BRANTLEY ENGINEERING, LLC

September 3, 2015

Mr. F. Thomas Lubozynski, P.E.
Environmental Administrator
Florida Department of Environmental Protection (FDEP), Central District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

Subject: **Final Certification Report for**
Cell 11 Construction and Quality Certification Report
JED Solid Waste Management Facility (WACS #89544)
St. Cloud, Osceola County, Florida
FDEP Permit No. SC49-0199726-017

Dear Mr. Lubozynski:

Brantley Engineering, LLC is writing to provide documentation and certification of the Cell 11 Construction project for the JED Solid Waste Management Facility (JED facility) located in Osceola County, Florida.

Based on our monitoring of the construction and installation activities involved with this project and the field and laboratory testing conducted throughout the project, it is our professional opinion that the Cell 11 Construction project was performed in general accordance to the project requirements and according to the design drawings and technical specifications. This certification report summarized the Construction and Quality Assurance (CQA) activities performed by Brantley Engineering, LLC during construction of the Cell 11 Disposal Area at the JED facility. The CQA activities were performed to confirm that the construction materials and procedures were in compliance with the Construction Permit No. SC-49-0199726-017 issued by the Florida Department of Environmental Protection (FDEP), Central District and in accordance with Chapter 62-701, Solid Waste Management Facilities, Florida Administrative Code (FAC).

This report has been uploaded to the FDEP FTP/website in its entirety. FDEP form #62-701.900(2) titled *Certification of Construction Completion of a Solid Waste Management Facility,* duly completed and signed, has also been uploaded to the FDEP FTP/website.

If you have any questions or need additional information regarding this certification, please contact me at (678)-427-2533 or Mr. Mike Kaiser with Progressive Waste Solutions at (904)-673-0446.

Sincerely,
Brantley Engineering, LLC

ALLAN S. BRANTLEY LICENSE No 68030 STATE OF FLORIDA PROFESSIONAL ENGINEER
ASB 9-3-15

Allan S. Brantley, Florida PE#68030
President

Cc: Mike Kaiser – PWS
Attachments

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Reset Form | Print Form

Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form # 62-701.900(2)
Form Title Certification of Construction Completion of a Solid Waste Management Facility
Effective Date May 19, 1994

Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction Permit No: SC49-0199726-017 County: Osceola

Name of Project: Cell 11 Construction

Name of Owner: Omni Waste of Osceola County, LLC

Name of Engineer: Brantley Engineering, LLC

Type of Project: Construction of a Class I Landfill Disposal Cell (Cell 11), Geosynthetics Installation, Stormwater Devices, and Leachate Collection system.

Cost: Estimate $ 3,200,000 Actual $ 3,150,000

Site Design Quantity: Approx 6,500 ton/day Site Acreage: 11.45 Acres

Deviations from Plans and Application Approved by DEP (attach additional pages as needed):

Leachate pipes were flushed and not video inspected as authorized by Rule 62-701.500 (8)(h).
Rule 62-701.500 (8)(h) indicates water pressure cleaned or inspected by video recording.

Address and Telephone No. of Site: 1501 Omni Way, St. Cloud, Florida 34773
Tel: (407) 981-3720

Name(s) of Site Supervisor: John Hartings, (407) 818-6358

Date Site inspection is requested: As soon as possible

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

Permit No.: SC-49-0199726-017 Dated: 8/3/15

Date: 9/3/15

ALLAN S. BRANTLEY LICENSE No 68030 STATE OF FLORIDA PROFESSIONAL ENGINEER 9-3-15

Signature of Professional Engineer

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561-681-6600

FINAL CERTIFICATION REPORT
JED CELL 11 CONSTRUCTION

JED SOLID WASTE MANAGEMENT FACILITY
OSCEOLA COUNTY, FLORIDA

PREPARED FOR:

OMNI WASTE OF OSCEOLA COUNTY, LLC
1501 OMNI WAY
ST. CLOUD, FLORIDA 34773
Tel: (407) 981-3720

PREPARED BY:

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Submitted: September 3, 2015

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1 INTRODUCTION

1.1 Overview

This certification report summarizes the Construction Quality Assurance (CQA) activities performed by Brantley Engineering, LLC during construction of Cell 11 at the J.E.D. Solid Waste Management (JED) facility, a Class I landfill, located in Osceola County, Florida. The JED facility is owned by Omni Waste of Osceola County, LLC (Omni), a Progressive Waste Solutions Company (PWS). The CQA activities performed by Brantley included monitoring of:

- earthwork construction;
- geosynthetics installation;
- leachate management system construction; and
- miscellaneous activities associated with development and ongoing operation of the landfill.

The CQA activities were performed to confirm that the construction materials and procedures were in compliance with Solid Waste Permit to Construct No. SC49-0199726-017-SC-MM issued by Florida Department of Environmental Protection (FDEP), Central District and in accordance with Chapter 62-701, Solid Waste Management Facilities, Florida Administrative Code (FAC).

Cell 11 was constructed in accordance with the above-mentioned permit and associated permit drawings. This certification report was prepared for Michael Kaiser, Regional Engineer of PWS. The report was prepared by Allan Brantley, PE, and reviewed by Sam Nejad, PE, both of Brantley Engineering, LLC.

1.2 Report Organization

The remainder of the certification report is organized as described below.

- Section 2 provides a brief description of the project;
- Section 3 presents a summary of the CQA program;
- Section 4 provides a description of the CQA monitoring and testing activities performed during earthwork related construction activities in Cell 11;
- Section 5 provides a description of the CQA monitoring and testing activities performed during the geosynthetics installation in Cell 11;
- Section 6 provides a description of the CQA monitoring and testing activities performed during construction of the leachate collection system in Cell 11;

- Section 7 presents a description of the CQA monitoring and testing performed during miscellaneous construction activities associated with development and ongoing operation of the landfill; and
- Section 8 presents a summary of the observations resulting from the CQA monitoring and testing activities performed by Brantley and a certification statement signed and sealed by a professional engineer registered in the State of Florida.

A List of CQA Monitoring and Liner Installation Personnel for this project is included in Appendix A. Pre-Construction Soils Laboratory Testing Results are included in Appendix B. Soils Field Testing Results are included in Appendix C. The Inventory Logs for geosynthetics are included in Appendix D. The Manufacturer's Quality Control Certificates are included in Appendix E. Conformance Test Results are included in Appendix F. Subgrade Acceptance Certificates are included in Appendix G. Geomembrane Installation logs for the Secondary Layer and Primary Layer are included in Appendices H and I, respectively. The Florida JetClean Report for leachate collection line cleaning verification is included in Appendix J. Daily Field Monitoring Reports of construction activities are included in Appendix K. Project Photos of major construction activities are included Appendix L. Record drawings for Top of Subgrade As-Built, Secondary Layer 60 Mil HDPE As-Built, Primary Layer 60 Mil HDPE As-Built, Top of Protective Cover Sand As-Built, and the Final Topographic As-Built are included in the Project Figures section of this report.

2 PROJECT DESCRIPTION

2.1 General

The JED facility is located in eastern Osceola County, Florida, west of highway U.S. 441, approximately 6.5 miles south of Holopaw. The landfill facility is connected to highway U.S. 441 by a 2.86-mile paved access road, which was constructed as part of the overall project site development.

The JED facility site comprises a total of approximately 2,179 acres. The landfill footprint at final build-out is approximately 360 acres and consists of a total of 23 landfill cells that provide available waste capacity for approximately 30 years. Cell 11 is the first cell to be constructed as part of the Phase 4 development with a footprint of approximately 11.45 acres. This report primarily addresses the CQA activities performed during construction of Cell 11.

2.2 Construction Activities

This certification report pertains to CQA monitoring and testing activities performed for construction of Cell 11. The construction of Cell 11 included earthwork, liner system installation, and leachate collection system construction as indicated in the Cell 11 Construction Drawings prepared for the construction of Cell 11. The Cell 11 design incorporates a double-liner system and other engineering controls that meet or exceed the requirements of Chapter 62-701, FAC. The Cell 11 liner system consists of the following components (from top to bottom):

- minimum 24-in thick liner protective soil layer;
- primary geocomposite drainage layer, consisting of a high-density polyethylene (HDPE) geonet with a needle-punched, non-woven geotextile heat bonded to each side, hereafter referred to as primary geocomposite;
- primary liner, consisting of a 60-mil thick textured HDPE geomembrane;
- primary geosynthetic clay liner (GCL) within the sump area consisting of an internally reinforced composite, composed of granular sodium bentonite encapsulated between a needle-punched non-woven geotextile and a woven geotextile;
- secondary geocomposite drainage layer, consisting of a HDPE geonet with a needle-punched, non-woven geotextile heat bonded to each side, hereafter referred to as secondary geocomposite;
- secondary liner, consisting of a 60-mil thick textured HDPE geomembrane;
- secondary GCL consisting of an internally reinforced composite, composed of granular sodium bentonite encapsulated between a needle-punched non-woven geotextile and a woven geotextile; and
- minimum 6-in thick prepared liner subbase.

The Cell 11 leachate collection system consists of the following components:

- one 8-in nominal diameter HDPE perforated leachate collection pipe surrounded by gravel aggregate and non-woven geotextile filter fabric installed along the cell floor as part of the primary leachate collection system (two locations);
- one 6-in nominal diameter HDPE perforated leachate collection pipe surrounded by gravel aggregate and non-woven geotextile filter fabric installed within the cell as part of the secondary leak detection system (two locations);
- two 24-in nominal diameter HDPE primary sump risers and associated sections of 24-in nominal diameter HDPE perforated leachate sump pipes;
- one 24-in nominal diameter HDPE secondary sump riser and associated section of 24-in nominal diameter HDPE perforated leachate sump pipe; and
- leachate pumps, piping, valves, and system controls.

