

October 15, 2018

Mr. Steve Morgan  
Solid Waste Section  
Florida Department of Environmental Protection - Southwest District  
13051 North Telecom Parkway  
Temple Terrace, Florida 33637-0926

RE: Enterprise Recycling and Disposal Facility  
Cell 16 Construction Completion Report  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-023-SC/T3  
WACS No.: 87895  
Pasco County, Florida

Dear Mr. Morgan,

This report contains the Certification of Construction Completion (Certification) and Construction Quality Assurance (CQA) data for Cell 16 of the Enterprise Class III landfill and is being submitted to the Florida Department of Environmental Protection (Department) for review and approval.

The CQA program and certification reporting are based on the specific condition requirements contained in FDEP Permit No. 177982-023-SC/T3, which include the following:

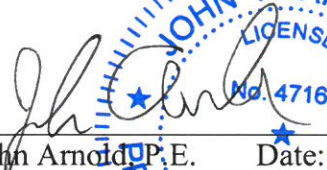
- a. **The owner or operator shall submit a Certification of Construction Completion, Form 62-701.900(2), signed and sealed by the professional engineer in charge of construction and quality assurance to the Department for approval (Specific Condition 177982-023-SC/T3, Part B, 2.a.1).** The Certification of Construction Completion is provided in Attachment A.
- b. **The permittee shall submit Record Drawings/Documents showing all changes (i.e. additions, deletions, revisions to the plans previously approved by the Department including site grades and elevations). The Record Documents shall include, but not be limited to, as-built elevations of the disposal areas (surveys), details and elevations of limerock encountered, and other details as appropriate (Specific Condition 177982-023-SC/T3, Part B, 2.a.2).** The Record Drawings are provided in Attachment B.
- c. **The owner or operator shall submit a narrative indicating all changes in plans, the cause of the deviations, and certification of the Record Drawings/Documents**

by the Engineer to the Department (Specific Condition 177982-023-SC/T3, Part B, 2.a.3). The narrative report prepared by the professional engineer of record is provided in Attachment C.

- d. **The professional engineer of record shall submit to the Department a final report to verify conformance with the project specifications, including all test results for the development of each cell (Specific Condition 177982-023-SC/T3, Part B, 2.a.4).** These documents including the Construction Quality Assurance Testing performed by Universal Engineering Sciences, Inc. are provided in Attachment D.
- e. **Prepare and submit financial assurance for the facility in accordance with F.A.C. 62-701.630 and Specific Condition 177982-023-SC/T3, Part D.4).** The approved financial assurance estimate and existing letter of credit on file with the Department include Cell 16.
- f. **Limerock Details and Observations.** There was no limerock observed or encountered as part of Cell 16 construction.
- g. **Groundwater Monitoring Wells and Sampling.** Installation, initial sampling, and reporting of the groundwater monitoring wells associated with Cell 16 construction is being coordinated by our sub-consultant, Mr. Locklear P.G. All of the requested materials have been provided to the Department by them.

We trust this submittal, along with the financial assurance update, will satisfy the Department's certification requirements. Please call me at (352) 339-1408 if you have any questions or require any additional information.

Sincerely,

  
John Arnold P.E.      Date: 10/15/12  
State of Florida P.E. No.: 47164  
1530 McDuff AVE. S.  
Jacksonville, FL 32205  
Tel.: (352) 339-1408

attachments

cc:      Dominic lafrate, Angelo's Recycled Materials

**Attachment A**

**Certification of Construction Completion  
FDEP Form 62-701.900(2)**





## **Attachment B**

### **Record Drawings Pickett and Associates, Inc.**

A topographic survey depicting as-built conditions of the site was prepared by Pickett and Associates, Inc. based on the aerial reconnaissance performed on September 17, 2018. Surveying ground control for the site was established by Simmons and Beall, Inc. As-built elevations documenting the 3' clay over-excavation, top of Cell 16 clay, pump station and leachate collection pipe were collected under the direction of John Arnold, P.E. as the Engineer of Record in accordance with Chapter 471, Florida Statutes.

---

# SURVEYOR'S REPORT

---

## ENTERPRISE ROAD LANDFILL

Prepared for:



Prepared by:



PICKETT AND ASSOCIATES PROJECT NO.: 14094-9

TITLE/TYPE OF SURVEY: Topographic Survey

DATE OF SURVEY: This Map is based on LiDAR data & aerial imagery flown  
09/17/18

***NOTE: THIS REPORT AND ACCOMPANYING MAP TITLED ENTERPRISE ROAD LANDFILL, ARE NOT FULL AND COMPLETE WITHOUT THE OTHER AND ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.***

**DATUM:****HORIZONTAL:**

Coordinates are referenced to the West Zone of the Florida State Plane Coordinate System, NAD 83, and were provided by Simmons and Beall Surveying.

**VERTICAL:**

Elevations are to National Geodetic Vertical Datum of 1929 and were provided by Simmons and Beall Surveying

**Control Points Used:**

<b><u>Pt#</u></b>	<b><u>Easting</u></b>	<b><u>Northing</u></b>	<b><u>Elevation</u></b>
4000	612277.73	1454997.54	105.81
4001	612338.97	1452175.37	139.98
4002	614249.29	1452235.24	113.56
4003	614271.09	1454880.23	85.32

**ACCURACY STATEMENT:** The following stated plus or minus tolerances encompass a minimum of 90% of the difference between photogrammetrically measured values and any ground truth of all well-identified features. Mapped features will meet or exceed the Florida Standards of Practice.

**VERTICAL:**

Contours have an estimated vertical positional accuracy of 0.5'. Spot elevations, on paved surfaces, have an estimated vertical positional accuracy of 0.25'.

**HORIZONTAL:**

Well-identified features have an estimated horizontal positional accuracy of 1.66'. All measurements are in U.S. Survey Feet.

**Measurement Methods:**

The planimetrics shown are limited to those features visible on aerial imagery. Color digital imagery was acquired at an average altitude of 2100' using a metric precision digital camera whose focal length is 51.58mm. Mapping was performed using LiDAR and softcopy photogrammetric techniques. The LiDAR data has an estimated point sample distance of 0.4 foot and a density of 6.4 points per square foot ( $\pm 68.889$  points per square meter). For a vertical accuracy check, the LiDAR data was compared to the four (4) points set as targets for aerial imagery. The Root Mean Square Error of the Elevations (RMSEZ) is 0.074 foot, being the equivalent of 0.145' FGDC/NSSDA Vertical Accuracy. All measurements are in U.S. Survey Feet.

**Limitations:**

This mapping should be used for preliminary design work only and should not replace an actual field survey where the required accuracy is greater than the accuracy stated in this report. No responsibility is assumed for areas outside the contracted scope or for the control provided by Simmons and Beall Surveying, Dade City, Florida.

**MAP PLOTTING:**

This map may be displayed at a scale of 1" = 50' (1:600) or smaller.

---

T. JEFFREY YOUNG, PSM, CP  
FLORIDA REGISTRATION NO. 5440  
PICKETT AND ASSOCIATES, INC.  
FLORIDA REGISTRATION NO. 364

---

SURVEY DATE





**SURVEYOR'S NOTES:**

1.) North, the grid, and the coordinates shown herein are referenced to the West Zone of the Florida State Plane Coordinate System, NAD 83, 1985 adjustment.

2.) Elevations are to National Geodetic Vertical Datum of 1929.

3.) This topographic survey was prepared using photogrammetric and LIDAR methods. See the attached report for map accuracy and is limited to those features visible on aerial imagery.

**LEGEND:**

(THESE FEATURES ARE REPRESENTED BY SYMBOLS (NOT TO SCALE))

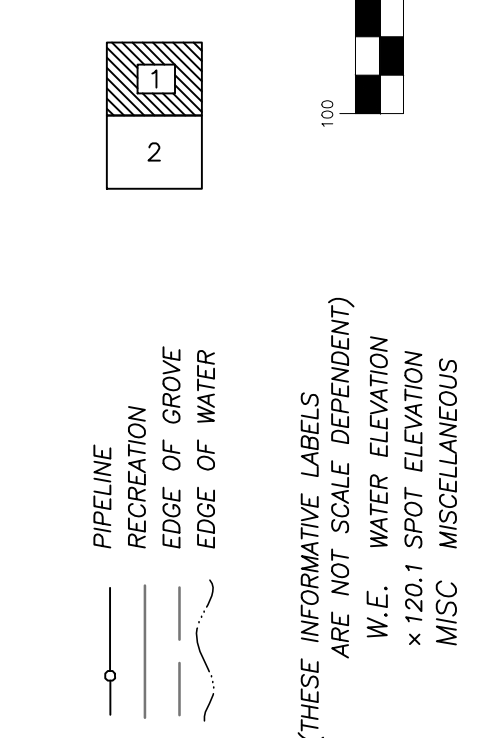
CONTROL  
PI# TARGET NUMBER  
N NORTHING  
EL ELEVATION  
LIGHT POLE  
TRAFFIC LIGHT  
SIGN  
POST  
FLAG  
MAIL BOX  
GUYWIRE

(THESE FEATURES ARE TO SCALE)

CURB  
PAVED ROAD  
CONCRETE SURFACE  
UNPAVED ROAD  
FENCE  
GUARDRAIL  
WALL  
RAILROAD  
STRUCTURE  
TREE LINE  
SHRUB LINE

(THESE INFORMATIVE LABELS ARE NOT SCALE DEPENDENT)

PIPELINE  
RECREATION  
EDGE OF GROVE  
EDGE OF WATER



**ACTIVITY SUMMARY:** This project was completed in accordance with the Florida Standards of Practice for Professional Surveyors. The survey was conducted on the Enterprise Road Landfill area, showing the existing conditions and proposed improvements. The survey was completed on 9/17/18.

**MEASUREMENT METHODS:** This map is limited to those features visible on aerial imagery.

**LIMITATIONS:** This mapping should be used for preliminary planning only. It is not to be used for construction or other purposes where the required accuracy is greater than that shown on this map. The accuracy of the map is limited to the accuracy of the data used in its preparation.

PROJECT No.  
**14094-9**

DRAWING No.  
**LD-6398**

No.  
**1**

OF  
**2**

PREPARED FOR: ANGELO'S RECYCLED MATERIALS

TOPOGRAPHIC SURVEY

ENTERPRISE ROAD LANDFILL

Edited by: RP

Compiled by: PL

Flight Date: 9/17/18

Drawn by: [Signature]

Horiz. Scale: 1" = 100'

Contour Interval: 1'

DATE  
O.R. 10/1/18

DATE  
T.J.Y.

DATE  
[Blank]

DATE  
[Blank]

REVISION  
ORIGINAL RELEASE

DATE  
[Blank]

DATE  
[Blank]

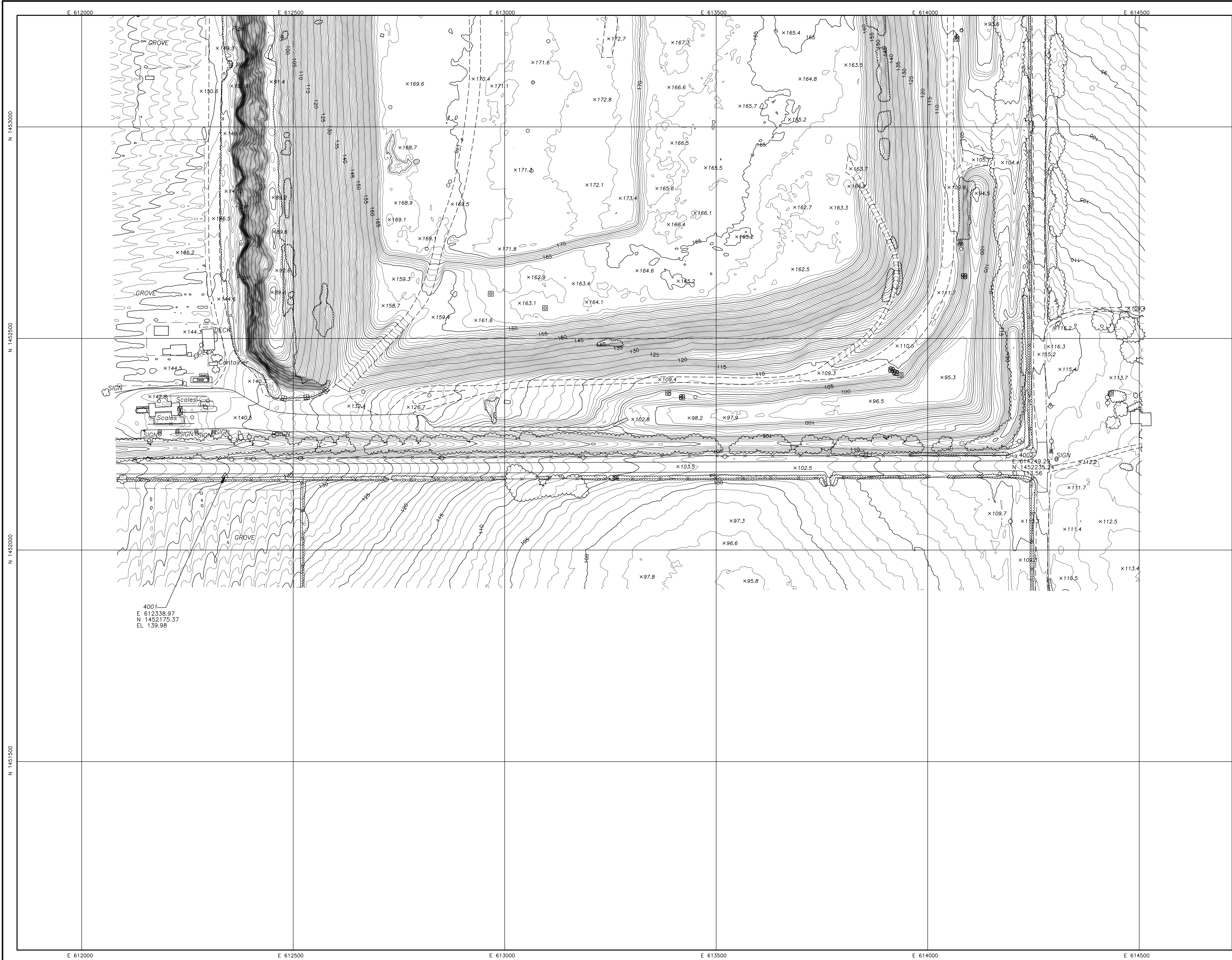
DATE  
[Blank]

PICKETT SURVEYING • ENGINEERING

POCKETT AND ASSOCIATES, INC.  
475 SOUTH BAYVIEW BLVD.  
FLORIDA 33500  
PHONE: (863)-533-8095  
FAX: (863)-533-8096  
LICENSED BUSINESS NO. LB364

9/7/18  
T. J. JOHNSON, P.E., P.S., C.P.  
FLORIDA REGISTRATION NO. 6440





**SURVEYOR'S NOTES:**

1.) North, the grid, and the coordinates shown hereon are referenced to the West Zone of the Florida State Plane Coordinate System, NAD 83, 1980 adjustment.

2.) Elevations are to National Geodetic Vertical Datum of 1929.

3.) This topographic survey was prepared using photogrammetric and LIDAR methods. See the attached spot elevation map for more information. This map is limited to those features visible on aerial imagery.

