATE:	DEC. 13, 2004	
SCALE: 1:100	PROJECT NO:	ROJECT NO: 80540-001-0		-02 REPORT NO:		PAGE NO:	