3 CONSTRUCTION QUALITY ASSURANCE PROGRAM

3.1 General

The scope of CQA monitoring, testing, and documentation services performed by Brantley during the construction of Cell 11 at the JED facility included review of documents, field CQA operations, and preparation of this final certification report which includes record drawings for the liner system. These activities are described in the following sections of this report.

Brantley provided the CQA monitoring, testing, and documentation for this project. Geosyntec Consultants, Inc. provided the original design and construction drawings. A list of personnel involved in construction of Cell 11 at the JED facility is included in Appendix A of this report.

Earthwork activities associated with the Cell 11 construction commenced on February 9, 2015. The liner system installation in Cell 11 commenced on May 4, 2015. Protective soil layer placement in Cell 11 commenced on May 23, 2015. Construction of Cell 11 (described in this certification report) was substantially completed on August 28, 2015.

3.2 Related Documents

The CQA activities conducted by Brantley were intended to satisfy the requirements of the following documents:

- Solid Waste Construction Permit No. SC49-0199726-017;
- Technical Specifications, Appendix J of the Major Modification Application for Vertical Expansion of the J.E.D. Solid Waste Management Facility (Phases 1 through 3), prepared and submitted by Geosyntec in September 2007;
- Construction Quality Assurance (CQA) Plan, Appendix K of the Major Modification Application for Vertical Expansion of the J.E.D. Solid Waste Management Facility (Phases 1 through 3), prepared and submitted by Geosyntec in September 2007;
- Construction drawings titled J.E.D. Solid Waste Management Facility, St. Cloud, Florida, Cell 11 Construction, dated January 2015, prepared by Geosyntec.

All of the above documents are collectively referred to in this certification report as the CQA Documents. During construction, minor deviations were made to these documents to include clarifications to the intent of the design and to accommodate existing site conditions or preferred construction techniques. However, no substantial changes were made to the CQA Documents.

3.3 Field CQA Operations

The CQA activities performed by Brantley personnel during the Cell 11 construction are listed in the following subsections.

Earthwork:

- collected samples of soils used as general fill to construct the subgrade and liner subbase in Cell 11 for testing at an off-site geotechnical laboratory;
- collected samples of soils used for protective soil layer for testing at the off-site geotechnical laboratory;
- reviewed and evaluated geotechnical laboratory test results to ensure compliance with the requirements of the CQA Documents;
- monitored placement, grading, and compaction of earthwork related construction activities;
- tested in-situ density, moisture content, and percent compaction of earthwork related construction activities to ensure compliance with the requirements of the CQA Documents;
- notified Contractor of areas that need additional compaction based on failing in-situ tests and re-testing these areas to ensure compliance with the requirements of the CQA Documents; and
- monitored anchorage of the geosynthetics in the perimeter anchor trenches.

Geosynthetics:

- monitored delivery, storage, and tracked the inventory of geosynthetic materials delivered for the project;
- coordinated the collection of geosynthetic conformance samples from in-plant sources or delivered rolls and forwarded samples to an off-site geosynthetics testing laboratory;
- collected and reviewed geosynthetic manufacturers' quality control (MQC) certification documents and geosynthetic laboratory conformance test results to verify compliance with the requirements of the CQA Documents;
- monitored installation of geosynthetic materials in Cell 11 including trial seams, production seaming, nondestructive testing, and repair operations; and
- performed destructive testing of geomembrane seams at the minimum frequency required by the CQA Documents.

Leachate Collection System:

- reviewed quality control (QC) documents of materials used in the leachate collection system, geotechnical laboratory conformance test results on aggregate samples, and

geosynthetic laboratory conformance test results on geotextile filter/separator fabric samples to verify compliance with the requirements of the CQA Documents; and

- monitored construction of the leachate collection system in Cell 11.

Miscellaneous Activities:

- monitored pressure cleaning of the Cell 11 leachate collection system piping; and
- monitored installation of sump risers, concrete surface pads, leachate pumps, leachate piping and system controls.

During construction activities involving monitoring and/or testing, the observations made and results obtained by Brantley CQA personnel were compared with the requirements of the CQA Documents. In the event of deficiencies in construction practices and/or materials, the construction manager and the appropriate Contractor were notified to take appropriate corrective actions. The corrective actions were monitored and/or tested by CQA personnel to confirm compliance with the requirements of the CQA Documents.

3.4 Certification Report and Record Drawings

Record drawings for Cell 11 liner subbase, primary and secondary geomembrane panel layouts, liner protective soil cover, and the leachate collection and removal system piping, and this CQA certification report were prepared as the final task of the CQA program for construction of Cell 11. The record drawings are included in the Project Figures section of this report. This certification report summarizes the CQA activities performed by Brantley.

During construction of Cell 11, CQA monitoring and testing activities were documented by CQA personnel in Daily Field Reports found in Appendix K of this report. QC certificates for the geosynthetics, other construction materials, and surveyor's data were provided to Brantley for review. These and other construction-related documents are maintained by Omni and Brantley, and will be made available for FDEP review upon request. Results of CQA monitoring and testing activities that are critical with respect to the satisfactory performance of Cell 11 at the JED facility and protection of the surrounding environment have been summarized in a tabular form in this certification report.

3.5 Project Personnel

Major personnel or representatives of the firms involved in the project are as follows:

Owner:	Omni Waste of Osceola County, LLC
	Mike Kaiser, Regional Engineer
	John Hartings, Landfill Manager

CQA Consultant:	Brantley Engineering, LLC.
	Allan Brantley, PE, Engineer of Record/CQA Project Manager
	Kevin Lesley, CQA Site Manager
	Elias Perkins, CQA Liner Inspector
Earthwork Contractor:	RCS Excavation, Inc., Lake Placid, FL
	A.J. Smith, Project Manager
	Mike Rowley, Soils Superintendent
Geosynthetics Installer:	Comanco Environmental Corp., Plant City, FL
	Clayton Lung, Project Manager
	Jorge Gomez, Geosynthetics Superintendent
Surveyor:	Peavey Surveying, Fort Meade, FL
	Deborah L. Peavey, PSM
Geotechnical Laboratories:	Excel Geotechnical Testing, Roswell, GA
	Nader Rad, Ph.D., P.E., Project Manager
Geosynthetics Laboratory:	TRI/Environmental, Inc., Anaheim, CA
	Christian Sebastian, Project Manager

4 CQA – EARTHWORK

4.1 General

Brantley monitored earthwork related to the Cell 11 construction and other miscellaneous construction activities. Earthwork activities related to Cell 11 included construction of the perimeter berm on the north and east side of Cell 11, construction of intercell berms on the south side, construction of subgrade and 6-inch thick liner subbase, installation of the protective soil layer, and anchorage of the geosynthetic components of the double-composite liner system.

The materials used to construct Cell 11 included general fill and protective soil. General fill was used to construct the perimeter berm, intercell berms, subgrade and 6-inch thick liner subbase in Cell 11, and to anchor the geosynthetics. Protective soil was used for the minimum 2-ft thick protective soil layer over the geosynthetic liner system.

CQA personnel observed the earthwork related construction activities and tested the soils to confirm that the material properties conformed to the CQA Documents, maximum lift thicknesses were not exceeded, and compaction requirements were met. During construction, geotechnical soil tests were performed at off-site geotechnical laboratories under the supervision of Dr. Nader S. Rad, P.E. The off-site geotechnical laboratory utilized was Excel Geotechnical Testing (EGT), Roswell, Georgia.

4.2 Soil Source and Requirements

The general fill and protective layer soils were obtained from the borrow area located on the neighboring Bronson Family property (Bronson Borrow Area) west of the landfill. Representative samples of general fill and protective layer soils were obtained and tested to verify conformance with specified material requirements in the CQA Documents. The geotechnical tests were performed to confirm that the following requirements were met for the general fill and protective layer soils:

- *General Fill:* classified as SW, SP, SW-SM, SW-SC, SP-SM, SP-SC, SM, or SC in accordance with the Unified Soil Classification System (USCS) per ASTM D 2487 and was relatively free of debris, foreign objects, large rock fragments, organic matter, and other deleterious materials. Additionally, general fill used as liner subbase in Cell 11 was free of sharp materials or materials larger than 0.5 inches.
- *Protective Layer Soils:* classified as SW, SP, SW-SM, SW-SC, SP-SM, or SP-SC in accordance with the USCS; had maximum particle size of 0.5 inches; typically had fines content of less than 10 percent; and were relatively homogeneous soils free of deleterious materials. Regardless of the classification, protective layer soil was required to exhibit a hydraulic conductivity no less than 1.0×10^{-3} cm/sec when tested in accordance with ASTM D 2434.

A description of the geotechnical tests performed on placed materials and results of these tests are presented below.

4.3 CQA Monitoring and Testing

Brantley's CQA personnel monitored the placement and/or compaction of soils as described in Section 3. Brantley had personnel on site on a full-time basis during completion of major earthwork activities.

As part of the CQA activities, geotechnical testing was performed on the soils used for the construction of Cell 11. Testing was performed at an off-site geotechnical laboratory (Section 3.5).