**LEGEND:**

(THESE FEATURES ARE REPRESENTED BY SYMBOLS NOT TO SCALE)

△ CONTROL	⊞ CATCH BASIN
PI# TARGET NUMBER	⊙ VALVE
N NORTHING	⊠ AIR CONDITIONER
EL ELEVATION	⊠ MISCELLANEOUS SYMBOL
⊠ LIGHT POLE	⊠ MANHOLE
⊠ TRAFFIC LIGHT	⊠ HYDRANT
⊠ SIGN	⊠ TREE
⊠ POST	⊠ PALM
⊠ FLAG	⊠ MAIL BOX
⊠ GUYWIRE	

(THESE FEATURES ARE TO SCALE)

— PIPELINE	— RECREATION
— EDGE OF GROVE	— EDGE OF WATER
— CUB	— PAVED ROAD
— CONCRETE SURFACE	— UNPAVED ROAD
— FENCE	— GUARDRAIL
— WALL	— RAILROAD
— STRUCTURE	— TREE LINE
— SHRUB LINE	

(THESE INFORMATIVE LABELS ARE NOT SCALE DEFENDENT)

W.E. WATER ELEVATION  
x 120.1 SPOT ELEVATION  
MISC MISCELLANEOUS

**GRAPHIC SCALE**

1 inch = 100 ft.

( IN FEET )

0 50 100 200

**ACTIVITY RESUMPTION:** This map was prepared using the latest available data and is intended to be used for planning purposes only. It does not constitute a warranty of accuracy or a statement of fact. The user assumes all responsibility for the use of this map. The map is not to be used for legal purposes. The map is not to be used for legal purposes. The map is not to be used for legal purposes.

**MAP PLATTING:** This map is intended to be displayed at a scale of 1 inch = 100 feet. The map is not to be used for legal purposes. The map is not to be used for legal purposes. The map is not to be used for legal purposes.

**MEASUREMENT METHODS:** This map is limited to those features visible on aerial imagery.

**LIMITATIONS:** This mapping should be used for preliminary planning purposes only. The map is not to be used for legal purposes. The map is not to be used for legal purposes. The map is not to be used for legal purposes.

**TOPOGRAPHIC SURVEY**

**ENTERPRISE ROAD LANDFILL**

PREPARED FOR: ANGELO'S RECYCLED MATERIALS

PROJECT No. **14094-9**

DRAWING No. **LD-6398**

No. **2** OF **2**

DATE: **10/17/18**

APPROVED: **TJY**

REVISION: **ORIGINAL RELEASE**

PICKETT AND ASSOCIATES, INC.  
475 SOUTH GARDEN BARTON,  
FLORIDA 33500  
PHONE: (863)-533-8095  
FAX: (863)-533-8096  
LICENSED BUSINESS No. LB364

Edited by: **RP**

Compiled by: **PL**

Flight Date: **9/17/18**

Drawing: **14094-9.DWG**

THIS MAP AND ATTACHED REPORT ARE NOT FULL AND COMPLETE. THE USER ASSUMES ALL RESPONSIBILITY FOR THE USE OF THIS MAP. THE MAP IS NOT TO BE USED FOR LEGAL PURPOSES. THE MAP IS NOT TO BE USED FOR LEGAL PURPOSES. THE MAP IS NOT TO BE USED FOR LEGAL PURPOSES.

SEE PAGE 1 FOR THE SIGNATURE AND THE ORIGINAL RAISED SEAL



C:\Civil 3D Projects\02000-144-14\_02\CADD\Sheet\_List\ARNOLD-CELL 16\AB-01.dwg PLOT DATE 10/15/2018 12:25 PM BY MAF

○71.17

○71.99

○71.61

○71.31

○71.10

○71.26

○71.16

○71.11

○71.11

○75.91

○75.99

○75.79

○75.99

○76.21

○76.66

○76.00

○76.21

○76.16

○76.27

○76.14

○75.31

CELL 16

○76.22

○76.01

○76.16

○75.81

○75.91

○73.41

○76.12

○76.32

○75.96

○76.00

○76.26

○73.61

○76.31

○76.00

○76.21

○76.00

○76.11

○73.51

NORTH

0 30 60  
Feet

### LEGEND

- X — X — PERIMETER FENCE
- — — — — PROPERTY BOUNDARY
- — — — — LANDFILL CELL 16
- 76.35 ELEVATION OF EXCAVATED SUBGRADE PRIOR TO CLAY CONSTRUCTION

### NOTES:

1. DATA COLLECTED UNDER THE DIRECTION OF JOHN ARNOLD, P.E. ON 4/24/17 - 7/18/17 USING GROUND CONTROL BY SIMMONS AND BEALL, INC.
2. THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 AND REFERENCE TO U.S.G.S. BENCHMARK #Q-56, SAID BENCHMARK BEING LOCATED BY SIMMONS AND BEALL, INC.
3. SIMMONS AND BEALL, INC. ESTABLISHED THE SITE BENCHMARK ON THE NORTH SIDE OF ENTERPRISE ROAD APPROXIMATELY 75' FEET WEST OF THE ENTRANCE TO ANGELO'S RECYCLED MATERIALS LANDFILL. BEING A 1/2" IRON ROD AND CAP NO. LB8382 IN THE CENTER OF AN AERIAL PANEL WITH AN ELEVATION OF 148.94' FEET.
4. SPOT ELEVATIONS ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE.

NO.	DATE	REVISION DESCRIPTION	BY

JOHN ARNOLD, P.E.

1530 McDUFF AVENUE SOUTH  
JACKSONVILLE, FLORIDA 32205  
PH: 352-339-1408

PROJECT TITLE:

ENTERPRISE ROAD CLASS III  
RECYCLING & DISPOSAL FACILITY  
DADE CITY, PASCO COUNTY, FLORIDA

JOHN P. ARNOLD  
P.E.  
NO. 47164  
FLORIDA  
PROFESSIONAL ENGINEER  
10/15/2018  
2018

DESIGNED BY	JPA
DRAWN BY	MAF
CHECKED BY	
APPROVED BY	

SHEET TITLE:

CELL 16 CLAY OVER-EXCAVATION

PROJECT NO.:

SCALE:  
AS SHOWN

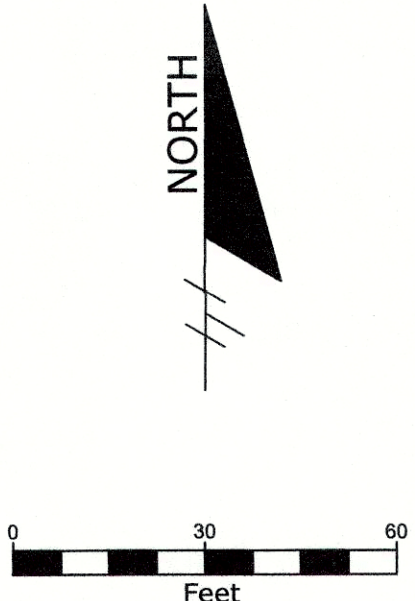
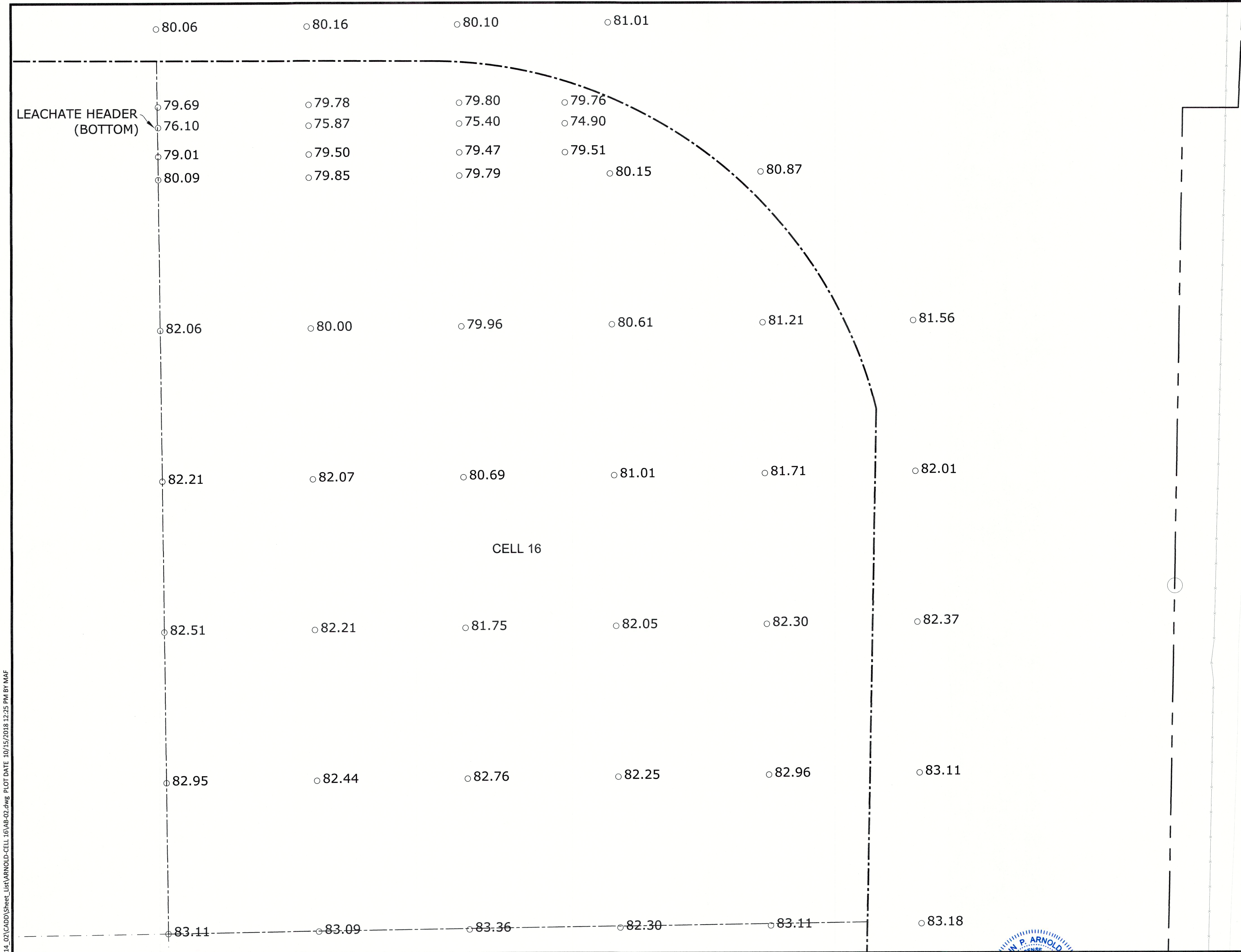
DATE:  
OCTOBER 2018

DRAWING:  
AB-01

REVIEW ONLY-NOT FOR CONSTRUCTION



C:\Civil 3D Projects\02000-144-14\_02\CADD\Sheet\_List\ARNOLD-CELL 16\AB-02.dwg PLOT DATE 10/15/2018 12:25 PM BY MAF



**LEGEND**

X X PERIMETER FENCE

--- PROPERTY BOUNDARY

--- LANDFILL CELL 16

○ 80.15 TOP OF 3' CLAY LAYER

- NOTES:**
1. DATA COLLECTED UNDER THE DIRECTION OF JOHN ARNOLD, P.E. ON 7/23/17 - 5/11/18.
  2. THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 AND REFERENCE TO U.S.G.S. BENCHMARK #Q-56, SAID BENCHMARK BEING LOCATED BY SIMMONS AND BEALL, INC.
  3. SIMMONS AND BEALL, INC. ESTABLISHED THE SITE BENCHMARK ON THE NORTH SIDE OF ENTERPRISE ROAD APPROXIMATELY 75' FEET WEST OF THE ENTRANCE TO ANGELO'S RECYCLED MATERIALS LANDFILL. BEING A 1/2" IRON ROD AND CAP NO. LB6382 IN THE CENTER OF AN AERIAL PANEL WITH AN ELEVATION OF 148.94' FEET.

				JOHN ARNOLD, P.E.		PROJECT TITLE:		SHEET TITLE:		PROJECT NO.:	
				1530 McDUFF AVENUE SOUTH		ENTERPRISE ROAD CLASS III		CELL 16 TOP OF CLAY		SCALE:	
				JACKSONVILLE, FLORIDA 32205		RECYCLING & DISPOSAL FACILITY				AS SHOWN	
				PH: 352-339-1408		DADE CITY, PASCO COUNTY, FLORIDA				DATE:	
										OCTOBER 2018	
										DRAWING:	
										AB-02	

JOHN P. ARNOLD  
P.E.  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER  
LICENSE NO. 47164

DESIGNED BY	JPA
DRAWN BY	MAF
CHECKED BY	
APPROVED BY	

FL PE NO. 47164

REVIEW ONLY-NOT FOR CONSTRUCTION



**Attachment C**

**Engineer of Record Narrative Report**

**Engineer of Record Narrative Report**

**Enterprise Recycling and Disposal Facility  
Cell 16 Construction  
FDEP Permits No.: 177982-023-SC/T3  
WACS No.: 87895**

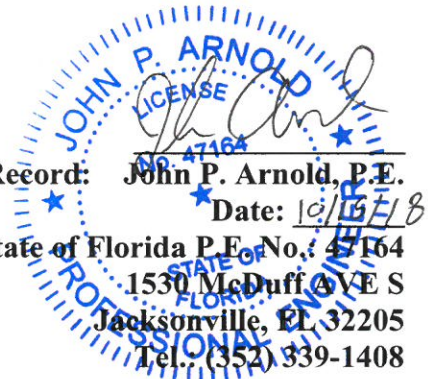
**Prepared For:**

**Angelo's Aggregate Materials, Ltd.  
855 28<sup>th</sup> Street South  
St. Petersburg, FL 33712**

**Prepared By:**

**Engineer of Record: John P. Arnold, P.E.**  
**Date: 10/16/18**

**State of Florida P.E. No.: 47164  
1530 McDuff Ave S  
Jacksonville, FL 32205  
Tel.: (352) 339-1408**





## **Background**

This report documents the activities and methods of construction for Cell 16 (approximately 5.5 acres in size) in accordance with FDEP Permit No. 177982-023-SC/T3.

Record Drawings of the as-built conditions, including the top of the 3' thick clay barrier layer were performed by Pickett and Associates, Inc. and John Arnold, P.E., with ground control provided by Simmons and Beall, Inc. Elevations of the excavation/undercut (prior to installation of the 3' thick clay barrier layer), top-of-clay (after installation of the 3' thick clay barrier layer), pump station (wetwell) and leachate collection pipe were performed by the Engineer of Record (Engineer) using the ground control data provided by Simmons and Beall, Inc. Topographic survey and elevation data were evaluated by the Engineer for conformance with the Department requirements. All Record Drawings are provided in Attachment B. The elevations on the surveys show that the subgrade was over-excavated by a minimum of 3-feet and then backfilled with clay to construct a 3' thick clay layer. The clay was placed in three (3) approximately 12-inch thick lifts, with each lift being compacted. Geotechnical soils tests were performed on each completed clay lift to ensure the installed clay layer met the Department requirements.

Universal Engineering Sciences, Inc. (UES) performed all field and laboratory testing in accordance with the Construction Quality Assurance (CQA) requirements. Mr. John Arnold, P.E. served as the professional engineer of record and he, or his designee was on-site at all times during construction to monitor construction activities.

## **Clay Layer Construction**

Cell 16 was over-excavated by a minimum of 3 feet so that the finished 3-ft thick clay layer could be installed. The over-excavation was performed using tracked excavating equipment. The Engineer verified grades to ensure that the excavation was sufficient to meet the 3-foot over-excavation criteria. Clay was placed and compacted in the over-excavated using approximately 12-inch lifts to construct the clay layer. Clay was also placed and compacted in approximate 12-inch lifts to construct the perimeter road (berm). Signed and Sealed drawings documenting the As-Built are provided in Attachment B.

Clay from on-site was used to construct the clay layer and the clay berms that extend along the east and north sides of Cell 16. The clay was installed in approximately 12-inch lifts and compacted to within at least 95% of the maximum dry density in accordance with ASTM D698. The clay for each lift was spread with a bull dozer and compacted with multiple passes of loaded off-road (articulating) dump trucks. The in-place density and moisture content for the clay lifts were evaluated by the Universal representative using nuclear-density testing and Speedy Moisture Content devices, respectively. Cell 16 was subdivided by row (1, 2, and 3) and columns (A and B) into sections for testing. Each section was less than 1 acre in size, which was the approved testing frequency used for in-place materials, per lift. Lifts were designated as Lift 1, 2, or 3 (from bottom to top). A figure depicting the Cell 16 Test Plan is attached.