The following geotechnical tests were performed:

- in-situ nuclear moisture/density tests on compacted lifts of general fill (the tests were performed in accordance with ASTM D 2922 for density and ASTM D 3017 for moisture content);
- in-situ density tests using the drive cylinder method (ASTM D 2937) to compare to the density tests results obtained using the nuclear gauge;
- moisture content tests on general fill in accordance with ASTM D 2216;
- standard Proctor compaction tests on general fill in accordance with ASTM D 698;
- grain-size analysis or fines content determination in accordance with ASTM D 422, ASTM C 136, or ASTM D 1140;
- hydraulic conductivity tests on the protective layer soils in accordance with ASTM D 2434; and
- interface friction tests, as discussed in the CQA Documents.

Brantley supplied one Humboldt Model #HS-5001SD nuclear gauge (Serial No. 6638) that was used to perform the moisture/density tests. The gauge was calibrated daily prior to use by the "standard count" method. These counts were recorded on a standard count log. The in-situ density tests using the drive cylinder method (ASTM D 2937) were performed periodically and compared with the density test results obtained using the nuclear gauge to ensure that the gauge was functioning properly.

4.4 General Fill

CQA personnel monitored the excavation (from the Bronson Borrow Area), placement, and compaction of general fill, which was used to construct the Cell 11 perimeter berm, intercell berm, subgrade, 6-in thick liner subbase, and anchorage of geosynthetics. CQA personnel assessed existing subgrade to confirm that unsuitable materials were removed. General fill-related activities performed by the Contractor consisted of the following:

- proof rolled subgrade to detect soft or loose zones using articulated off-road dump trucks;
- excavated and hauled general fill from Bronson Borrow Area using tracked excavators and articulated off-road dump trucks, respectively;
- placed and spread general fill in relatively thin lifts using bulldozers;
- compacted general fill using smooth drum rollers;
- scarified the surface of each compacted lift using tracks of a bulldozer prior to placement and compaction of subsequent lifts; and
- surveyed the limits and elevations of the compacted general fill (As-built survey drawings from the surveyor are included in the Project Figures section of this report.

General fill was required to be compacted to at least 95 percent of the corresponding standard Proctor (ASTM D 698) maximum dry unit weight. The tests performed on compacted general fill materials are discussed below. The CQA laboratory reports for the general fill samples are included in Appendix B-Section 1.

4.4.1 Standard Proctor Tests

Standard Proctor tests were performed to evaluate the percent compaction from the measured in-situ densities of compacted general fill. Standard Proctor tests were required to be performed at a minimum frequency of 1 test per 25,000 cubic yards (cyd) of compacted general fill.

Seven (7) standard Proctor tests were performed during construction for approximately 150,000 cyd of compacted general fill placed as part of the Cell 11 construction. The laboratory results are provided in Appendix B-Section 1. The actual CQA test frequency of 1 test per 21,428 cyd (approx.) of compacted general fill exceeds the minimum testing frequency required by the CQA Documents.

4.4.2 Density and Percent Compaction

In-situ nuclear moisture/density tests were required to be performed at a frequency of 5 tests per acre per lift for earthwork performed using general fill (equivalent to approximately 1 test per 320 cyd). If the density test failed to meet the minimum compaction requirements, the Contractor reworked and re-compacted the area surrounding the failure and the area was retested by CQA personnel. The procedure was repeated until satisfactory moisture/density test results were obtained at each test location.

Approximately 150,000 cyd of general fill were used to construct Cell 11. The in-situ nuclear moisture/density tests performed to evaluate the compaction of general fill in Cell 11 are presented in Appendix C. A total of 526 nuclear moisture/density tests were performed, which correspond to a CQA test frequency of 1 test per 285 cyd (approx.) of compacted

general fill which exceeds the minimum testing frequency required by the CQA Documents. Moisture/Density Test Locations are presented in the Project Figures section of this report.

4.4.3 Grain Size Analyses and USCS Classification

Grain-size distribution analyses (ASTM D 422) were performed to evaluate the USCS classification (ASTM D 2487) of general fill materials used to construct Cell 11. Grain size distribution analyses and USCS classification were required to be performed at a minimum frequency of 1 test per 10,000 cyd of compacted general fill.

Sixteen (16) grain size distribution analyses and USCS classification were performed during construction for approximately 150,000 cyd of compacted general fill placed as part of the Cell 11 construction. The actual CQA test frequency of 1 test per 9,375 cyd (approx.) of compacted general fill meets the minimum testing frequency required by the CQA Documents. The grain size distribution analyses and USCS classification performed during construction of Cell 11 are presented in Appendix B-Section 2. As noted, the general fill materials used to construct Cell 11 are classified as SP or SP-SM in accordance with the USCS classification.

4.4.4 Drive Cylinder Tests

In-situ moisture/densities were measured using the drive cylinder method (ASTM D 2937) periodically to verify the moisture/density test results obtained using the nuclear gauge. Thirty-seven (37) moisture/densities were measured using the drive cylinder method for the general fill used to construct Cell 11 and are presented in Appendix C. A drive cylinder was collected for approximately every 14 nuclear density tests performed, meeting the minimum testing frequency required by the CQA Documents. As noted, the densities measured using the two methods were in general agreement.

4.4.5 Anchorage of Geosynthetics

Brantley CQA personnel periodically monitored the method of anchorage for the geosynthetic materials along the perimeter berm (on north and east side of Cell 11) and the intercell berm between Cell 11 and future Cell 13. Along the west side of Cell 11, each layer of geosynthetics was tied into the respective layer of geosynthetics from Cell 10. The construction sequence for the anchor trenches was as follows:

- a 2-ft deep by 2-ft wide (minimum) trench was excavated approximately 2 feet from the inside crest of perimeter berm and 6 feet from the inside crest of the intercell berm;
- the geosynthetic components were then placed in and depending upon the material, across the bottom of the anchor trench and ballasted with sandbags; and
- the anchor trench was backfilled with general fill and compacted.

A small, low ground pressure, tracked excavator, hand shovels and brooms were used to carefully remove the existing protective cover soil from an approximate 7-ft wide swath along

the length of the west side of Cell 11 where the geosynthetic layers of the adjacent existing Cell 10 were to be tied into. When the Installer was ready to deploy the secondary GCL along the tie-in area, the following tie-in activities were performed: (i) the existing primary geosynthetic components (primary geocomposite and primary geomembrane) and the secondary geocomposite were cut open and folded back to expose the secondary liner, and (ii) the similar geosynthetic components from Cell 11 were overlapped, fastened, or welded to the existing adjacent geosynthetic components as shown in Detail E3 on Sheet 7 of 18 of the Construction Drawings and as described in Section 5.

4.5 Protective Soil Layer

Protective soil was used to cover the geosynthetic components of the liner system in Cell 11. The minimum thickness of the protective soil layer atop the geosynthetic components of the liner system in Cell 11 was 2 feet.

Sandy soils from the Bronson Borrow Area were used as protective soil. CQA personnel monitored the placement of the protective soil in Cell 11. The construction sequence of protective soil layer was as follows: (i) articulated dump trucks hauled the sandy soils from Bronson Borrow Area to Cell 11, and (ii) the sandy soils were placed and spread using low ground pressure bulldozers.

During placement of the protective soil, CQA personnel monitored the Contractor's activities such that the risk of damage to the underlying geosynthetics was minimized. CQA personnel also confirmed that at least a 2-ft thick layer of sandy soils was maintained over the geosynthetics where the Contractor operated the dozer equipment. A minimum 3-ft thick layer of sandy soils was maintained where the articulated off-road dump trucks operated. Brantley also reviewed the certified survey for the protective cover soil layer, submitted by the Contractor, to ensure compliance with the CQA Documents.

Grain-size distribution analyses (ASTM D 422), soil classification in accordance with USCS (ASTM D 2487), and hydraulic conductivity (ASTM D 2434) tests were performed on samples of protective soil at an off-site geotechnical laboratory. Grain-size distribution analyses, soil classification, and hydraulic conductivity tests were performed at a minimum frequency of 1 test per 5,000 cyd of in-place protective soil.

A total of approximately 37,000 cyd of protective soil was placed in Cell 11. Eight (8) grain-size distribution analyses (and USCS classification) and hydraulic conductivity tests were performed on the protective layer soils placed in Cell 11. The CQA laboratory reports for the protective soil samples are included in Appendix B-Section 2. The actual CQA test frequencies of 1 test per 4,625 cyd (approx.) for grain-size distribution analyses, USCS classification, and hydraulic conductivity met the minimum testing frequencies required by the CQA Documents. As noted, the measured hydraulic conductivities of protective soil

exceeded the minimum hydraulic conductivity of 1.0×10^{-3} cm/sec required by the CQA Documents.

5 CQA – GEOSYNTHETICS

5.1 General

Brantley monitored the installation of the geosynthetic components of the double composite liner system in Cell 11, as described in Section 2. The on-site CQA personnel would monitor typical activities such as; deployment, seaming, pressure testing, vacuum testing, trial welds, repairs, and destructive sampling.

5.2 CQA of Geosynthetic Clay Liner

5.2.1 Conformance Testing and Documentation

A geosynthetic clay liner (GCL) was used in construction of the secondary liner system, and primary liner system within the sump area in Cell 11. Bentomat ST GCL, manufactured by Colloid Environmental Technologies Company (CETCO) was used for the project. Conformance samples of the GCL were collected (from the rolls produced for the project) by TRI, which coordinated with the manufacturer to collect the CQA samples at CETCO's manufacturing plant. TRI also performed the CQA conformance testing in accordance with the CQA Documents on the samples of the GCL collected.

The MQC certificates and test results, and the CQA conformance test results were reviewed by CQA personnel and were found to be in compliance with the CQA Documents. The GCL MQC certificates have been included in Appendix E-Section 1.

A total of three (3) CQA conformance samples were tested for approximately 562,500 square feet (ft^2) of GCL delivered to the site for installation in Cell 11. The actual CQA test frequency of 1 test per 187,500 ft^2 of GCL exceeded the minimum testing frequency of 1 test per 200,000 ft^2 required by the CQA Documents. As a minimum, one conformance sample was tested during CQA from each lot of GCL supplied for the project. The CQA laboratory test results for the GCL conformance samples have been included in Appendix F-Section 1.

The hydraulic conductivity of GCL was tested using deionized water as the permeant fluid during MQC and CQA testing. Comparison studies using deionized water and leachate from the JED facility were performed previously for Cells 1 and 4. It was determined that the measured hydraulic conductivity of GCL using leachate as the permeant fluid was less than the measured hydraulic conductivity of GCL using deionized water as the permeant fluid, i.e., it is conservative to measure the hydraulic conductivity of GCL using deionized water.

5.2.2 Field Monitoring Activities

5.2.2.1 Delivery and On-Site Storage

Upon delivery, GCL rolls were unloaded in an area located south of the Cell 11 construction area (i.e., in future Cell 13 footprint), stacked on an elevated soil berm, and covered with plastic tarps. The rolls were typically transported on site by an off-road forklift equipped with

a stinger bar. CQA personnel periodically monitored the Installer's delivery, unloading, and storage procedures and observed that the GCL was handled in an appropriate manner. The CQA personnel also compared the roll numbers of the GCL rolls delivered to the manufacturer's bill of lading. An inventory of the rolls delivered for the project was maintained by the CQA personnel. This inventory also includes the rolls that were approved for installation based on MQC and CQA test results and the rolls that were used during construction. Only approved rolls were incorporated into the work. The Inventory Log for the GCL material is presented in Appendix D-Section 1.

5.2.2.2 Deployment

Prior to GCL deployment, the Installer signed a certificate of acceptance for the liner subbase, which is included in Appendix G. The GCL rolls were lifted using a stinger bar attached to a skid steer w/forklift attachment. The rolls were deployed by inserting a spreader bar attached to a low-ground pressure, track-mounted skid steer vehicle and unrolled. Panels were re-positioned as necessary using laborers.

CQA personnel monitored the deployment of the GCL rolls. During deployment, the CQA personnel checked for the following:

- manufacturing defects;
- damage that may have occurred during shipment, storage, and handling; and
- damage resulting from installation activities.

If any materials were observed to be damaged, the Installer was notified and the damaged materials were either discarded or repaired. CQA personnel observed repair locations to verify conformance with the requirements of the CQA Documents.

CQA personnel also periodically monitored the deployment of the GCL as well as its condition after installation to ensure that the Installer followed the following procedures:

- the GCL was unrolled and placed in a manner which kept the GCL in sufficient tension to avoid excessive wrinkling and was securely anchored in the anchor trench or ballasted with sand bags;
- the rolls were deployed with the woven geotextile in contact with the geomembrane;
- adjacent GCL panels were overlapped a minimum of 6 inches along the length of the panels and 12 inches along the width of the panels and granular bentonite was added between overlap along the width of panels and repaired areas;
- measures were taken to keep the GCL free of contamination and protected from premature hydration; and
- geomembrane installation immediately followed installation of the GCL.

Any observed holes or tears in the GCL were repaired by the Installer by placing a patch of the same material over the hole or tear and at a distance of at least 1 foot beyond the edges of the hole or tear. Granular bentonite was added around the damaged area prior to overlaying the patch material. In areas where premature hydration of the GCL was detected, the GCL was removed and replaced with new material.

5.3 CQA of Textured Geomembrane

5.3.1 Conformance Testing and Documentation

A 60-mil textured HDPE geomembrane was installed as primary and secondary liners in Cell 11. The 60-mil textured geomembrane, Micro Spike double sided HD, was supplied by AGRU America, Inc., (Agru). Conformance samples of textured geomembrane were collected (from the rolls produced for the project) by TRI, which coordinated with the manufacturer to collect the CQA samples at Agru's manufacturing plant. TRI also performed the CQA conformance testing in accordance with the CQA Documents on the samples of textured geomembrane collected.

The MQC certificates and test results and the CQA conformance test results were reviewed by CQA personnel and were found to be in compliance with the CQA Documents. The geomembrane MQC certificates and conformance test results are included in Appendices E and F, Section 2, respectively.

A total of twelve (12) CQA conformance samples were tested for approximately 1,126,655 ft^2 of textured geomembrane delivered to the site for installation in Cell 11. The actual CQA test frequency of 1 test per 93,887 ft^2 for the textured geomembrane exceeded the minimum frequency of 1 test per 100,000 ft^2 required by the CQA Documents. As a minimum, one conformance sample was tested during CQA from each resin lot supplied for the project. The CQA laboratory test results for the geomembrane conformance samples have been included in Appendix F-Section 2.

5.3.2 Field Monitoring Activities

5.3.2.1 Delivery and On-Site Storage

Upon delivery to the site, geomembrane rolls were stored in an area located south of the Cell 11 construction area (i.e., future Cell 13 footprint) and stacked on an elevated soil berm. The rolls were typically transported by an off-road forklift with a spreader bar attachment or using the nylon slings which were attached to each roll. CQA personnel periodically monitored the Installer's delivery, unloading, and storage procedures to ensure that the material was handled in an appropriate manner. CQA personnel also compared the roll numbers of the geomembrane rolls delivered to the manufacturer's bill of lading. An inventory of the rolls delivered for the project was maintained by the CQA personnel. This inventory also includes the rolls approved for installation based on MQC and CQA test results and the rolls used

during construction. Only approved rolls were incorporated into the work. The Inventory Log for the geomembrane is presented in Appendix D-Section 2.

5.3.2.2 Deployment

The geomembrane rolls were lifted using a spreader bar attached to a track-mounted skid steer vehicle with forklift attachment. The panels were deployed by unrolling the geomembrane rolls using the low-ground pressure, track-mounted skid steer vehicle with forklift attachment. The individual panels were re-positioned as necessary using laborers.

CQA personnel monitored the deployment of each geomembrane panel. During deployment, the CQA personnel checked for the following:

- manufacturing defects;
- damage that may have occurred during shipment, storage, and handling; and
- damage resulting from installation activities, including damage as a consequence of panel placement, seaming operations, or weather.

If any materials were observed to be damaged or deficient, the Installer was notified and the damaged materials were either discarded or repaired. CQA personnel observed and documented the repair locations to verify compliance with the CQA Documents. Details of the geomembrane panel deployment were recorded by CQA personnel on panel deployment logs, which are included in Appendices H and I, Section 1, for Secondary and Primary respectively.

5.3.2.3 Trial Seams

Prior to production seaming, the Installer prepared geomembrane trial seams for each piece of seaming equipment to be used. Additional trial seams were prepared approximately every five hours or when field conditions changed. CQA personnel evaluated the trial seams as follows:

- trial seams were welded under similar conditions as production seaming;
- test strips were cut from the trial seams at random locations with a die press;
- five (5) test strips were tested using a field tensiometer and compared to the passing criteria for the tests, which were as follows:

  Fusion

  - *Peel tests - a minimum bonded seam strength of 91 lb/in (inside/outside); and*
  - *Shear test - a minimum bonded seam strength of 120 lb/in.*

  Extrusion

  - *Peel test - a minimum bonded seam strength of 78 lb/in; and*
  - *Shear test - a minimum bonded seam strength of 120 lb/in.*

If trial welds failed, the machine or welding process was adjusted and a new trial seam was prepared. The new sample was tested to ensure compliance with the above strength requirements. The procedure was repeated, as needed, until passing results were obtained.

Trial seam samples were not archived. Details of the trial seams, including the trial seam test results, are included in Appendices H and I, Section 2, for Secondary and Primary, respectively.

5.3.2.4 Production Seams

Geomembrane production seaming operations were monitored by CQA personnel. The majority of the geomembrane production seams were fabricated using double-track fusion welders. Seam repairs were made using hand-held extrusion welders. Rub sheets were periodically used during production seaming to provide a clean surface to weld over. During or after fabrication, the geomembrane seams were visually examined for workmanship and continuity. Geomembrane fusion seaming logs are included in Appendices H and I, Section 3 for Secondary and Primary, respectively. Geomembrane extrusion seaming logs are included in Appendices H and I, Section 4 for Secondary and Primary, respectively.

5.3.3 Nondestructive Seam Testing

5.3.3.1 Scope

Nondestructive testing of geomembrane seams was monitored by CQA personnel. All geomembrane seams were nondestructively tested for continuity by the Installer using the air pressure procedure for double-track fusion seams and the vacuum-box test procedure for extrusion welded seams. Failed air pressure seams, if applicable, were capped and then retested using vacuum-box test methods after determining the failed seam length. Leaks identified using the vacuum-box method were repaired and retested as described in Section 5.3.5.

5.3.3.2 Air Pressure Testing

Accessible double-track fusion seams were nondestructively tested using the air pressure test. The procedure used by the Installer for air pressure testing was as follows:

- visually observed the integrity of the annulus of the section of seam being tested and isolated the section by sealing the ends using heat and pressure;
- inserted the needle of the pressure test apparatus into the annulus at one end of the seam;
- inflated the annulus to a gauge pressure between 25-30 psi with an air pump and maintained the gauge pressure for at least 5 minutes;
- repaired faulty areas in accordance with Section 5.3.5 if the pressure loss exceeded 3 psi or if the pressure did not stabilize; and

- confirmed airflow through the entire annulus by releasing the air from the seam at the opposite end from where the needle was inserted.