The UES field technician collected undisturbed Shelby tube samples for each test section, per

completed lift, to verify that the installed permeability met or exceeded the Department approved criteria. Permeability testing was performed on the undisturbed Shelby tube samples in the laboratory using a triaxial-permeameter device. The collected samples were also used to evaluate Atterberg Limits.

Results of the density, permeability, and moisture content tests, including the testing plan key map, are provided as Attachment D.

### **Leachate Pipe and Wetwell**

The leachate pipe along the north end of Cell 16 was installed by Comanco Environmental Corporation. The leachate pipe was 8" DIA SDR 17 HDPE and was fusion welded by Comanco. The perforated portion of the pipe included 3/8" DIA holes at 3" linear spacing per the approved drawings. The pipe was backfilled No. 4 aggregate and encapsulated with non-woven filter fabric. The wet well was installed by Riley and Company, Inc. A copy of the start up test is provided and documents a flow rate of 86 gpm.

### **Limerock**

Limerock was not observed or encountered within the area of Cell 16.

### **Field Inspection, Review, Conformance Assessment, and Major Deviations**

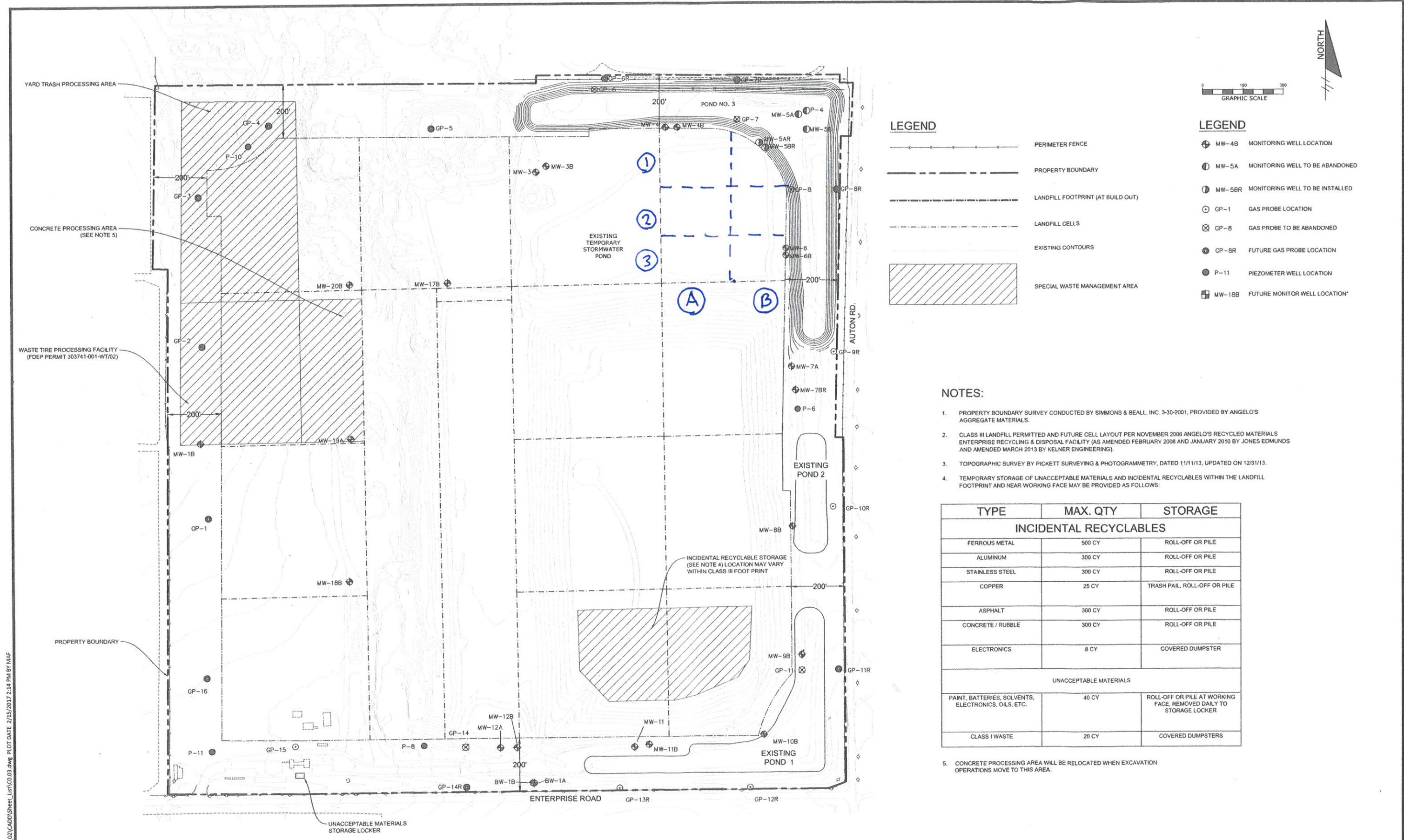
John Arnold, P.E., serving as the Engineer of Record, reviewed the UES Testing Report, As-Built (Record) drawings, performed daily field inspections/observations, and prepared and submitted this report and Certification of Construction Completion to the Department for review and approval. In accordance with requirements of Specific Condition 177982-023-SC/T3, Part B, 6.b.:

1. There were no occurrences of sinkholes, soft zones, ravel areas, or unstable conditions associated with the construction of Cell 16.
2. There were no submittal or change orders associated with construction of Cell 16. The capacity of the leachate collection pipe was increased by increasing the diameter of the pipe from 6" to 8" HDPE (SDR 17).
3. Weekly progress meeting were informal and minutes were not taken.
4. Daily observation reports and photographs of construction activity are attached to this Engineer of Record Narrative Report.

### **Summary**

Review of the UES Testing Report, Record Drawings, and field observations during construction indicate that Cell 16 has been constructed in substantial accordance with the Department approved permit requirements.

## **Cell 16 Test Plan**



Z:\Civi 3D Project\02000-144-14-03\CADD\Sheet\_Lut\CO03.dwg PLOT DATE: 2/15/2017 2:14 PM BY: MAF

NO.	DATE	REVISION DESCRIPTION	BY
1	7/31/16	FDEP R.A.I. NO. 1 RESPONSE	LIB
2	12/02/16	FDEP R.A.I. NO. 2 RESPONSE	LIB
3	1/24/17	SUPPLEMENTAL INFORMATION FOR TOE DRAIN	LIB
4	2/3/17	REVISED TOE DRAIN AND ADDED LEACHATE COLLECTION WETWELL	LIB



4140 NW 37th Place, Suite A  
Gainesville, Florida 32606  
Phone: 352.672.6867 Fax: 352.692.5390  
Certificate of Authorization No. 30066

PROJECT TITLE:  
**PERMIT PLANS  
ENTERPRISE ROAD CLASS III  
RECYCLING & DISPOSAL FACILITY  
2016 PERMIT MODIFICATION  
DADE CITY, PASCO COUNTY, FLORIDA**

LISA J. BAKER

DESIGNED BY	LIB
DRAWN BY	MAF
CHECKED BY	JDL
APPROVED BY	LIB

FL PE NO. 74652

SHEET TITLE:  
**Cell 16 Field Testing Plan  
SITE PLAN**

PROJECT NO.:  
02000-144-14  
SCALE:  
AS SHOWN  
DATE:  
MARCH 2016  
DRAWING:  
C0.03

**REVIEW ONLY-NOT FOR CONSTRUCTION**



## **Project Photographs**





































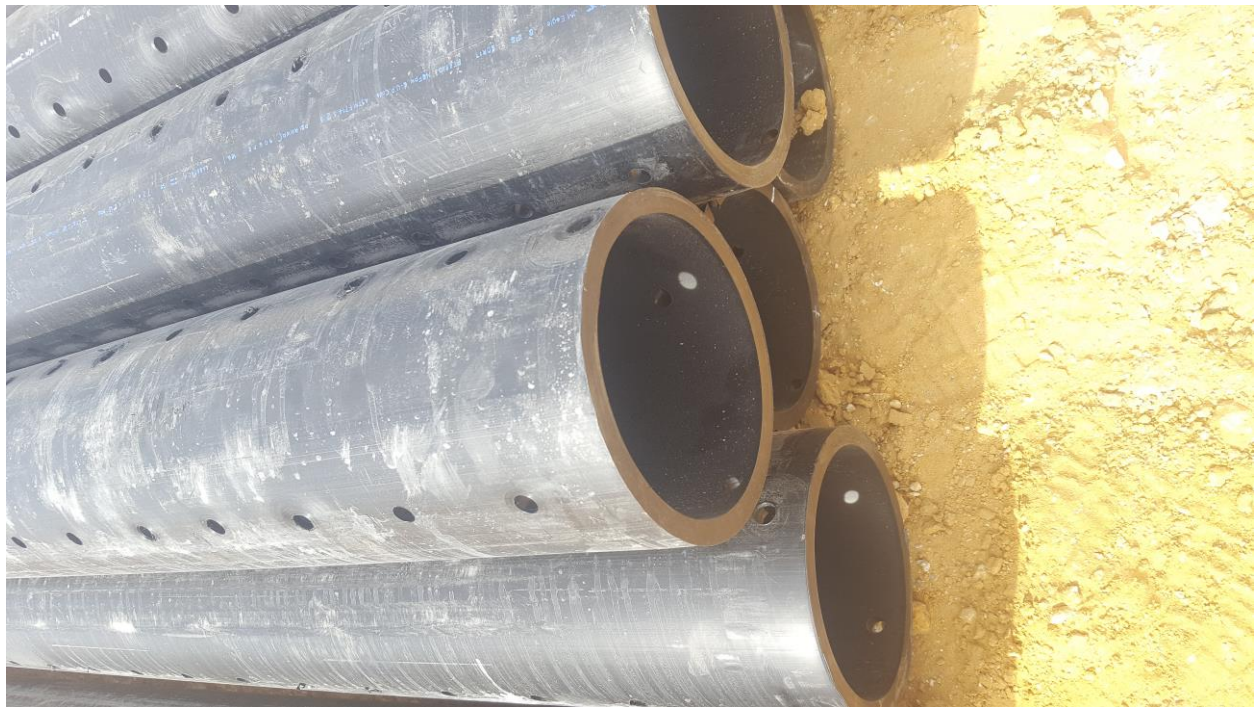
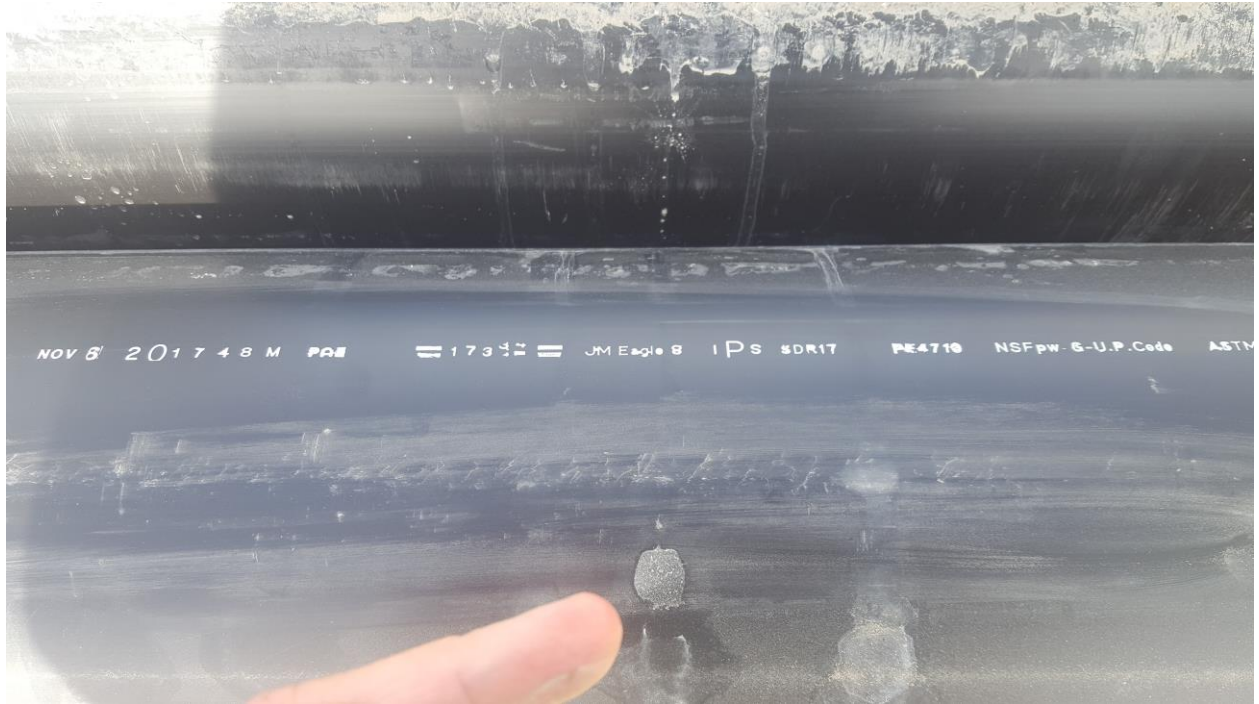


















## **Daily Observation Reports**

# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
4/24/17	JPA	72	0.00	Clearing vegetation from construction area
4/25/17	JPA	70	0.00	
4/26/17	JPA	74	0.00	
4/27/17	JPA	68	0.04	
4/28/17		67	0.00	
4/29/17				
4/30/17				
5/1/17	JPA	77	0.00	Clearing vegetation from construction area
5/2/17	JPA	79	0.31	
5/3/17	JPA	68	0.10	
5/4/17	JPA	68	0.00	
5/5/17	JPA	68	0.10	
5/6/17				
5/7/17				
5/8/17	JPA	76	0.00	
5/9/17	JPA	72	0.00	
5/10/17	JPA	74	0.00	Undercut of cell and berm areas
5/11/17	JPA	75	0.00	
5/12/17	JPA	78	0.00	
5/13/17				
5/14/17				
5/15/17	JPA	67	0.00	Wet conditions from weekend.
5/16/17	JPA	74	0.00	
5/17/17	JPA	73	0.00	
5/18/17	JPA	76	0.00	
5/19/17	JPA	78	0.00	
5/20/17				
5/21/17				
5/22/17	JPA	80	1.00	Wet conditions from weekend.
5/23/17	JPA	81	0.00	
5/24/17	JPA	79	0.10	
5/25/17	JPA	72	0.00	
5/26/17	JPA	72	0.00	
5/27/17				
5/28/17				
5/29/17	JPA	81	0.00	Earthwork cut
5/30/17	JPA	82	0.00	



# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
5/31/17	JPA	79	0.10	
6/1/17	JPA	85	0.00	
6/2/17	JPA	82	0.10	
6/3/17				
6/4/17				
6/5/17	JPA	8	0.00	Earthwork cut
6/6/17	JPA	78	0.00	
6/7/17	JPA	78	0.00	
6/8/17	JPA	80	0.00	
6/9/17	JPA	79	0.00	
6/10/17				
6/11/17				
6/12/17	JPA	80	0.00	Grading and cut cell and pond area
6/13/17	JPA	80	0.00	
6/14/17	JPA	80	0.00	
6/15/17	JPA	80	0.00	
6/16/17	JPA	79	0.00	
6/17/17				
6/18/17				
6/19/17	JPA	80	0.00	Cut and grading cell and pond
6/20/17	JPA	81	0.00	
6/21/17	JPA	84	0.00	
6/22/17	JPA	84	0.00	
6/23/17	JPA	48	0.00	
6/24/17				
6/25/17				
6/26/17	JPA	80	0.20	Earthwork activities
6/27/17	JPA	80	0.00	
6/28/17	JPA	80	0.00	
6/29/17	JPA	79	0.00	
6/30/17	JPA	80	0.00	
7/1/17				
7/2/17				
7/3/17	JPA	8,281	0.20	Wet from 1" weekend rain
7/4/17	JPA	82	0.00	
7/5/17	JPA	82	0.00	
7/6/17	JPA	82	0.00	

# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
7/7/17	JPA	82	0.10	
7/8/17				
7/9/17				
7/10/17	JPA	80	1.50	Earthwork activities
7/11/17	JPA	81	0.10	
7/12/17	JPA	80	0.20	
7/13/17	JPA	80	0.10	
7/14/17	JPA	80	0.17	
7/15/17				
7/16/17				
7/17/17	JPA	8,182	0.10	Coordinate clay backfill
7/18/17	JPA	80	0.30	
7/19/17	JPA	80	0.00	Clay haul to cell and berms
7/20/17	JPA	80	0.00	
7/21/17	JPA	80	0.10	
7/22/17				
7/23/17				
7/24/17	JPA	83	0.25	Earthwork activities and clay backfill
7/25/17	JPA	83	0.25	
7/26/17	JPA	83	0.00	
7/27/17	JPA	84	0.00	
7/28/17	JPA	84	0.20	
7/29/17				
7/30/17				
7/31/17	JPA	78	0.50	Earthwork activities and clay backfill
8/1/17	JPA	76	2.00	
8/2/17	JPA	78	0.00	
8/3/17	JPA	78	0.50	
8/4/17	JPA	76	1.50	
8/5/17				
8/6/17				
8/7/17	JPA	84	0.30	Prepare hurricane Irma
8/8/17	JPA	83	0.10	same
8/9/17	JPA	84	0.00	same
8/10/17	JPA	84	0.00	same
8/11/17	JPA	84	0.00	same
8/12/17				



# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
8/13/17				
8/14/17	JPA	84	0.25	Evaluate rain. Wet conditions.
8/15/17	JPA	83	0.10	
8/16/17	JPA	83	0.00	
8/17/17	JPA	83	0.00	
8/18/17	JPA	83	0.10	
8/19/17				
8/20/17				
8/21/17	JPA	82	0.00	Earthwork activities and clay backfill
8/22/17	JPA	82	0.00	
8/23/17	JPA	82	0.00	
8/24/17	JPA	82	0.25	
8/25/17	JPA	83	0.00	
8/26/17				
8/27/17				
8/28/17	JPA	80	1.50	Earthwork activities and clay backfill
8/29/17	JPA	80	0.50	
8/30/17	JPA	80	0.30	
8/31/17	JPA	82	0.00	
9/1/17	JPA	82	0.25	
9/2/17				
9/3/17				
9/4/17	JPA	81	1.00	Earthwork activities and clay backfill
9/5/17	JPA	81	0.00	
9/6/17	JPA	81	0.00	
9/7/17	JPA	8	0.00	
9/8/17	JPA	82	0.30	
9/9/17				
9/10/17				
9/11/17	JPA	83	2.00	Earthwork activities and clay backfill
9/12/17	JPA	81	0.00	
9/13/17	JPA	83	0.00	
9/14/17	JPA	82	0.25	
9/15/17	JPA	82	0.11	
9/16/17				
9/17/17				
9/18/17	JPA	80	0.00	Earthwork activities and clay backfill

# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
9/19/17	JPA	80	0.00	
9/20/17	JPA	80	0.00	
9/21/17	JPA	80	0.00	
9/22/17	JPA	80	0.00	
9/23/17				
9/24/17				
9/25/17	JPA	80	0.00	Earthwork activities and clay backfill
9/26/17	JPA	81	0.00	
9/27/17	JPA	81	0.00	
9/28/17	JPA	81	0.00	
9/29/17	JPA	81	0.40	
9/30/17				
10/1/17				
10/2/17	JPA	76	0.00	Earthwork activities and clay backfill
10/3/17	JPA	76	0.30	
10/4/17	JPA	78	0.00	
10/5/17	JPA	78	0.10	
10/6/17	JPA	76	0.25	
10/7/17				
10/8/17				
10/9/17	JPA	78	0.35	Earthwork activities and clay backfill
10/10/17	JPA	78	0.10	
10/11/17	JPA	79	0.00	
10/12/17	JPA	80	0.00	
10/13/17	JPA	82	0.00	
10/14/17				
10/15/17				
10/16/17	JPA	74	0.00	Earthwork activities and clay backfill
10/17/17	JPA	74	0.15	
10/18/17	JPA	77	0.00	
10/19/17	JPA	78	0.00	
10/20/17	JPA	78	0.00	
10/21/17				
10/22/17				
10/23/17	JPA	71	1.00	Earthwork activities and clay backfill
10/24/17	JPA	71	0.10	
10/25/17	JPA	65	0.00	



# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
10/26/17	JPA	59	0.00	
10/27/17	JPA	62	0.00	
10/28/17				
10/29/17				
10/30/17	JPA	57	0.00	Earthwork activities and clay backfill
10/31/17	JPA	64	0.00	
11/1/17	JPA	68	0.00	
11/2/17	JPA	70	0.00	
11/3/17	JPA	70	0.00	
11/4/17				
11/5/17				
11/6/17	JPA	68	0.00	Earthwork activities and clay backfill
11/7/17	JPA	72	0.00	Universal Site Visit
11/8/17	JPA	70	0.00	
11/9/17	JPA	65	0.00	
11/10/17	JPA	68	0.00	
11/11/17				
11/12/17				
11/13/17	JPA	74	0.00	Earthwork activities and clay backfill
11/14/17	JPA	70	0.00	
11/15/17	JPA	64	0.00	
11/16/17	JPA	64	0.00	Universal Testing Soil Sample Collection
11/17/17	JPA	62	0.00	
11/18/17				
11/19/17				
11/20/17	JPA	60	0.00	Earthwork activities and clay backfill
11/21/17	JPA	66	0.00	
11/22/17	JPA	70	0.00	Universal Testing Soil Sample Collection
11/23/17	JPA	72	0.20	
11/24/17	JPA	63	0.20	
11/25/17				
11/26/17				
11/27/17	JPA	62	0.00	Earthwork activities and clay backfill
11/28/17	JPA	69	0.00	
11/29/17	JPA	72	0.00	
11/30/17	JPA	68	0.00	
12/1/17	JPA	66	0.00	

# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
12/2/17				
12/3/17				
12/4/17	JPA	66	0.00	Earthwork activities and clay backfill
12/5/17	JPA	66	0.00	
12/6/17	JPA	68	0.00	
12/7/17	JPA	70	0.00	
12/8/17	JPA	66	0.20	
12/9/17				
12/10/17				
12/11/17	JPA	46	0.00	Earthwork activities and clay backfill
12/12/17	JPA	54	0.00	
12/13/17	JPA	50	0.00	
12/14/17	JPA	55	0.00	
12/15/17	JPA	64	0.00	
12/16/17				
12/17/17				
12/18/17	JPA	70	0.00	Earthwork activities and clay backfill
12/19/17	JPA	68	0.00	
12/20/17	JPA	68	0.00	
12/21/17	JPA	70	0.00	
12/22/17	JPA	63	0.00	
12/23/17				
12/24/17				
12/25/17	JPA	66	0.10	Earthwork activities and clay backfill
12/26/17	JPA	63	0.00	
12/27/17	JPA	66	0.00	
12/28/17	JPA	65	0.00	
12/29/17	JPA	70	0.00	
12/30/17				
12/31/17				
1/1/18	JPA	48	0.00	Equipment - off road truck out
1/2/18	JPA	44	0.00	
1/3/18	JPA	46	0.00	
1/4/18	JPA	38	0.00	
1/5/18	JPA	41	0.00	
1/6/18				
1/7/18				



# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
1/8/18	JPA	69	0.00	Earthwork activities and clay backfill
1/9/18	JPA	69	0.50	
1/10/18	JPA	67	0.00	
1/11/18	JPA	66	0.00	
1/12/18	JPA	69	0.21	
1/13/18				
1/14/18				
1/15/18	JPA	63	0.00	No work
1/16/18	JPA	64	0.00	
1/17/18	JPA	66	0.00	
1/18/18	JPA	39	0.00	
1/19/18	JPA	48	0.00	
1/20/18				
1/21/18				
1/22/18	JPA	66	0.10	No work
1/23/18	JPA	56	0.00	
1/24/18	JPA	66	0.00	
1/25/18	JPA	66	0.00	
1/26/18	JPA	67	2.00	
1/27/18				
1/28/18				
1/29/18	JPA	62	0.00	No work
1/30/18	JPA	64	0.00	
1/31/18	JPA	65	0.00	
2/1/18	JPA	64	0.00	
2/2/18	JPA	64	0.50	
2/3/18				
2/4/18				
2/5/18	JPA	66	0.00	No work
2/6/18	JPA	68	0.00	
2/7/18	JPA	70	0.00	
2/8/18	JPA	72	0.00	
2/9/18	JPA	76	0.00	
2/10/18				
2/11/18				

# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
2/12/18	JPA	76	0.50	No work
2/13/18	JPA	73	0.00	
2/14/18	JPA	72	0.00	
2/15/18	JPA	72	0.00	
2/16/18	JPA	72	0.00	
2/17/18				
2/18/18				
2/19/18	JPA	77	0.00	Earthwork activities and clay backfill
2/20/18	JPA	78	0.10	
2/21/18	JPA	72	0.00	
2/22/18	JPA	74	0.00	
2/23/18	JPA	74	0.00	
2/24/18				
2/25/18				
2/26/18	JPA	72	0.00	Earthwork activities and clay backfill
2/27/18	JPA	72	0.00	
2/28/18	JPA	72	0.00	
3/1/18	JPA	60	0.00	
3/2/18	JPA	58	0.00	
3/3/18				
3/4/18				
3/5/18	JPA	51	0.00	Earthwork activities and clay backfill
3/6/18	JPA	52	0.00	
3/7/18	JPA	69	0.00	
3/8/18	JPA	60	0.11	
3/9/18	JPA	52	0.00	
3/10/18				
3/11/18				
3/12/18	JPA	53	0.10	Earthwork activities and clay backfill
3/13/18	JPA	62	0.00	
3/14/18	JPA	70	0.00	
3/15/18	JPA	59	0.00	
3/16/18	JPA	61	0.00	
3/17/18				



# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
3/18/18				
3/19/18	JPA	60	0.00	Earthwork activities and clay backfill
3/20/18	JPA	62	0.00	
3/21/18	JPA	63	0.00	
3/22/18	JPA	65	0.00	
3/23/18	JPA	68	0.00	
3/24/18				
3/25/18				
3/26/18	JPA	67	0.00	Earthwork activities and clay backfill
3/27/18	JPA	69	0.75	
3/28/18	JPA	74	0.25	
3/29/18	JPA	68	0.00	
3/30/18	JPA	74	0.00	
3/31/18				
4/1/18				
4/2/18	JPA	72	0.75	Earthwork activities and clay backfill
4/3/18	JPA	70	0.25	
4/4/18	JPA	72	0.00	
4/5/18	JPA	66	0.00	
4/6/18	JPA	68	0.00	
4/7/18				
4/8/18				
4/9/18	JPA	66	1.00	No work
4/10/18	JPA	70	3.50	
4/11/18	JPA	66	0.15	
4/12/18	JPA	65	0.00	
4/13/18	JPA	68	0.00	
4/14/18				
4/15/18				
4/16/18	JPA		0.00	Earthwork activities and clay backfill
4/17/18	JPA		0.00	
4/18/18	JPA		0.30	
4/19/18	JPA		0.20	
4/20/18	JPA		0.00	

# Enterprise Recycling and Disposal Facility

## Cell 16 Construction

### Daily Observation Reports

Client: Aneglo's Aggregate Materials, Ltd

Engineer of Record: John Arnold, P.E. (JPA)

Quality Assurance Testing Laboratory: Universal Engineering Sciences, Inc.

As-Built Engineering Survey: John Arnold, P.E.

Date	Resident Observer	Temp. (F)	Rainfall	Observations and Comments
4/21/18				
4/22/18				
4/23/18	JPA		0.00	Earthwork activities and clay backfill
4/24/18	JPA		0.00	
4/25/18	JPA		0.00	Universal Testing
4/26/18	JPA		0.00	
4/27/18	JPA		0.00	
4/28/18	JPA			
4/29/18	JPA			
4/30/18	JPA		0.00	Clay installation substantially complete
5/1/18	JPA		0.00	Pump Station Start Up
5/2/18	JPA		0.00	
5/3/18	JPA		0.00	
5/4/18	JPA		0.00	
5/5/18	JPA			
5/6/18	JPA			
5/7/18	JPA		0.25	
5/8/18	JPA		0.20	
5/9/18	JPA		0.00	
5/10/18	JPA		0.00	
5/11/18	JPA		0.00	Field Elevations
5/12/18	JPA			
5/13/18	JPA			





# R. H. Moore & Associates

Soil Stabilization & Erosion Control

P. O. Box 16549 | Tampa, Florida 33687  
Telephone: (800) 330-2333

## QUOTE

QUOTE DATE	12/22/17
QUOTE #	3134
QUOTED BY	Mike Nester

PROJECT	Landfill
BID DATE	
COMPANY	Angelos Recycled Materials 855 28th Street South St. Petersburg, FL 33712
ATTENTION	Nero

SHIP TO
Angelos Recycled Materials Dade City, FL

FREIGHT TERMS
Plus Freight
EST. DELIVERY TIME
Same Business Day ARO

ITEM	DESCRIPTION	QTY	U/M	UNIT PRICE	LINE TOTAL
2010-020	Mirafi 160N - nonwoven geotextile Roll size: 15' X 300' (500 SQYD) (Meets FDOT Type D-3)	2	rl	460.00	920.00
Freight	• Estimated freight to the Dade City, Florida jobsite based on a one-time shipment of the quantity listed via Ed Nunez Trucking.			125.00	125.00

MATERIAL PRICING DOES NOT INCLUDE SALES TAX

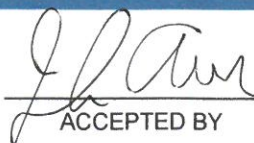
### NOTES:

- The above quantities are estimates only and final quantities are the responsibility of the purchaser
- All prices are valid for 30 days from the date of the quotation
- Changes in quantities will require creation of a new quote
- Terms: Net 30 Days (with an open account)
- Above pricing is for materials only
- Materials in stock may be picked up from our Tampa Warehouse location

Please call (800) 330-2333 or send an email to Sales@rhmooreassociates.com if you need more information, technical support or to place your order

PRICING IS FOR MATERIALS ONLY AND DOES NOT INCLUDE INSTALLATION

SUBTOTAL	\$1,045.00
TAX (7.0%)	\$64.40
ESTIMATED TOTAL	\$1,109.40

  
ACCEPTED BY

DATE

  
SIGNATURE

**Design Point**70 GPM @ 30 FT. TDH

5491 Benchmark Lane  
 Sanford, FL 32773  
 Ph: (407) 265-9963  
 Fx: (407) 265-9967

**START-UP REPORT****I. PROJECT INFORMATION - Completed by Installing Contractor**

JOB NAME: Angelo's Aggregate INSTALLING CONTRACTOR: John Arnold  
 ENGINEER: \_\_\_\_\_ START UP DATE & TIME: 5/1/18 @ 11am  
 LOCATION: 41111 Enterprise Rd. Dade City, FL 33525 John: 813-477-1719

**II. EQUIPMENT INFORMATION - Completed by Installing Contractor**

Pump Manufacturer: LIBERTY Model Number: FL63M-3 Wetwell Elevations Top: 92.00  
 Serial No. Pump 1: B78108ZMC Voltage & Phase: 230/3 Invert: Off:  
 FLA: 20 HP: 0.6 Bottom: 74.00 Lead:  
 HLA:

Control Panel (If used, Model, Mfr. Serial #, Type) SIM-092617-1 Basin Dim (LXW) \_\_\_\_\_  
 Float Switches (If pump not automatic, Mfr. Model) 40' Roto Float Installation Type: Prepackaged Rail System

**III. INSTALLER CHECKLIST - The following should be completed by installing contractor before start-up.**

<input checked="" type="checkbox"/>	Pit Clean
<input checked="" type="checkbox"/>	Pump Rotation Correct
<input checked="" type="checkbox"/>	Impeller Turns Freely
<input checked="" type="checkbox"/>	Panel securely installed
<input checked="" type="checkbox"/>	Short Circuit Prevention
<input checked="" type="checkbox"/>	Equipment in good condition
<input checked="" type="checkbox"/>	Check valve, discharge pipe, and vent installed
<input checked="" type="checkbox"/>	Neutral wire installed by electrician (not required 460v)

**IV. START-UP VERIFICATION LIST**

<input checked="" type="checkbox"/>	Circuit breakers operational
<input checked="" type="checkbox"/>	Pump submerged at least 2/3
<input checked="" type="checkbox"/>	<u>3</u> in. vent pipe installed
<input checked="" type="checkbox"/>	<u>2</u> in. discharge pipe installed
<input checked="" type="checkbox"/>	<u>25</u> ft. power supply cable length
<input checked="" type="checkbox"/>	check valve installed in correct location and direction

**V. ELECTRICAL READINGS****SINGLE PHASE: Pump #1**

Voltage Supply (Pump Off) L1-L2	
Voltage Supply (Pump On) L1-L2	
Amp Draw (Pump On) L1	
L2	

**THREE PHASE:**

Voltage Supply (Pump Off) L1-L2	211.0
L2-L3	212.0
L1-L3	212.0
Voltage Supply (Pump On) L1-L2	210.0
L2-L3	210.0
L1-L3	211.0
Amp Draw (Pump On) L1	6.0
L2	6.0
L3	6.0

**VI. PERFORMANCE TEST**

P1 86 GPM @ 15

FT. TDH \_\_\_\_\_

FT. TDH \_\_\_\_\_

Static Pressure: N/A

Panel Key \_\_\_\_\_

PUMP 1	
Pump Off:	199
Start/Pump On:	188
Pump Down / Inch:	11
Total GPM:	86
Pump On Pressure:	N/A

Engineer Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Contractor Signature: On FilePrint Name: John Arnold

Others: \_\_\_\_\_

Print Name: \_\_\_\_\_

*I certify this start-up report to be accurate*Tech: Nik Marku

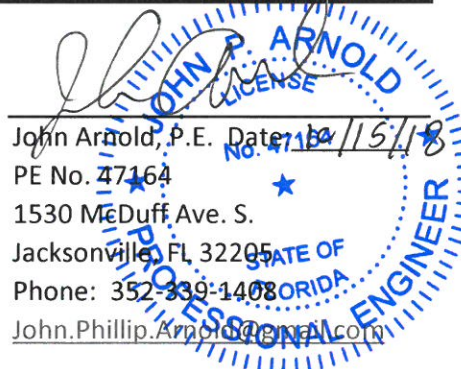
*John Arnold*  
 John Arnold g = 86gpm

Angelo's Aggregate Materials, Ltd  
Cell 16 Pump Station and Leachate Collection Pipe  
As-Built Elevations

	Design	As-Built		
Feature	EL	EL	Pass/Fail	Note
Leachate Pipe STM - 1	74.98	74.95	Pass	Leachate Pipe - Wetwell
Leachate Pipe STM - 2	76.12	76.11	Pass	Leachate Pipe - Cleanout
Wetwell IE 1	91.50	91.75	Pass	Top of Wetwell
Wetwell IE 2	91.00	91.50	Pass	Grade
Wetwell IE 3	91.00	91.50	Pass	Grade
Wetwell IE 4	88.50	88.45	Pass	Discharge Pipe
Wetwell IE 5	74.98	74.95	Pass	Invert Leachate Inflow
Wetwell IE 6	75.98	75.98	Pass	High Alarm
Wetwell IE 7	74.98	74.98	Pass	Pump On
Wetwell IE 8	74.17	74.17	Pass	Pump Off
Wetwell IE 9	73.67	73.67	Pass	Pump Off & LWL Alarm
Wetwell IE 10	72.00	71.97	Pass	Bottom Pump EL
Wetwell IE 11	70.50	70.47	Pass	Bottom Wetwell

Notes

- Elevations collected under direction of John Arnold, P.E. during construction of Cell 16 using ground control provided by Simmons and Beall, Inc. Network.
- Elevations are National Geodetic Vertical Datum of 1929.

  
 John Arnold, P.E. Date: 12/15/18  
 PE No. 47164  
 1530 McDuff Ave. S.  
 Jacksonville, FL 32205  
 Phone: 352-339-1408  
[John.Phillip.Arnold@gmail.com](mailto:John.Phillip.Arnold@gmail.com)



**Attachment D**

**Construction Quality Assurance Test Results  
Universal Engineering Science, Inc.**



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences  
Geophysical Services • Construction Materials Testing • Threshold Inspection  
Building Inspection • Plan Review • Building Code Administration

## LOCATIONS:

- Atlanta
- Daytona Beach
- Fort Myers
- Fort Pierce
- Gainesville
- Jacksonville
- Miami
- Ocala
- Orlando (Headquarters)
- Palm Coast
- Panama City
- Pensacola
- Rockledge
- Sarasota
- St. Petersburg
- Tampa
- Tifton
- West Palm Beach

October 11, 2018

### Angelo's Recycled Materials

41111 Enterprise Road  
Dade City, Florida 33525

Attention: John Arnold

Reference: John Arnold  
Enterprise Class III Landfill Cell 16  
Dade City, Florida  
UES Project No. 0810.1500214.0000

Mr. Arnold:

Pursuant to your request, please find attached all related testing reports for the Landfill Cell 16. This letter certifies reports for:

- **Proctor Report:** Page 1-11
- **Permeability Reports:** Pages 12-13
- **Site Density Reports:** Pages 14-16

We trust that these testing reports bound herein, are acceptable to your current needs. However, if you should require additional information please contact us.

We appreciate the opportunity to work with you on this project and look forward to a continued association with Angelo's Recycled Materials. Please do not hesitate to contact us if you should have any questions or if we may further assist you as your plans proceed.

Respectfully submitted,  
**UNIVERSAL ENGINEERING SCIENCES, INC.**  
Certificate of Authorization No. 00000549



Mark Hardy, P.E.  
Tampa Regional Manager  
Florida PE Registration Number 57233  
Date: 10/11/2018





Project Number: 810.1500214.00  
 Lab Sample No.: 18-P1364  
 Work Order No.: 81060

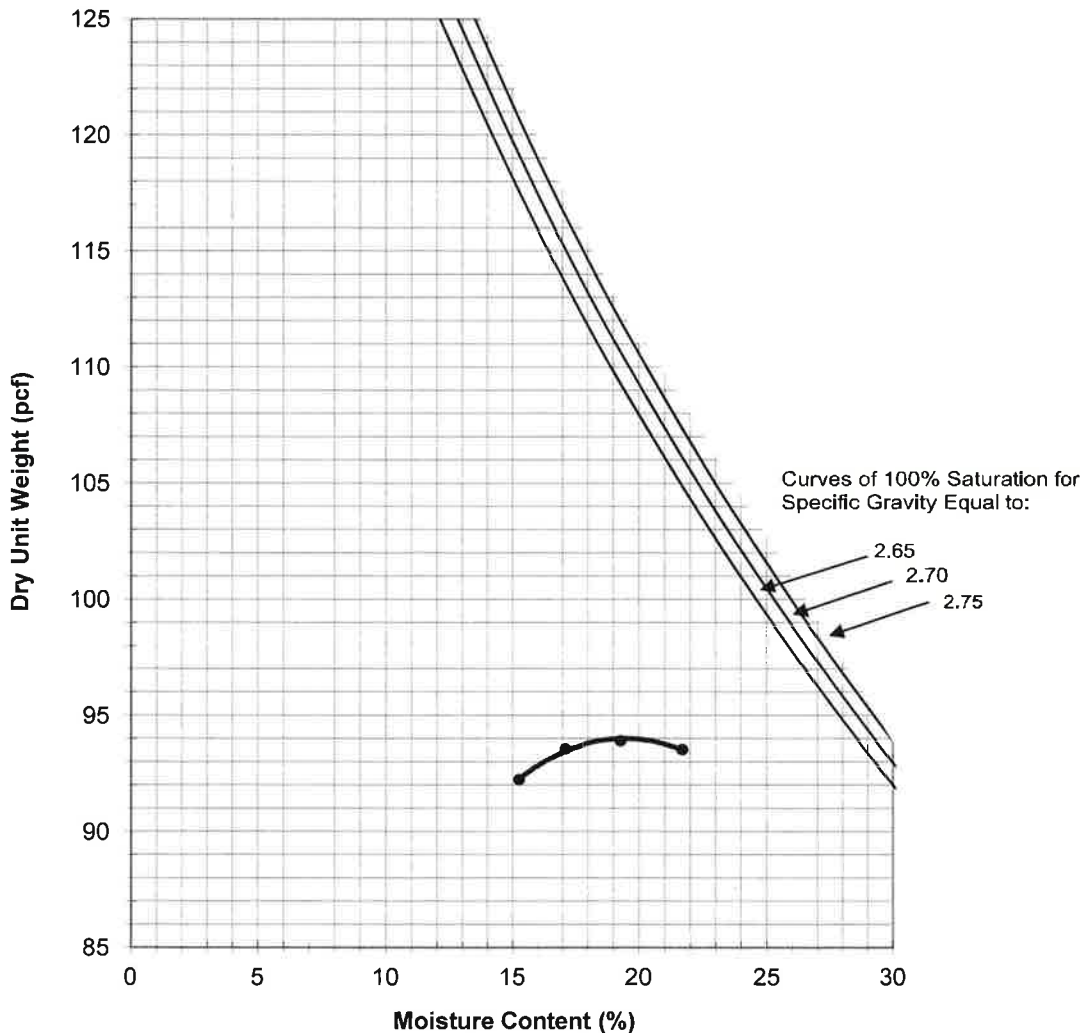
Client: Angelo's Materials  
 Project Name: Cell 16  
 Sample Location: Cell 16 Section 1 Lift 2  
 Intended Use: Other  
 Material Description: Clay  
 Sampled By: MA  
 Date Sampled: April 24, 2018

Area Covered: N/A  
 Date Plotted: August 3, 2018  
 Tested By: ECV  
 Date Tested: August 2, 2018

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 94.0**  
**Optimum Moisture, %: 19.5**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 53.7

AASHTO T-89 (LL): N/A  
 AASHTO T-90 (PI): N/A  
 AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.



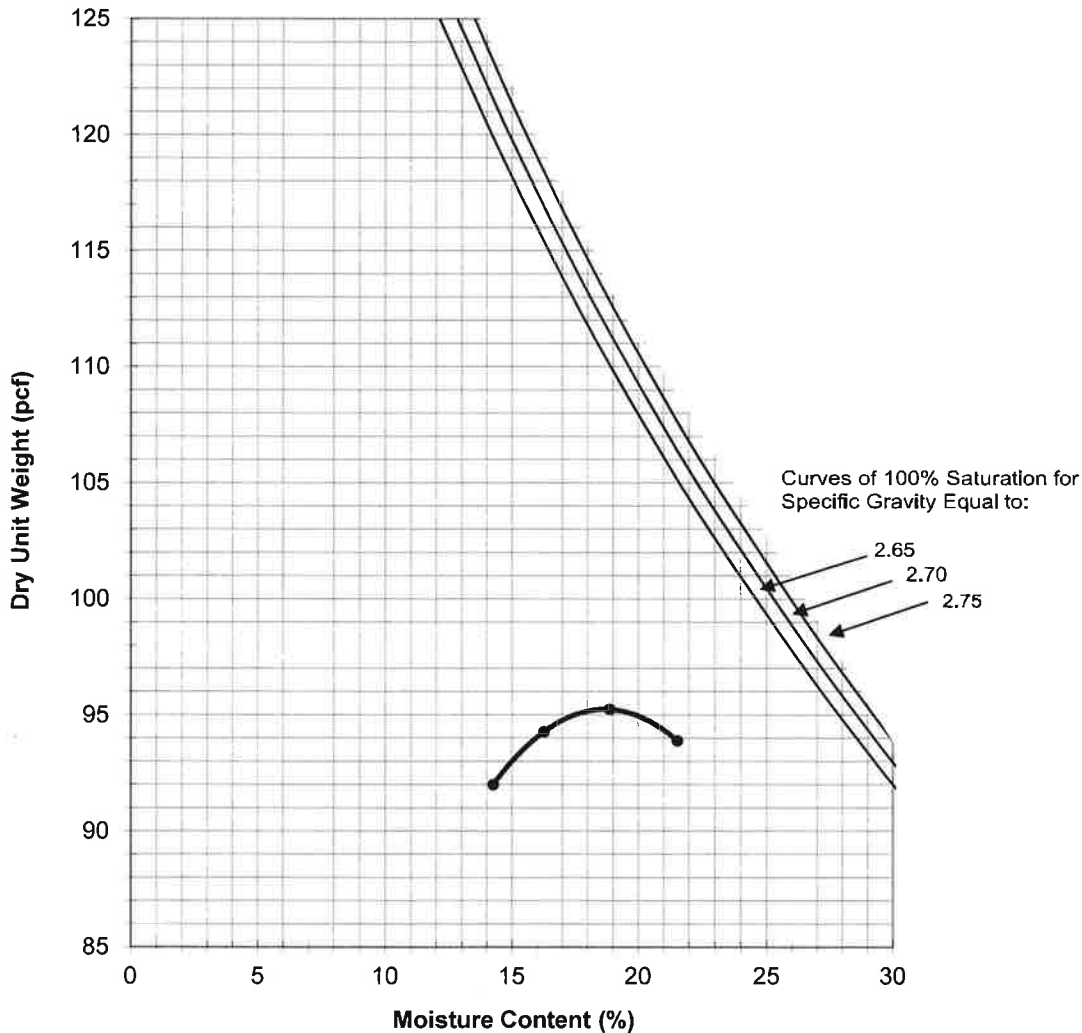
Project Number: 810.1500214.00  
 Lab Sample No.: 18-P1297  
 Work Order No.: 81060

Client:	Angelo's Materials	
Project Name:	Cell 16	
Sample Location:	Cell 16 Section 1 Lift 2-2	Area Covered: N/A
Intended Use:	Other	
Material Description:	Clay	Date Plotted: July 23, 2018
Sampled By:	MA	Tested By: ECV
Date Sampled:	April 24, 2018	Date Tested: July 20, 2018

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 95.3**  
**Optimum Moisture, %: 18.7**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 52.3

AASHTO T-89 (LL): N/A  
 AASHTO T-90 (PI): N/A  
 AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.





Project Number: 0810-1500214

Lab Sample No.: 17-P1941

Work Order No.: 75966

Client:	Angelos Materials Enterprises	
Project Name:	Angelos Materials Enterprises	
Sample Location:	Cell 16 # 5 Lift 1 Section 3-1	Area Covered: N/A
Intended Use:	Other	
Material Description:	Clay	Date Plotted: January 2, 2018
Sampled By:	N/A	Tested By: ECV
Date Sampled:	November 16, 2017	Date Tested: December 29, 2017

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A

**Maximum Dry Density, pcf: 101.2****Optimum Moisture, %: 19.7**

Passing 3.5" Sieve, %: 100

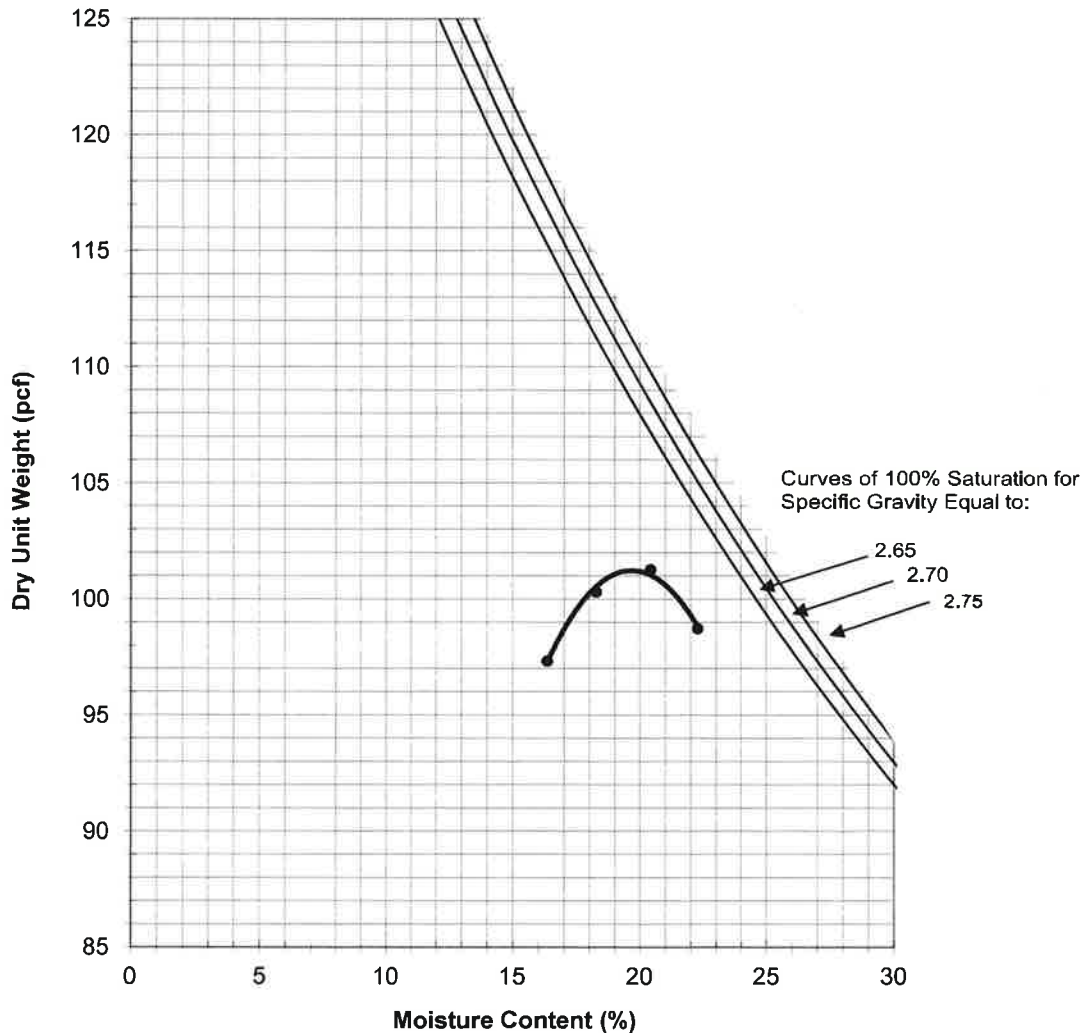
Passing No. 4 Sieve, %: 100

Passing No. 200 Sieve, %: 49.3

AASHTO T-89 (LL): N/A

AASHTO T-90 (PI): N/A

AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.



Project Number: 0810-1500214  
 Lab Sample No.: 18-P0019  
 Work Order No.: 76095

Client: Angelos Enterprises  
 Project Name: Angelos Enterprises  
 Sample Location: Cell 16 Lift 3 Section 1  
 Intended Use: Other  
 Material Description: Clay  
 Sampled By: N/A  
 Date Sampled: November 22, 2017

Area Covered: N/A  
 Date Plotted: January 5, 2018  
 Tested By: ECV  
 Date Tested: January 4, 2018

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A

**Maximum Dry Density, pcf: 96.0**

**Optimum Moisture, %: 22.8**

Passing 3.5" Sieve, %: 100

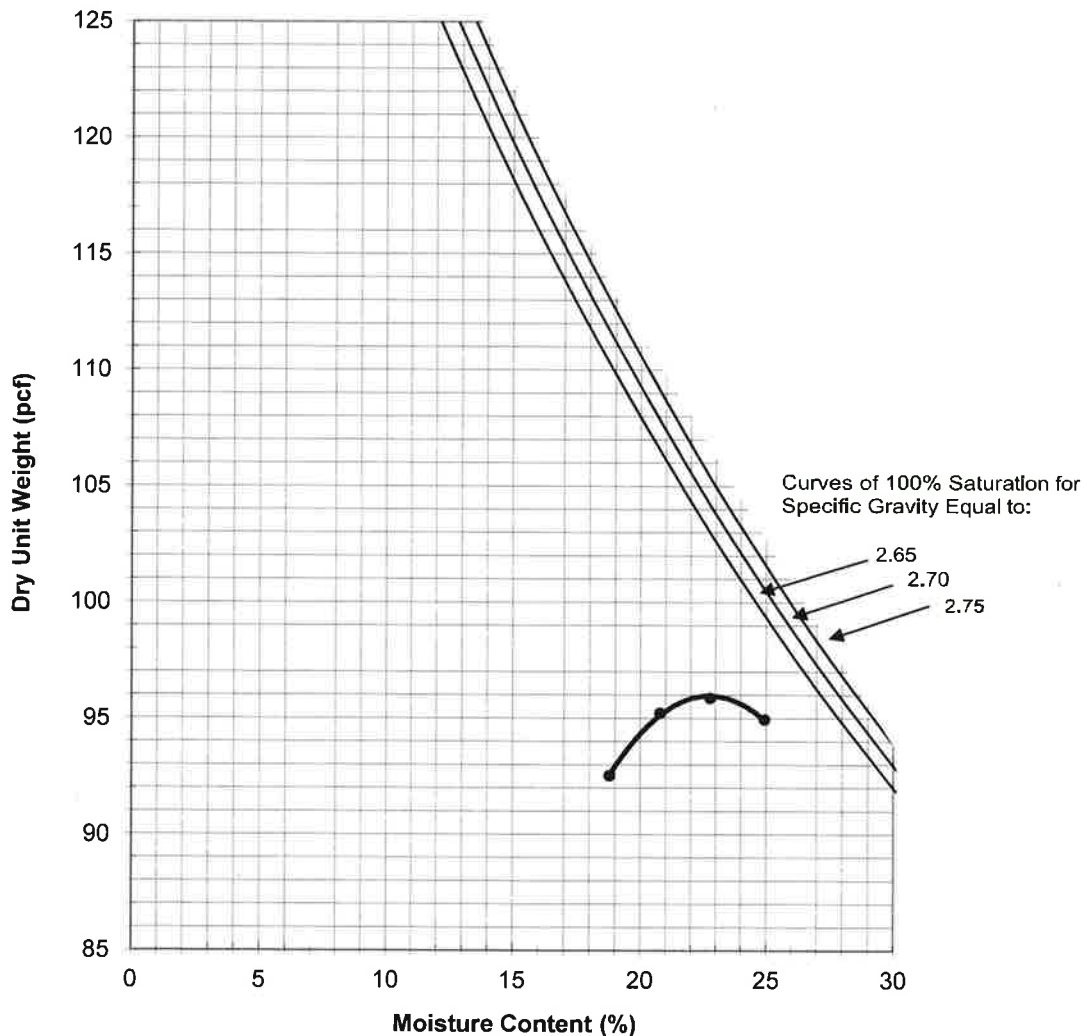
Passing No. 4 Sieve, %: 100

Passing No. 200 Sieve, %: 51.2

AASHTO T-89 (LL): N/A

AASHTO T-90 (PI): N/A

AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.





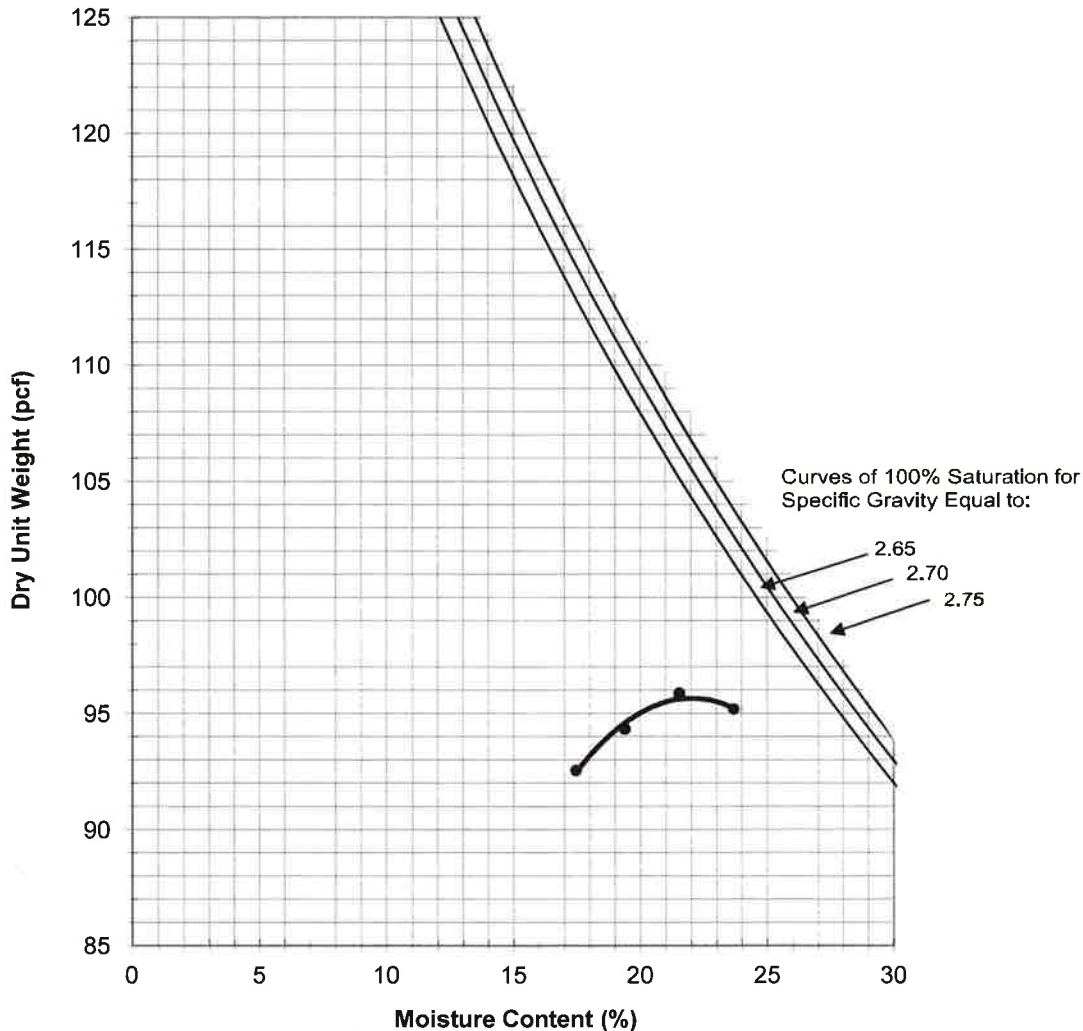
Project Number: 0810-1500214  
 Lab Sample No.: 18-P0028  
 Work Order No.: 76095

Client:	Angelos Enterprises	
Project Name:	Angelos Enterprises	
Sample Location:	Cell 16 Lift 1 Section 1-2	Area Covered: N/A
Intended Use:	Other	
Material Description:	Clay	Date Plotted: January 9, 2018
Sampled By:	N/A	Tested By: ECV
Date Sampled:	November 22, 2017	Date Tested: January 8, 2018

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 95.7**  
**Optimum Moisture, %: 22.0**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 51.9

AASHTO T-89 (LL): 47  
 AASHTO T-90 (PI): 41  
 AASHTO M-145 (Class.): A-7-5



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.



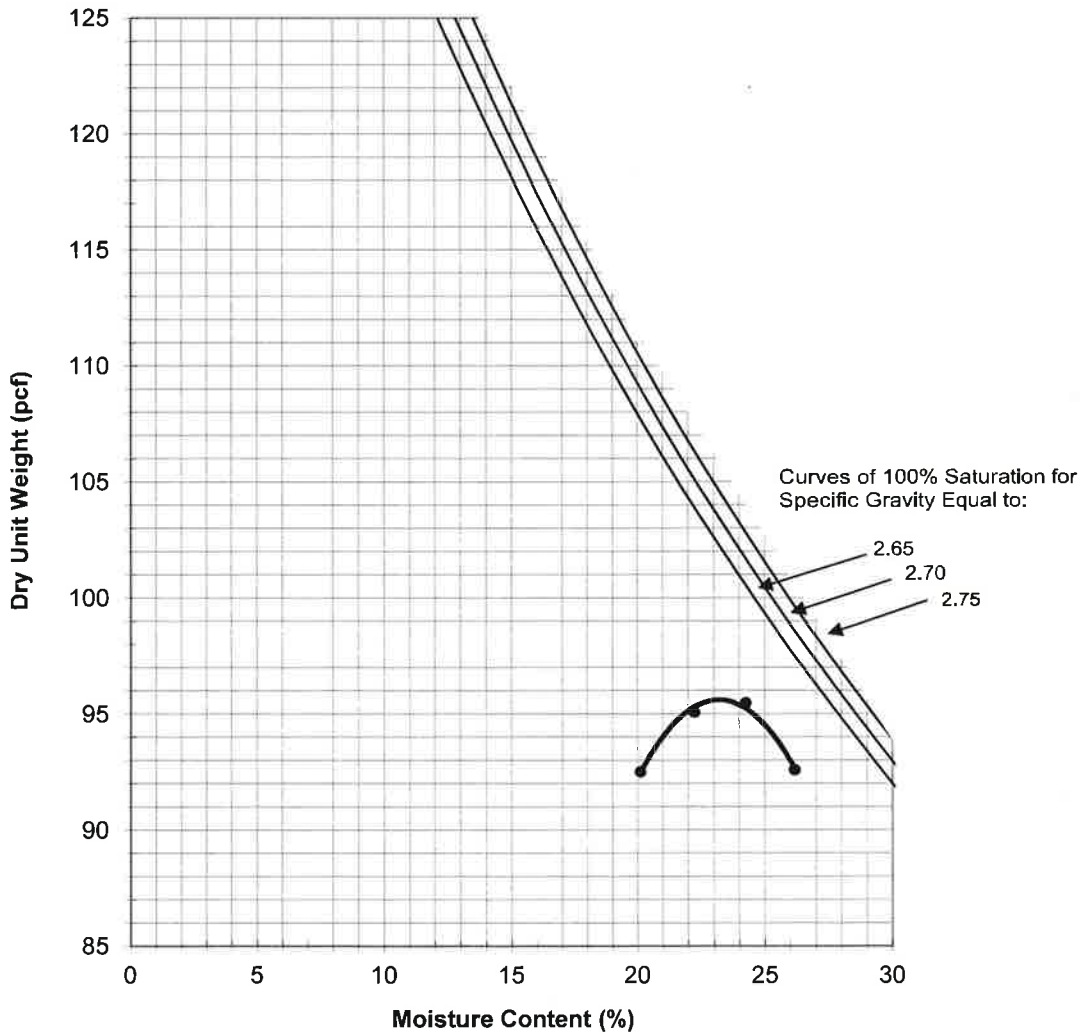
Project Number: 0810-1500214  
 Lab Sample No.: 17-P1893  
 Work Order No.: 76095

Client:	Angelos Enterprises	
Project Name:	Angelos Enterprises	
Sample Location:	Cell 16 Lift 2-2 Section 2	Area Covered: N/A
Intended Use:	Other	
Material Description:	Clay	Date Plotted: December 21, 2017
Sampled By:	N/A	Tested By: ECV
Date Sampled:	November 22, 2017	Date Tested: December 20, 2017

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 95.6**  
**Optimum Moisture, %: 23.2**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 54.2

AASHTO T-89 (LL): N/A  
 AASHTO T-90 (PI): N/A  
 AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.