5.3.3.3 Vacuum-Box Testing

The vacuum-box was used by the Installer to nondestructively test extrusion seams and repairs. The procedure used by the Installer for vacuum testing was as follows:

- wetted a strip of seam with a soapy solution;
- placed the vacuum-box assembly over the wetted area, closed the bleed valve and opened the vacuum valve;
- forced the box onto the sheet until vacuum was observed;
- examined the seam through the viewing window for a period of approximately 20 seconds for the occurrence of air bubbles;
- removed the assembly and continued the process over the entire length of the seam; and
- recorded the location of any leaks.

Nondestructive seam air pressure test results are presented in Appendices H and I, Section 6 for Secondary and Primary, respectively. Nondestructive vacuum box test results are presented in Appendices H and I, Section 5 for Secondary and Primary, respectively. If nondestructive testing indicated that repairs were necessary, repairs were made in accordance with procedures presented in Section 5.3.5. All repairs were tested using the vacuum-box test procedure.

5.3.4 Destructive Seam Sample Testing

5.3.4.1 Scope

CQA personnel identified and collected geomembrane seam samples for destructive testing in accordance with the CQA Documents. These samples were tested at an off-site geosynthetics laboratory. For a destructive seam sample to be considered as passing, the seam strength criteria described in Section 5.3.2.3 had to be met for at least four out of the five test specimens obtained from the sample. Additionally, if one non-FTB failure was observed, the average of the five test specimens had to meet the specified strength criterion.

5.3.4.2 Sampling Procedures

Prior to the removal of the full seam sample, two geomembrane test strips were taken by the Installer from either end of the proposed destructive sample. Each strip was peel-tested in the field. If the peel samples exhibited passing results, the adjacent destructive seam sample was removed and tested. At each destructive seam sample location, a test sample measuring approximately 12 inches across the seam and 42 inches along the seam was obtained. The

sample was divided into three pieces and distributed to: (i) the off-site geosynthetics laboratory for testing, (ii) the Installer, and (iii) the Owner as an archive sample.

5.3.4.3 Test Results

Laboratory testing of geomembrane seam samples was performed in accordance with the CQA Documents. For destructive seam testing, five 1-in wide test specimens were removed from the destructive seam sample using a die press. Five test specimens were peel-tested for adhesion strength using a calibrated tensiometer. For fusion seams, peel tests were performed on both the bottom (inside track) and top (outside track) edges. Additionally, five specimens were tested for shear strength. The seam acceptance/rejection criteria described in Sections 5.3.2.3 and 5.3.4.1 were used to evaluate the destructive seam samples.

The CQA laboratory destructive test results for the secondary and primary liner have been included in Appendices H and I, Section 7 respectively. For the primary liner installed in Cell 11, fifty nine (59) destructive seam samples were tested for a total fusion seam length of 27,371 linear ft. (approx.). This corresponds to an approximate sample frequency of 1 per 463 lf of fusion seam. For secondary liner installed in Cell 11, fifty five (55) destructive seam samples were tested for a total fusion seam length of 26,102 linear feet (approx.). This corresponds to an approximate sample frequency of 1 per 474 lf of seam. A total of five (5) destructive seam samples were tested for a total extrusion seam length of 750 linear ft. (approx.) for both primary and secondary. This corresponds to an approximate sample frequency of 1 per 150 lf of extrusion seam. The actual destructive seam test frequencies exceeded the minimum frequency of 1 per 500 lf of production seams required by the CQA Documents.

A total of 114 destructive fusion seam samples and 5 destructive extrusion seam samples were tested during the installation of the geomembrane liners. Seams identified by a failing destructive seam sample were tracked in both directions (i.e., seam welded before “B” and after “A” the location of the failing destructive sample) in accordance with the CQA Documents until passing destructive seam samples were achieved. The section of the seam between passing destructive seam samples was capped. There were no failing destructive seam samples for this project.

5.3.5 Geomembrane Repairs

The repair procedures presented in this subsection were used by the Installer to patch holes and tears, spot-extrude impact damage or other minor defects, and for grinding and extrusion welding small sections of failed fusion seams (if the exposed edge was accessible). In the cases where patches or caps were used to repair the damaged geomembrane (i.e., small holes, tears, or on seams which failed nondestructive or destructive testing), an approximately 12-in. wide capping strip was used.

During the repair or panel tie-in operations, the following procedures were implemented:

- technicians and seaming equipment used were required to pass trial welds;
- patches or caps extended at least 6 in. beyond the edge of the defect and all corners were rounded; and
- repairs were tested using vacuum box and visually observed for continuity.

Repair summary logs prepared by Brantley during CQA activities are included in Appendices H and I, Section 5 for secondary and primary liner, respectively. Record drawings illustrating layout of panels, location of seams, destructive samples, and repairs are included in the Project Figures section of this report.

5.4 CQA of Secondary Geocomposite

5.4.1 Conformance Testing and Documentation

The secondary geocomposite used was Transnet 270-2-6 manufactured by SKAPS. Secondary geocomposite conformance samples were collected (from the rolls produced for the project) by TRI, which coordinated with the manufacturer to collect the CQA samples at the SKAPS' manufacturing plant. TRI also performed the CQA conformance testing on the samples of the secondary geocomposite collected.

The MQC certificates and test results and the CQA conformance test results were reviewed by CQA personnel and were found to be in compliance with the CQA Documents. The results of the MQC and CQA conformance tests results for the 201 rolls (562,800 ft^2) produced for the project are provided in Appendices E and F, Section 3, respectively.

A total of three (3) CQA conformance samples were tested for approximately 562,800 ft^2 of secondary geocomposite delivered to the site for installation in Cell 11. The actual CQA test frequency of 1 test per 187,600 ft^2 of the secondary geocomposite meets the minimum frequency of 1 test per 200,000 ft^2 required by the CQA Documents for transmissivity, ply adhesion, mass per unit area, grab strength, and trapezoidal tear strength. Note that both sides of the geotextile component were tested for mass per unit area, grab strength, and trapezoidal tear strength. In addition, two (2) of these three (3) samples were tested for apparent opening size and permittivity. The actual CQA test frequency of 1 test per 281,400 ft^2 of the secondary geocomposite meets the minimum frequency of 1 test per 500,000 ft^2 required by the CQA Documents for apparent opening size and permittivity. A minimum of one conformance sample was tested during CQA from each geocomposite lot.

The transmissivity of the secondary geocomposite was measured under compressive stresses of 700 psf for 24 hours and 15,000 psf for 100 hours. The tests were performed with the secondary geocomposite sandwiched between two 60-mil HDPE textured geomembranes. The transmissivity of the secondary geocomposite reported is the minimum transmissivity measured during the 24 and 100-hour tests.

The CQA laboratory test results for the secondary geocomposite conformance samples have been included in Appendix F-Section 3.

5.4.2 Field Monitoring Activities

5.4.2.1 Delivery and On-Site Storage

Upon delivery to the site, secondary geocomposite rolls were stored in an area located south of the Cell 11 construction area (i.e., future Cell 13 footprint) and stacked on an elevated soil berm. The rolls were typically transported by an off-road forklift. CQA personnel periodically monitored the Installer's delivery, unloading, and storage procedures to ensure that the material was handled in an appropriate manner.

CQA personnel also compared the roll numbers of the secondary geocomposite rolls delivered to the Manufacturer's bill of lading. An inventory of the rolls delivered for the project was maintained by the CQA personnel. This inventory also includes the rolls that were approved for installation based on MQC and CQA test results and the rolls that were used during construction of Cell 11. Only approved rolls were incorporated into the work. The Inventory Log for the secondary geocomposite is presented in Appendix D-Section 3.

5.4.2.2 Deployment

CQA personnel monitored the deployment of the secondary geocomposite for manufacturing defects, damage that may have occurred during shipment, storage, and handling, and damage resulting from installation activities. If the materials were observed to be damaged, the Installer was notified and the damaged materials were either discarded or repaired. CQA personnel observed repair locations to verify conformance with the CQA Documents.

CQA personnel periodically monitored the deployment of the secondary geocomposite, as well as its condition after installation, to confirm that the Installer took measures to:

- securely anchor the geocomposite in the anchor trench or ballast it with sand bags;
- unroll the geocomposite down the slope (i.e., rolls were aligned perpendicular to the leachate leak detection corridor) in a manner that kept the panel in sufficient tension to avoid excessive wrinkling;
- avoid entrapment of dust, stones, or other objects that would damage or clog the geocomposite;
- avoid damaging the underlying geomembrane during deployment;
- overlap the bottom geotextile edges;
- secure the geonet component of adjacent geocomposite panels with nylon fasteners, installed along the panel at maximum 5-ft spacing on slopes greater than 10 percent and 10-ft spacing on the cell floor, and at 1-ft spacing on end seams; and
- overlap and continuously sew the upper geotextile edges.

Any observed holes in the geotextile component of the secondary geocomposite were repaired by placing a patch of non-woven geotextile over the hole that extended at least one foot beyond the edge of the hole. These patches were continuously thermally bonded to the undamaged portion of the geocomposite. This method was also used along the tie-in at the toe of the slope and along trimmed panels. Any observed holes or tears in the geonet component of the composite were repaired by the Installer by placing a patch of the same material over or under the hole or tear, at least 2-ft beyond the edges of the hole or tear. These patches were secured using nylon fasteners, followed by thermal bonding of the uppermost geotextile of the patch to the undamaged portion of the geocomposite.

5.5 CQA of Primary Geocomposite

5.5.1 Conformance Testing and Documentation

The primary geocomposite used was Transnet 330-2-8 manufactured by SKAPS Industry (SKAPS). The primary geocomposite conformance samples were collected by TRI, which coordinated with the manufacturer to collect the CQA samples at the SKAPS' manufacturing plant in Commerce, Georgia. TRI also performed the CQA conformance testing on the samples of primary geocomposite collected.

The MQC certificates and test results and the CQA conformance test results were reviewed by CQA personnel and found to be in compliance with the CQA Documents. The MQC and CQA conformance test results for 207 rolls (521,640 ft²) of primary geocomposite are provided in Appendices E and F, Section 3, respectively.

A total of three (3) CQA conformance samples were tested for approximately 521,640 ft^2 of primary geocomposite delivered to the site for installation in Cell 11. The actual CQA test frequency of 1 test per 173,880 ft^2 of the primary geocomposite meets the minimum frequency of 1 test per 200,000 ft^2 required by the CQA Documents for transmissivity, ply adhesion, mass per unit area, grab strength, and trapezoidal tear strength. Note that both sides of the geotextile component were tested for mass per unit area, grab strength, and trapezoidal tear strength. In addition, two (2) of these three (3) samples were tested for apparent opening size and permittivity. The actual CQA test frequency of 1 test per 260,820 ft^2 of the primary geocomposite meets the minimum frequency of 1 test per 500,000 ft^2 required by the CQA Documents for apparent opening size and permittivity. A minimum of one conformance sample was tested during CQA from each geocomposite lot.

The transmissivity of the primary geocomposite was measured under compressive stresses of 700 psf for a period of 24 hours, and 15,000 psf for a period of 100 hours. The tests were performed with the primary geocomposite sandwiched between 60-mil textured geomembrane and the soil actually used as part of the protective soil layer. The transmissivity of the primary geocomposite reported is the minimum transmissivity measured during the 24 and 100-hour tests.

The CQA laboratory test results for the primary geocomposite conformance samples have been included in Appendix F-Section 3.

5.5.2 Field Monitoring Activities

5.5.2.1 Delivery and On-Site Storage

Upon delivery to the site, primary geocomposite rolls were stored in an area located south of the Cell 11 construction area (i.e., future Cell 13 footprint) and stacked on an elevated soil berm. The rolls were typically transported by an off-road forklift. CQA personnel periodically monitored the Installer's delivery, unloading, and storage procedures to ensure that the material was handled in an appropriate manner.

CQA personnel also compared the roll numbers of the primary geocomposite rolls delivered to the manufacturer's bill of lading. An inventory of the rolls delivered for the project was maintained by the CQA personnel. This inventory also includes the rolls that were approved for installation based on MQC and CQA test results and the rolls that were used during construction. Only approved rolls were incorporated into the work. The Inventory Log for the primary geocomposite is presented in Appendix D-Section 3.

5.5.2.2 Deployment

CQA personnel monitored the deployment of the primary geocomposite for manufacturing defects, damage that may have occurred during shipment, storage, and handling, and damage resulting from installation activities. If the materials were observed to be damaged, the Installer was notified and the damaged materials were either discarded or repaired. CQA personnel observed repair locations to verify conformance with the CQA Documents.

CQA personnel periodically monitored the deployment of the primary geocomposite, as well as its condition after installation, to confirm that the Installer took measures to:

- securely ballast the geocomposite with sand bags;
- unroll the geocomposite down the slope (i.e., rolls were aligned perpendicular to the slope contours) in a manner that kept the panel in sufficient tension to avoid excessive wrinkling;
- avoid entrapment of dust, stones, or other objects that would damage or clog the geocomposite;
- avoid damaging the underlying geomembrane during deployment;
- overlap the bottom geotextile edges;
- secure the geonet component of adjacent geocomposite panels with nylon fasteners, installed on a maximum 5-ft spacing on slopes greater than 10 percent and 10-ft on the cell floor and at 1-ft spacing on end seams; and
- overlap and continuously sew the upper geotextile edges.

Any observed holes in the geotextile component of the primary geocomposite were repaired by placing a patch of non-woven geotextile over the hole that extended at least one foot beyond the edge of the hole. These patches were continuously thermally bonded to the undamaged portion of the geocomposite. This method was also used along the tie-in at the toe of the slope and along trimmed panels. Any observed holes or tears in the geonet component of the composite were repaired by the Installer by placing a patch of the same material over or under the hole or tear, at least 2-ft beyond the edges of the hole or tear. These patches were secured using nylon fasteners, followed by thermal bonding of the uppermost geotextile of the patch to the undamaged portion of the geocomposite.

5.6 CQA of Non-Woven Geotextile

5.6.1 Conformance Testing and Documentation

A non-woven geotextile was used as filter fabric to surround the aggregate in the leachate collection and leak detection system corridors and as a separator in the Cell 11 leachate sump. The GT180 8-oz/yd^2, needle-punched, non-woven geotextile was manufactured by SKAPS.

The CQA conformance sample for the non-woven geotextile were collected by TRI, which coordinated with the manufacturer to collect the CQA samples at the SKAPS' manufacturing plant in Commerce, Georgia. TRI performed the CQA conformance testing on the sample of the non-woven geotextile collected.

The MQC certificates and test results and the CQA conformance test results were reviewed by CQA personnel and were found to be in compliance with the CQA Documents. The results of the MQC and CQA conformance tests are presented in Appendices E and F, Section 4, respectively.

One (1) CQA conformance sample was tested for approximately 82,800 ft^2 (eight rolls) of the non-woven geotextile delivered to the site for installation in Cell 11. The actual CQA test frequency of 1 test per 82,800 ft^2 of non-woven geotextile exceeded the minimum testing frequency of 1 test per 100,000 ft^2 required by the CQA Documents for mass per unit area, grab strength, trapezoidal tear strength, puncture resistance, and static puncture strength. In addition, this sample was also tested for apparent opening size and permittivity. The actual CQA test frequency of 1 test per 82,800 ft^2 of non-woven geotextile exceeded the minimum frequency of 1 test per 200,000 ft^2 required by the CQA Documents for apparent opening size and permittivity. The CQA laboratory test results for the geotextile conformance sample have been included in Appendix F-Section 4 of this report.

5.6.2 Field Monitoring Activities

5.6.2.1 Delivery and On-Site Storage

Upon delivery to the site, non-woven geotextile rolls were stored in an area located south of the Cell 11 construction area (i.e., future Cell 13 footprint) and stacked on an elevated soil

berm. The rolls were typically transported by an off-road forklift. CQA personnel periodically monitored the Installer's delivery, unloading, and storage procedures to ensure that the material was handled in an appropriate manner.

CQA personnel also compared the roll numbers of the geotextile rolls delivered to the manufacturer's bill of lading. An inventory of the rolls delivered for the project was maintained by the CQA personnel. This inventory also includes the rolls that were approved for installation based on MQC and CQA test results and the rolls that were used during construction. Only approved rolls were incorporated into the work. The Inventory Log for the geotextile is presented in Appendix D-Section 4.

5.6.2.2 Deployment

CQA personnel monitored the deployment of the non-woven geotextile rolls for manufacturing defects; damage that may have occurred during shipment, storage, and handling; and damage resulting from installation activities. If any materials were observed to be damaged, the Installer was notified and the damaged materials were either discarded or repaired. CQA personnel observed repair locations to verify conformance with the requirements of the CQA Documents.

After deployment of the geotextile, CQA personnel observed that the Installer overlapped geotextile panels end-to-end a minimum of 24 inches and continuously sewed the 6-in overlap.

5.7 Interface Friction Testing

As discussed in Section 2, the liner system in Cell 11 consists (from top to bottom) of the protective soil layer, primary geocomposite, primary geomembrane liner, secondary geocomposite, secondary geomembrane liner, secondary GCL and prepared subbase. Tests were performed in accordance with the CQA Documents to evaluate the interface shear strength for the various components of the liner system and the internal strength of the GCL. All tests for interface shear strength and the internal strength of the GCL were performed by TRI.

The interface shear and the internal strength tests were performed as part of CQA testing. The tests were performed using samples of geosynthetics collected from rolls that were actually installed in Cell 11. The soils for the protective soil layer and liner subbase were obtained from the Bronson Borrow Area and were similar to the sandy soils used in construction. The following rolls of geosynthetics were used for the CQA interface shear and the internal strength tests:

- GCL – Roll #330
- Textured geomembrane – Roll #G15F081010
- Primary geocomposite – Roll #63241020001

- Secondary geocomposite – Roll #63241010001 & #63241020078

The interfaces between the various components of the liner system and the internal strength of the GCL were tested at normal stresses of 5,000, 10,000, and 15,000 psf. Peak (at small displacement) and residual (at large displacements) shear strengths were measured at each normal stress. The interface shear tests were conducted under wetted/saturated conditions. GCL was soaked and consolidated prior to testing. The following liner system interfaces were tested:

- (Case1): Protective soil layer / primary geocomposite / textured geomembrane / secondary geocomposite
- (Case 2): Textured geomembrane / secondary geocomposite / textured geomembrane / GCL (non-woven side down) / subbase soil
- Internal strength of the GCL

The peak interface shear strength of the GCL and components was measured at an effective friction angle of 12.9^{o} (Case 1) and 13.4^{o} (Case 2) which exceeds the minimum CQA Document requirements of 11.0^{o}. The large displacement interface shear strength was measured at an effective angle of 6.7^{o} (Case 1) and 6.9^{o} (Case 2) which exceeds the minimum CQA Document requirements of 6.1^{o}.