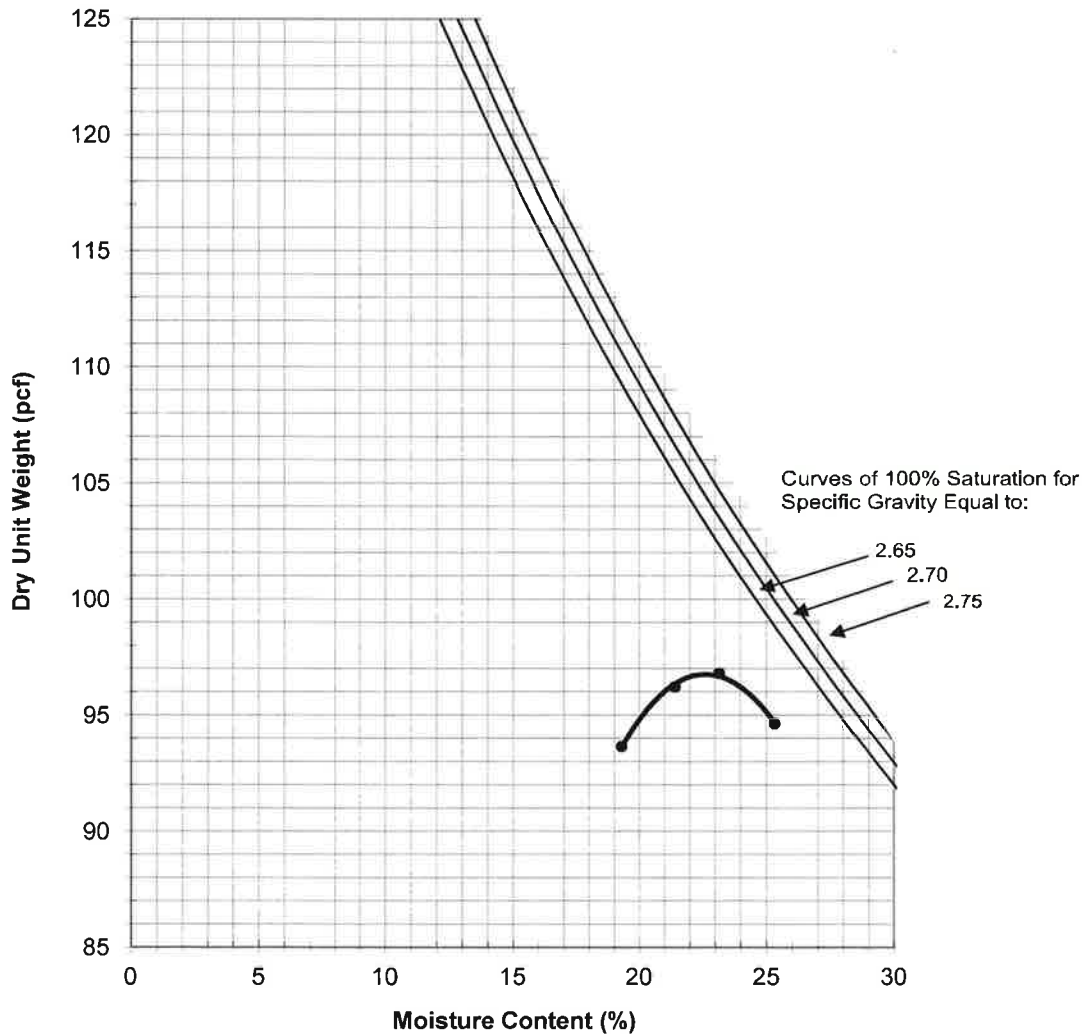
Project Number: 0810-1500214  
 Lab Sample No.: 17-P1870  
 Work Order No.: N/A

Client:	Angelos Enterprises	
Project Name:	Angelos Enterprises	
Sample Location:	Cell 16 Lift 3 Section 2-2	Area Covered: N/A
Intended Use:	Other	
Material Description:	Clay	Date Plotted: December 18, 2017
Sampled By:	MA	Tested By: ECV
Date Sampled:	November 22, 2017	Date Tested: December 15, 2017

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 96.8**  
**Optimum Moisture, %: 22.6**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 58.2

AASHTO T-89 (LL): N/A  
 AASHTO T-90 (PI): N/A  
 AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.



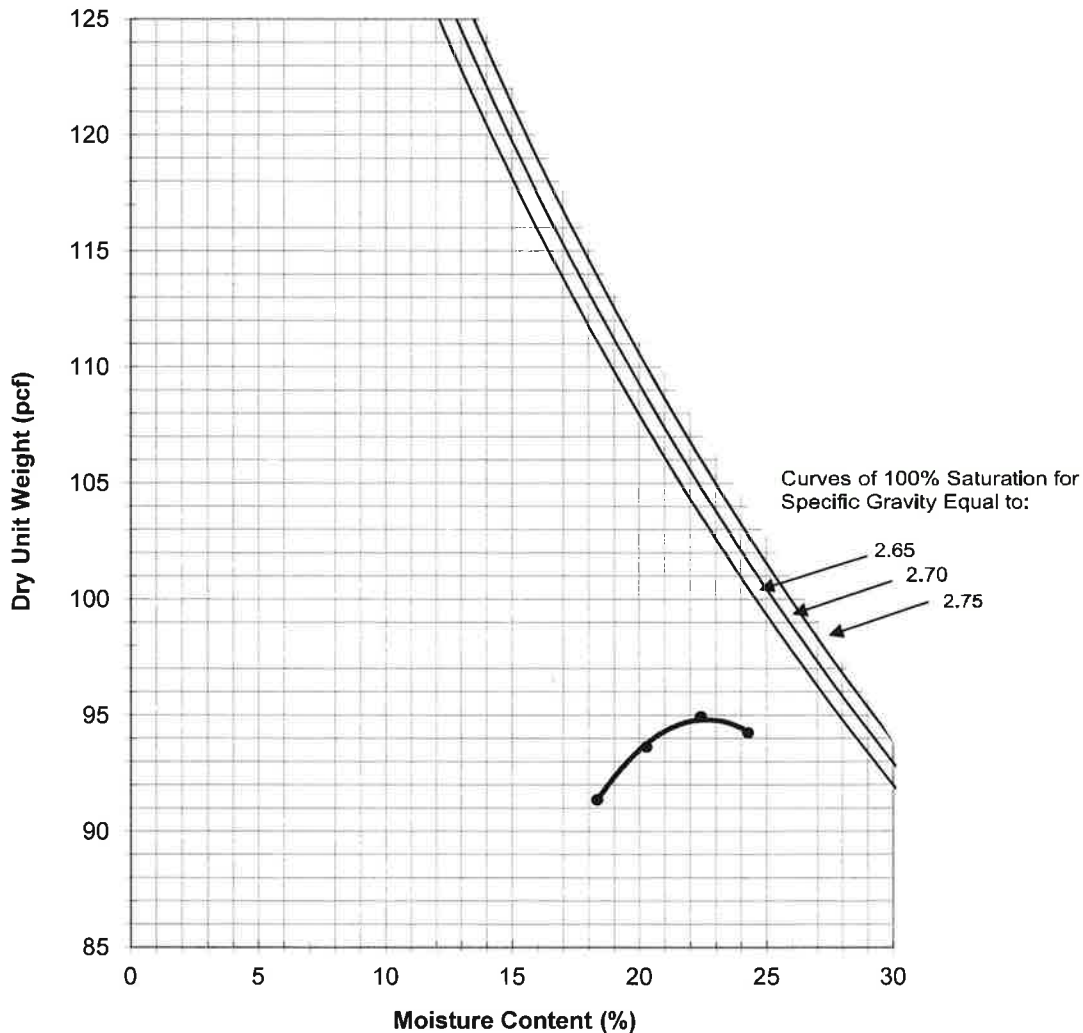
Project Number: 0810-1500214  
 Lab Sample No.: 18-P0007  
 Work Order No.: 76095

Client:	Angelos Enterprises	
Project Name:	Angelos Enterprises	
Sample Location:	Cell 16 Lift 2-2 Section 2	Area Covered: N/A
Intended Use:	Other	
Material Description:	Clay	Date Plotted: January 4, 2018
Sampled By:	N/A	Tested By: ECV
Date Sampled:	November 22, 2017	Date Tested: January 3, 2018

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 94.8**  
**Optimum Moisture, %: 22.6**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 57.4

AASHTO T-89 (LL): N/A  
 AASHTO T-90 (PI): N/A  
 AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.





Project Number: 0810-1500214  
 Lab Sample No.: 17-P1869  
 Work Order No.: N/A

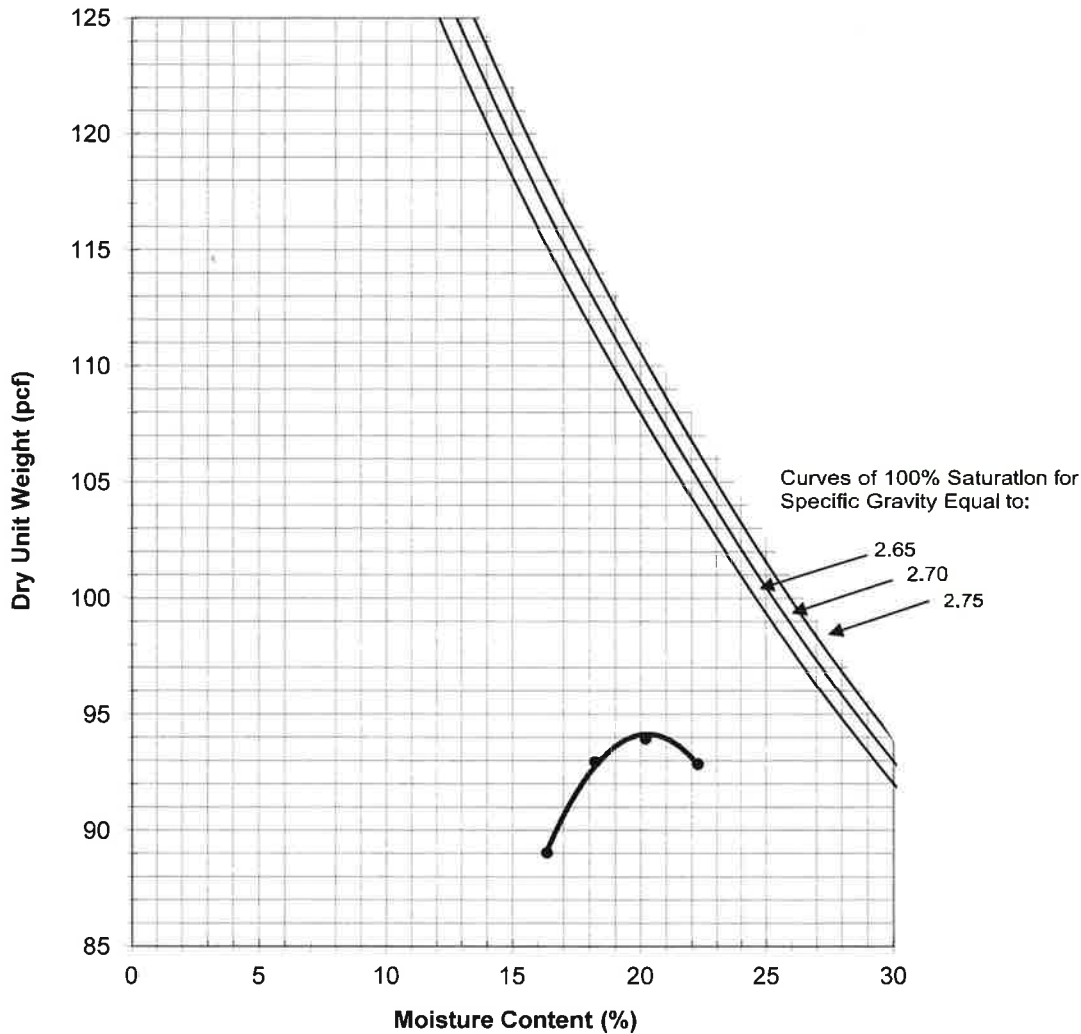
Client: Angelos Enterprises  
 Project Name: Angelos Enterprises  
 Sample Location: Cell 16 Lift 1 Section 2  
 Intended Use: Other  
 Material Description: Clay  
 Sampled By: MA  
 Date Sampled: November 22, 2017

Area Covered: N/A  
 Date Plotted: December 18, 2017  
 Tested By: ECV  
 Date Tested: December 15, 2017

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 94.2**  
**Optimum Moisture, %: 20.3**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 52.7

AASHTO T-89 (LL): N/A  
 AASHTO T-90 (PI): N/A  
 AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.



Project Number: 810.1500214.00  
 Lab Sample No.: 18-P1403  
 Work Order No.: 81060

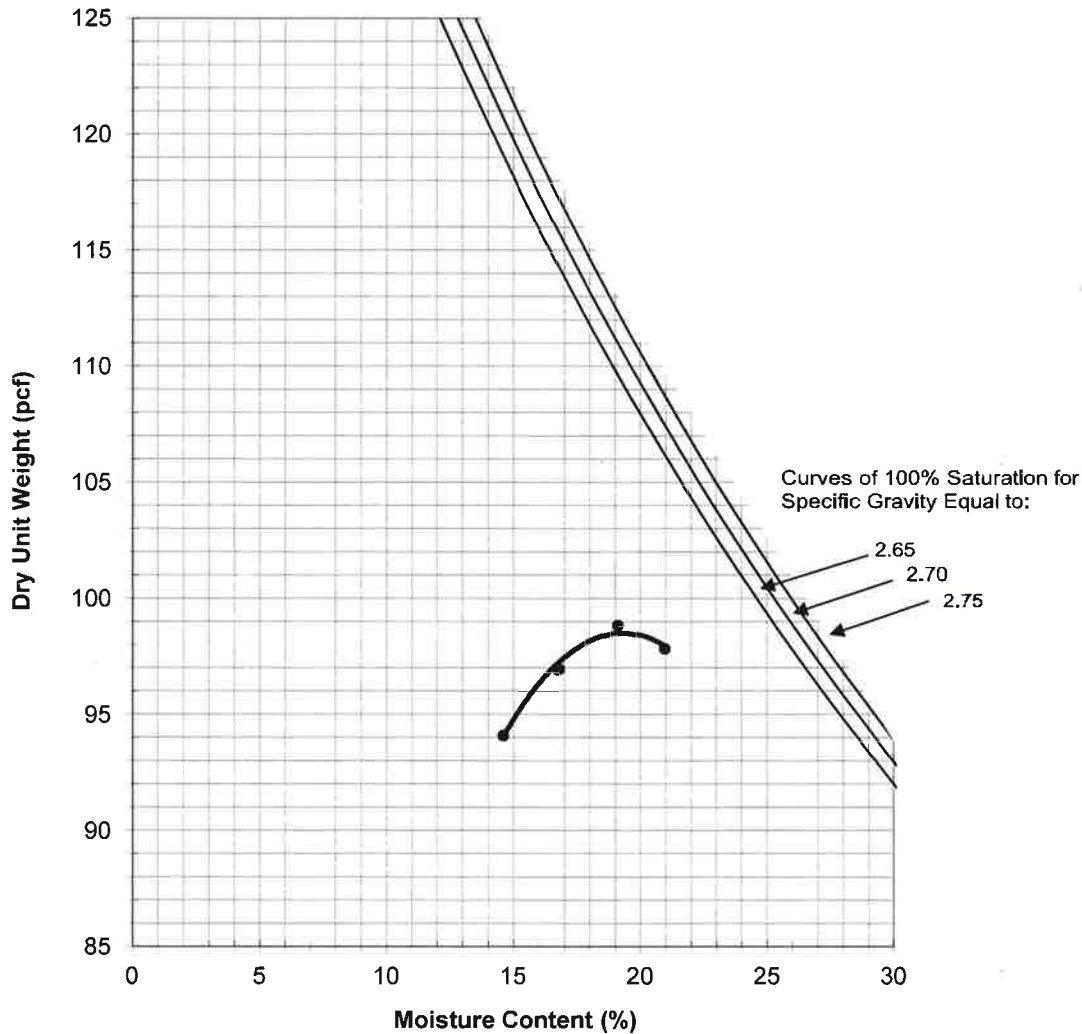
Client: Angelo's Materials  
 Project Name: Cell 16  
 Sample Location: Cell 16 Lift 3 Location 3-1  
 Intended Use: Other  
 Material Description: Clay  
 Sampled By: MA  
 Date Sampled: April 24, 2018

Area Covered: N/A  
 Date Plotted: August 9, 2018  
 Tested By: ECV  
 Date Tested: August 8, 2018

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 98.5**  
**Optimum Moisture, %: 19.3**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 54.3

AASHTO T-89 (LL): N/A  
 AASHTO T-90 (PI): N/A  
 AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.