The peak internal shear strength of the GCL was measured at an effective friction angle of 19.3^{o} which exceeds the minimum CQA Document requirements of 11.0^{o}. The large displacement internal shear strength was measured at an effective angle of 4.9^{o} which does not exceed the minimum CQA Document requirements of 6.5^{o}. However, a Technical Memorandum as prepared by Craig Browne, P.E., from Geosyntec Consultants was prepared and submitted to the FDEP evaluating the GCL residual internal shear strength relative to the landfill liner waste-block stability. This Memorandum was subsequently approved by FDEP, therefore allowing use of our GCL material on this project. As requested by FDEP, a copy of the FDEP approval letter and Memorandum are included in this Final Certification of Construction Report in Appendix F- Section 5. The CQA laboratory interface test results have also been included in Appendix F-Section 5 of this report.

6 CQA – LEACHATE COLLECTION AND REMOVAL SYSTEM

6.1 General

This section includes CQA activities performed during construction of the leachate collection and removal system in Cell 11 and a leachate header pipe installed between Cell 11 sump risers and the existing leachate transmission line manhole MH-11, as shown in the construction drawings.

The leachate collection system in Cell 11 consists of a primary and a secondary leachate collection system and sumps. The primary leachate collection system included an 8-in diameter SDR 11 HDPE perforated leachate collection pipe surrounded by gravel aggregate and geotextile filter fabric. The secondary system was the same as the primary, except a 6-in SDR 11 HDPE perforated pipe was used. There are two separate collection trenches located within Cell 11.

For the primary and secondary leachate collection systems, the leachate collection pipe was provided with two rows of ½-inch perforations in the bottom 1/3 of the pipe section. Granular drainage materials meeting the requirements of #57 stone (per ASTM D 448) was used as the gravel aggregate. An 8-oz/yd^2 needle-punched, non-woven geotextile was used as the filter fabric.

Four (4) cleanouts (two for the primary system and two for the secondary system) were installed along the inside slope of the perimeter berm from the sump in Cell 11 to maintain the leachate collection system piping. The primary cleanouts were constructed using 8-in diameter SDR 11 HDPE pipe and fitted with a blind flange. The secondary cleanouts were constructed similarly, but with 6-in diameter pipe.

The Cell 11 sump included gravel beds covered with geotextile separator fabric and three sump upslope risers. The gravel beds for the primary and secondary sumps were separated by the primary liner system. Granular drainage materials meeting the requirements for #4 stone (per ASTM D 448) were used in the drainage beds. The primary drainage bed was separated from the overlying liner protective layer by an 8-oz/yd^2 needle-punched, non-woven geotextile separator fabric. Two primary and one secondary sump risers were installed in the Cell 11 sump. The sump risers were constructed using 24-in diameter SDR 32.5 HDPE pipe and included a perforated cap at the sump end and a bolted flanged top lid. The horizontal section (or collection segment) of the sump riser pipes were perforated to allow leachate to flow into the pipe.

The Cell 11 sump area also included a primary GCL extending along the toe of the perimeter berm and approximately 50 feet outward from the toe.

Leachate from Cell 11 will be collected in the leachate collection system in the central leachate corridors, and will gravity flow to the Cell 11 sump. Leachate will be pumped from

the sump risers through the leachate transmission line to the leachate storage area. To control the pumping and transfer of leachate, a sump control panel was installed as part of the leachate system in Cell 11.

Brantley's CQA personnel monitored the construction of the leachate collection system within Cell 11 and the leachate transmission header line from Cell 11 to the existing leachate transmission line manhole (MH-11). The field monitoring and testing activities performed by the CQA personnel during construction of the leachate collection system and the leachate transmission line are discussed below. After construction of the leachate collection system was complete, the primary collection pipes were pressured cleaned by Florida JetClean, of Lutz, Florida. A report from Florida JetClean verifying the system to be free flowing and not obstructed is included in Appendix J of this report.

6.2 HDPE Pipe

All pipes used in the construction of the leachate collection system were SDR 11 HDPE pipes except for the sump risers, which were constructed using SDR 32.5 HDPE pipes. The MQC certificates for the HDPE pipes were reviewed by the CQA personnel and were found to be in compliance with the requirements of the CQA Documents.

HDPE pipe sections were joined using butt-fusion welding and electro fusion coupler techniques. CQA personnel monitored the butt-fusion welding techniques to ensure that industry-accepted procedures were used during construction. CQA personnel also verified the diameter of and perforation details (size, number of rows, orientation) for the different pipes used in the leachate collection system.

6.3 Granular Drainage Materials

Granular drainage materials meeting the requirements of #57 stone (per ASTM D 448) were used in Cell 11 primary and secondary leachate collection systems. Granular drainage materials meeting the requirements of #4 stone (per ASTM D 448) were used in the Cell 11 leachate sump area. The #4 and #57 granular drainage materials were supplied by Conrad Yelvington Distributors, Inc. out of Orlando, Florida.

The QC certificates and test results were reviewed by CQA personnel and were found to be in compliance with the CQA Documents. The hydraulic conductivity (per ASTM D 2434) of the #57 stone was measured to be 14 cm/sec, which exceeded the CQA Documents requirement of 1 cm/sec. The hydraulic conductivity (per ASTM D 2434) of the #4 stone was measured to be 28 cm/sec, which exceeded the CQA Documents' requirement of 10 cm/sec. Carbonate content tests (per ASTM D 3042) were performed on the #57 and #4 stone granular drainage materials during the QC testing. The #57 and #4 stone used in construction of the leachate collection system were found to be almost insoluble (less than 1 percent soluble) to

6N hydrochloric acid. The results of the MQC and CQA conformance tests are presented in Appendix E-Section 5 and Appendix B-Section 3, respectively.

CQA personnel monitored the placement of the granular drainage material to ensure: (i) the underlying geosynthetics were not damaged; (ii) the perforated pipes were properly surrounded by the drainage materials and the geotextile; and (iii) the drainage materials were placed in accordance with the requirements of the CQA Documents.

6.4 Pressure Testing

The leachate header pipe installed between the Cell 11 sump and the existing leachate transmission manhole MH-11 was pressure tested to detect any leaks or defective pipe joints. The hydrostatic pressure testing was performed by filling the leachate transmission line segment and pressurizing it. The hydrostatic pressure of 130 psi was maintained for at least 1 hour after an initial 3 hour expansion phase. No drop in the hydrostatic pressure was observed during the 1 hour test period.

6.5 Sump Pumps and Control Panel

Leachate collected in the leachate sumps will be extracted and pumped to the leachate storage area by two 5-hp electric EPG model WSDPT 46-2 SurePumps located in the primary sump risers and one 1.5-hp electric EPG model WSDPT 12-2 SurePump located in the secondary sump riser. The pumps are controlled by a control panel located at the Cell 11 sump near the top of the sump risers. The sump pumps and the associated control panel were supplied by EPG Companies, Inc., (EPG), Rogers, Minnesota.

This facility is currently completing final installation of the leachate pumps and controls. Minor delays in completing the work are being experienced due to a damaged interior door panel within the EPG pump control equipment. A replacement door is anticipated to be received by September 11, 2015, and final tests performed shortly thereafter to confirm proper operation of the pumps and controls. Once this is completed, a final certification letter from an EPG representative (Absolute Water, Inc.) will be submitted to verify functionality in a separate transmittal from this report.

- Sump pumps will be tested in place by flooding the Cell 11 sump. Each pump will be connected to a piping assembly containing a pressure gauge, meter valve, and a flow meter. The pumps will be turned on and the pressure and flow rate of each pump will be recorded. The pressure and flow rate data for each pump will be compared to the pump curves provided by EPG.
- Transducer settings will be checked to confirm that the pumps and alarms are functioning and activating correctly.
- The installed system components will be visually checked for compliance with the requirements set forth in the project documents.

7 CQA – OTHER CONSTRUCTION ACTIVITIES

7.1 Overview

Brantley provided CQA monitoring, testing and documentation for miscellaneous activities associated with the development and ongoing operation of the JED facility. The CQA activities associated with the construction of the Cell 11 not previously discussed herein include the installation of a storm water drainage structure and a geomembrane flap installed along the Cell 11 perimeter berm and intercell berm to minimize methane gas migration and to temporarily restrict the cross flow of storm water into the Cell 11 area.

7.2 Storm Water Drainage Structure

Three storm water drainage structures (Structures A, B, & C – 24") were installed in the perimeter berm on the north side of Cell 11 in accordance with the CQA Documents. The pre-cast concrete storm water drainage structures were manufactured by American Concrete Industries, Inc., in Fort Pierce, Florida. The shop drawing supplied by the manufacturer was reviewed by the CQA personnel and were found to be in compliance with the CQA Documents.

7.3 Geomembrane Flap at Intercell Berm

A 60-mil HDPE geomembrane flap (approximately 6 feet wide) was installed along the Cell 11/13 intercell berm and the Cell 11 perimeter berm. The geomembrane flap was extrusion welded to the 60-mil primary geomembrane, brought up through the protective cover, and extended back toward the cell on top of the protective cover approximately 3-4 feet. This geomembrane flap is intended to minimize methane gas migration. The primary geocomposite drainage layer was terminated approximately 3 feet below the crest of the slope with the end wrapped with a geotextile and heat tacked to the geocomposite. The exposed geomembrane flap was held in place with sandbags.