Project Number: 810.1500214.00  
 Lab Sample No.: 18-P1364  
 Work Order No.: 81060

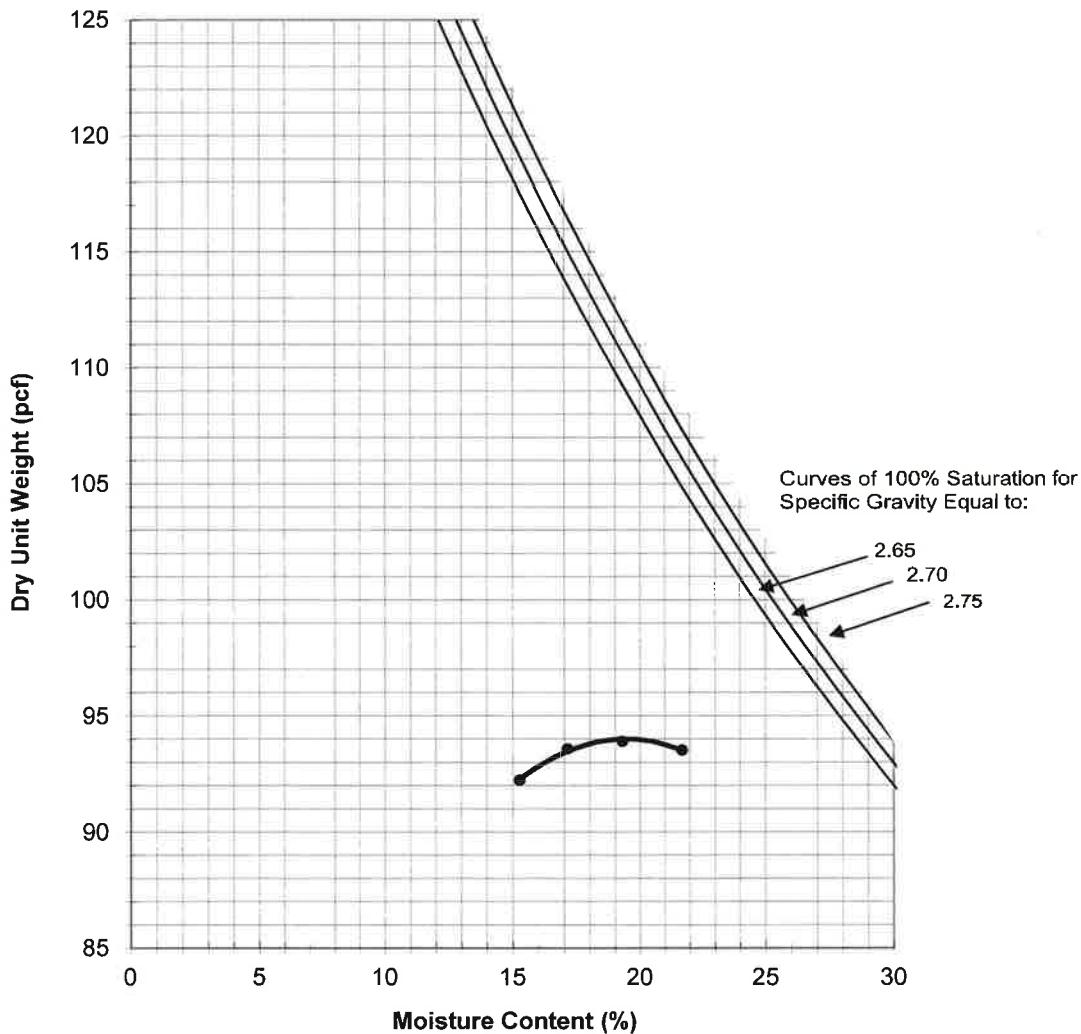
Client: Angelo's Materials  
 Project Name: Cell 16  
 Sample Location: Cell 16 Section 1 Lift 2-1  
 Intended Use: Other  
 Material Description: Clay  
 Sampled By: MA  
 Date Sampled: April 24, 2018

Area Covered: N/A  
 Date Plotted: August 3, 2018  
 Tested By: ECV  
 Date Tested: August 2, 2018

### SUMMARY OF TEST RESULTS

Test Method: AASHTO T-99 Method A  
**Maximum Dry Density, pcf: 94.0**  
**Optimum Moisture, %: 19.5**  
 Passing 3.5" Sieve, %: 100  
 Passing No. 4 Sieve, %: 100  
 Passing No. 200 Sieve, %: 53.7

AASHTO T-89 (LL): N/A  
 AASHTO T-90 (PI): N/A  
 AASHTO M-145 (Class.): N/A



Sampled according to AASHTO T 002. Proctor plotted by software package.

This report shall not be reproduced, except in full, without the written approval of Universal Engineering Sciences, Inc.

Consultants In: Geotechnical Engineering • Environmental Sciences  
Geophysical Services • Construction Materials Testing • Threshold Inspection  
Building Inspection • Plan Review • Building Code Administration

- Atlanta
- Daytona Beach
- Fort Myers
- Fort Pierce
- Gainesville
- Jacksonville
- Miami
- Ocala
- Orlando (Headquarters)
- Palm Coast
- Panama City
- Pensacola
- Rockledge
- Sarasota
- Tampa
- Tifton

**Client:** Angelo's Materials's

**Project:** Enterprise Class 3 Cell 16

## REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE (ASTM D-5084 and ASTM C-117) (AASHTO T-11)

Date Tested: 5/22/2018      Tested By: DL  
Date Sampled: 11/22/2017      Sampled By: MA

[illegible]





# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences  
Geophysical Services • Construction Materials Testing • Threshold Inspection  
Building Inspection • Plan Review • Building Code Administration

## LOCATIONS:

- Atlanta
- Daytona Beach
- Fort Myers
- Fort Pierce
- Gainesville
- Jacksonville
- Miami
- Ocala
- Orlando (Headquarters)
- Palm Coast
- Panama City
- Pensacola
- Rockledge
- Sarasota
- Tampa
- Tifton

Client: Angelo's Materials's

Project: Enterprise Class 3 Cell 16

## REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE (ASTM D-5084 and ASTM C-117) (AASHTO T-11)

Date Tested: 5/23/17-8/10/18 Tested By: DL  
Date Sampled: 11/7/2017-4/24/2018 Sampled By: MA

Sample Location	Percent Passing No. 200 Sieve	Sample Ran At:		Permeability:	
		Moisture Content (%)	Dry Unit Weight (pcf)	K (cm/s)	K (ft/d)
Section 1 L1 A	57.00	20.50	98.10	$1.41 \times 10^{-8}$	$3.99 \times 10^{-5}$
Section 1 L1 B	51.90	22.00	95.70	$6.01 \times 10^{-9}$	$1.70 \times 10^{-5}$
Section 1 L2 A	53.70	19.50	94.00	$6.05 \times 10^{-9}$	$1.72 \times 10^{-5}$
Section 1 L2 B	52.30	18.70	95.30	$3.36 \times 10^{-9}$	$9.52 \times 10^{-6}$
Section 1 L3 A	49.30	19.70	101.20	$2.24 \times 10^{-9}$	$6.35 \times 10^{-6}$
Section 1 L3 B	51.20	22.80	96.00	$2.47 \times 10^{-9}$	$7.00 \times 10^{-6}$
Section 2 L1 A	54.30	20.00	94.00	$5.2 \times 10^{-9}$	$1.47 \times 10^{-5}$
Section 2 L1 B	52.70	20.30	94.20	$2.06 \times 10^{-9}$	$5.84 \times 10^{-6}$
Section 2 L2 A	57.40	22.60	94.80	$1.85 \times 10^{-9}$	$5.24 \times 10^{-6}$
Section 2 L2 B	54.20	23.20	95.60	$1.63 \times 10^{-9}$	$4.62 \times 10^{-6}$
Section 2 L3 A	49.90	18.50	98.50	$2.22 \times 10^{-9}$	$6.29 \times 10^{-6}$
Section 2 L3 B	58.20	22.60	96.80	$2.73 \times 10^{-9}$	$7.74 \times 10^{-6}$
Section 3 L1 A	53.10	18.00	99.90	$4.43 \times 10^{-9}$	$1.26 \times 10^{-5}$
Section 3 L1 B	55.20	22.00	94.30	$2.6 \times 10^{-9}$	$7.37 \times 10^{-6}$
Section 3 L2 A	49.80	19.00	97.10	$2.28 \times 10^{-9}$	$6.46 \times 10^{-6}$
Section 3 L2 B	53.40	22.00	93.80	$5.37 \times 10^{-9}$	$1.52 \times 10^{-5}$
Section 3 L3 A	55.60	24.00	94.00	$5.02 \times 10^{-9}$	$1.42 \times 10^{-5}$
Section 3 L3 B	54.30	19.30	98.50	$3.51 \times 10^{-9}$	$9.95 \times 10^{-6}$



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences  
Geophysical Services • Materials Testing • Threshold Inspection  
Building Code Administration, Compliance Inspection & Plan Review

9802 Palm River Road, Tampa, FL 33619 - P: 813.740.8506 - F: 813.740.8706

UES Project No: 0810.1500214.0000

Workorder No: 81060-1

Report Date: 07/12/2018

## In-Place Density Test Report

**Client:** Angelo's Materials  
41111 Enterprise Road  
Dade City, FL 33525

**UES Technician:** Mario Arroyo

**Date Tested:** 4/24/2018

**Project:** Enterprise Class III Landfill Cell 6  
Pasco County, FL

**Area Tested:** Section 1 -3

**Material:** Fill

**Reference Datum:** 0 = Top of Fill

### Type of Test:

**Field:** ASTM D-2937 Drive Cylinder Method

**Laboratory:** ASTM D1557 Modified Proctor

The tests below meet the 95% minimum compaction requirement.

Test No.	Location of Test	Range	Maximum Density (pcf)	Optimum Moisture (%)	Field Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)	Pass or Fail
1	Section 1 Lift 1 A	6 inch	98.1	21.0	96.4	17.8	98	Pass
2	Section 1 Lift 2 A	6 inch	95.7	22.0	93.6	16.4	98	Pass
3	Section 1 Lift 3 A	6 inch	94.0	20.0	95.1	18.1	101	Pass
4	Section 2 Lift 1 A	6 inch	95.3	19.0	92.6	18.9	97	Pass
5	Section 2 Lift 2 A	6 inch	95.6	23.0	92.5	19.6	97	Pass
6	Section 2 Lift 3 A	6 inch	96.8	23.0	92.7	20.5	96	Pass
7	Section 3 Lift 1 A	6 inch	99.9	18.0	95.8	17.1	96	Pass
8	Section 3 Lift 2 A	6 inch	97.1	19.0	92.1	19.5	95	Pass
9	Section 3 Lift 3 A	6 inch	98.5	19.0	97.2	16.4	99	Pass

*To establish a mutual protection to Universal's clients, the Public and ourselves, all reports are submitted as confidential property of our clients and authorization for publication of statements, conclusions or extracts from or regarding Universal's reports is reserved pending our written approval.*





# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences  
Geophysical Services • Materials Testing • Threshold Inspection  
Building Code Administration, Compliance Inspection & Plan Review

9802 Palm River Road, Tampa, FL 33619 - P: 813.740.8506 - F: 813.740.8706

UES Project No: 0810.1500214.0000

Workorder No: 81060-2

Report Date: 07/12/2018

## In-Place Density Test Report

**Client:** Angelo's Materials  
41111 Enterprise Road  
Dade City, FL 33525

**UES Technician:** Mario Arroyo

**Date Tested:** 04/24/2018

**Project:** Enterprise Class III Landfill Cell 6  
Pasco County, FL

### Type of Test:

**Field:** ASTM D-2937 Drive Cylinder Method

**Laboratory:** ASTM D1557 Modified Proctor

**Area Tested:** Section 1-3 B

**Material:** Clay

**Reference Datum:** 0 = Top of Fill

The tests below meet the 95% minimum compaction requirement.

Test No.	Location of Test	Range	Maximum Density (pcf)	Optimum Moisture (%)	Field Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)	Pass or Fail
10	Section 1 Lift 1 B	6 inch	95.7	20.5	93.1	17.3	97	Pass
11	Section 1 Lift 2 B	6 inch	95.3	18.7	91.4	16.5	96	Pass
12	Section 1 Lift 3 B	6 inch	96.0	22.8	94.2	17.9	98	Pass
13	Section 2 Lift 1 B	6 inch	94.2	20.3	92.4	18.1	98	Pass
14	Section 2 Lift 2 B	6 inch	95.6	23.2	95.1	19.9	99	Pass
15	Section 2 Lift 3 B	6 inch	96.8	22.6	91.7	18.7	95	Pass
16	Section 3 Lift 1 B	6 inch	94.3	22.0	92.6	18.4	98	Pass
17	Section 3 Lift 2 B	6 inch	93.8	22.0	91.1	18.1	97	Pass
18	Section 3 Lift 3 B	6 inch	98.5	19.3	97.3	16.2	99	Pass

*To establish a mutual protection to Universal's clients, the Public and ourselves, all reports are submitted as confidential property of our clients and authorization for publication of statements, conclusions or extracts from or regarding Universal's reports is reserved pending our written approval.*



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences  
Geophysical Services • Materials Testing • Threshold Inspection  
Building Code Administration, Compliance Inspection & Plan Review

9802 Palm River Road, Tampa, FL 33619 - P: 813.740.8506 - F: 813.740.8706

UES Project No: 0810.1500214.0000

Workorder No: 81060-3

Report Date: 07/12/2018

## In-Place Density Test Report

**Client:** Angelo's Materials  
41111 Enterprise Road  
Dade City, FL 33525

**UES Technician:** Mario Arroyo

**Date Tested:** 04/24/2018

**Project:** Enterprise Class III Landfill Cell 6  
Pasco County, FL

**Area Tested:** Header and Berm

**Material:** Clay

**Reference Datum:** 0 = Top of Fill

### Type of Test:

**Field:** ASTM D-2937 Drive Cylinder Method

**Laboratory:** ASTM D1557 Modified Proctor

The tests below meet the 95% minimum compaction requirement.

Test No.	Location of Test	Range	Maximum Density (pcf)	Optimum Moisture (%)	Field Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)	Pass or Fail
19	Header trench	6 inch	97.2	23.0	94.4	18.9	97	Pass
20	Berm	6 inch	99.6	23.0	95.7	19.1	96	Pass