7.4 Landfill Gas System

Two landfill gas side-slope risers were installed on the north side slope of Cell 11 and connected at the toe of slope creating a U-Shape. These risers will be connected to the lower tier horizontal gas collectors to facilitate condensate drainage and will be installed at a future date as waste filling occurs in Cell 11. Each riser consisted of approximately 30 feet of eight-inch diameter HDPE solid pipe. These pipes were installed down the slope with a 45 degree elbow placed approximately 5-feet from the toe, extended to the toe of slope with additional solid pipe, then another 45 degree elbow placed at the toe of slope, extended along the toe with an additional 15-foot section of eight-inch solid pipe. Connected to the solid pipe is approximately 160 linear feet of eight-inch HDPE perforated pipe (embedded in gravel to facilitate condensate drainage and wrapped in geotextile fabric) which extends through the

sump area towards the east. A similar riser is connected at the end of the perforated pipe and extends back up the slope. Each riser pipe was installed within the 24-inch layer of liner protective soil.

8 SUMMARY

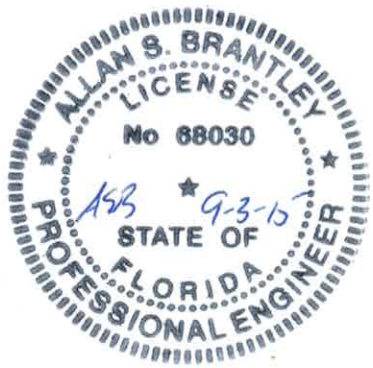
Observation of the construction of Cell 11 at the JED facility was performed by Brantley during the period of February 9, 2015 and August 27, 2015. During this time, CQA personnel monitored the installation of the following components:

- earthwork (Cell 11 subgrade, liner subbase, intercell berms, sump area, protective soil layer, and miscellaneous earthwork);
- geosynthetics in Cell 11; and
- leachate management system (leachate collection and removal system and tie into the existing leachate transmission system).

During construction of the above components, CQA personnel verified that performance and conformance testing was performed at the frequencies required by the CQA Documents and that the installation met or exceeded the requirements of the CQA Documents. CQA personnel also verified that conditions or materials identified as not conforming to the CQA Plan were replaced, repaired, and/or retested, as described in this report.

The results of the CQA activities undertaken by Brantley as described in this report indicate that Cell 11 was constructed in general accordance with the CQA Documents and the solid waste permit issued for the JED facility.

Allan Brantley, Florida P.E. #68030
Certifying Engineer-of-Record



PROJECT FIGURES

Figure 1
Asbuilt Top of Subbase

SEE SHEET 2 FOR CONTROL POINT TABLE

LEGEND:

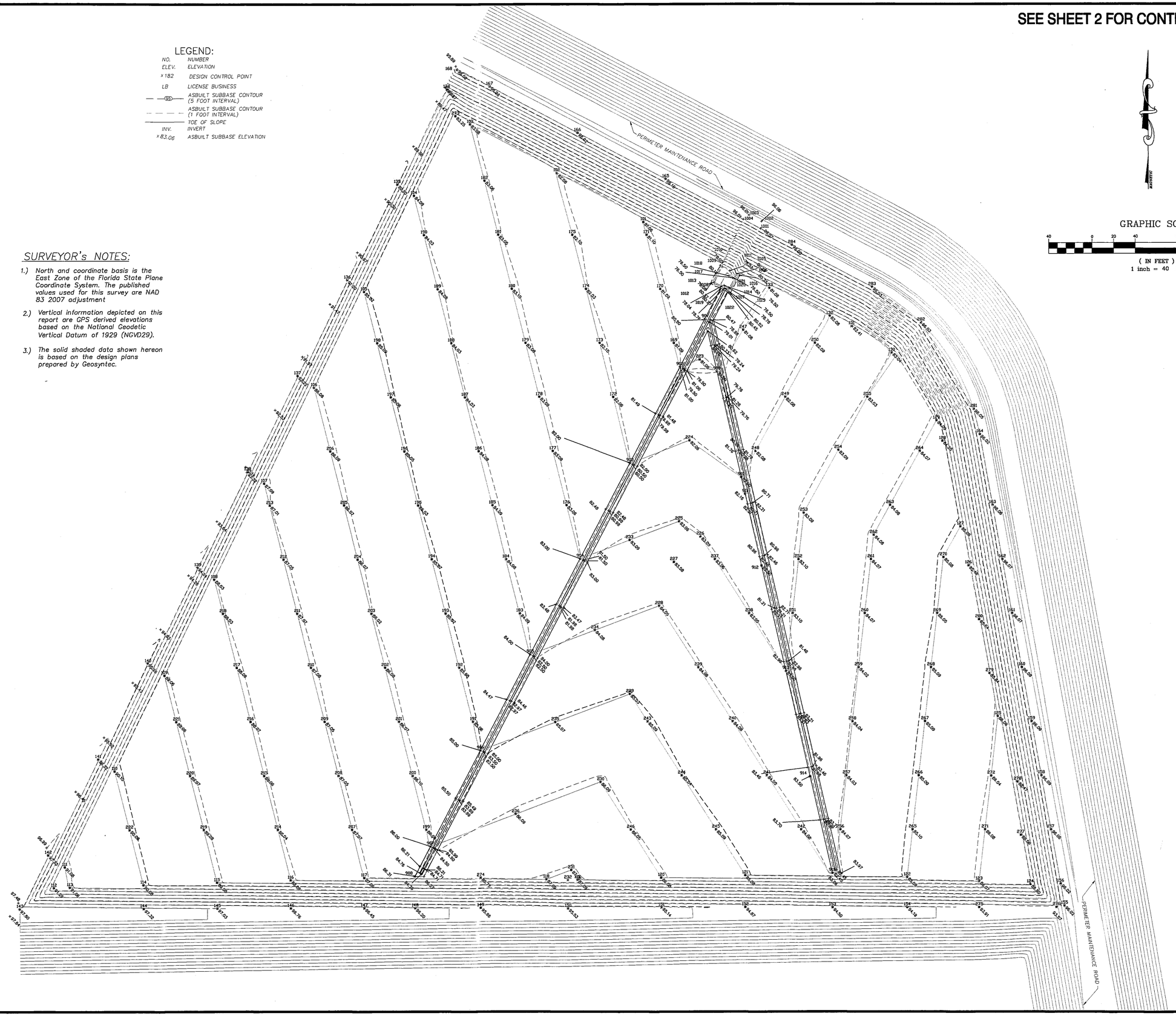
NO.	NUMBER
ELEV.	ELEVATION
×182	DESIGN CONTROL POINT
LB	LICENSE BUSINESS
95	ASBUILT SUBBASE CONTOUR (5 FOOT INTERVAL)
	ASBUILT SUBBASE CONTOUR (1 FOOT INTERVAL)
	TOE OF SLOPE
INV.	INVERT
×83.06	ASBUILT SUBBASE ELEVATION

SURVEYOR's NOTES:

1.) North and coordinate basis is the East Zone of the Florida State Plane Coordinate System. The published values used for this survey are NAD 83 2007 adjustment

2.) Vertical information depicted on this report are GPS derived elevations based on the National Geodetic Vertical Datum of 1929 (NGVD29).

3.) The solid shaded data shown hereon is based on the design plans prepared by Geosyntec.



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Drawn By: DLP | Party Chief: SP | Field Book: 51 | FILE NAME: 1009 csbuilt SUB CELL 11 JED.dwg

Peavey & Associates
SURVEYING & MAPPING P.A.
9399 N LAKE BUFFUM RD
FORT MEADE, FL 33841
PHONE: 863-738-4960
FLORIDA BUSINESS NO.7779

CLIENT:
RCS Excavation, Inc.
851 Lake June Road
Lake Placid, FL 33852

ASBUILT TOP OF SUBBASE
CELL 11 CONSTRUCTION
J.E.D. SOLID WASTE MANGEMENT FACILITY
1501 OMNI WAY ST. CLOUD, FL

DEBORAH L. PEAVEY, P.S.M.
FLORIDA REGISTRATION
NUMBER 6345
FLORIDA BUSINESS
NUMBER 7779
7/3/2015
SURVEY DATE

SCALE	DRAWING NO.
1"=40'	301
PROJECT NO.	SHEET
1009	1

Figure 2
Asbuilt Top of Subbase and Top of Protective Cover
Control Point Table

Design Point Number	Design Northing	Design Easting	Design Subbase Liner Elevation	As-built Subbase Liner Elevation	As-built Final Cover Elevation	Thickness of Protective Cover
101	1354861.76	626526.39	81.00	81.06	83.15	2.09
102	1354907.09	626446.13	82.00	82.08	84.28	2.20
103	1354952.42	626365.88	83.00	83.08	85.31	2.23
104	1354886.27	626313.86	84.00	84.08	86.16	2.08
105	1354797.62	626267.55	85.00	85.07	87.27	2.20
106	1354708.98	626221.23	86.00	86.08	88.20	2.12
107	1354620.33	626174.92	87.00	87.09	89.35	2.26
108	1354531.68	626128.61	88.00	88.03	90.21	2.18
109	1354443.04	626082.29	89.00	89.06	91.16	2.10
110	1354354.39	626035.98	90.00	90.10	92.16	2.06
111	1354265.75	625989.66	91.00	91.08	93.11	2.03
112	1354246.42	625979.56	91.22	91.29	93.54	2.25
113	1354246.89	625994.44	91.00	91.06	93.24	2.18
114	1354249.06	626062.66	90.00	90.08	92.27	2.19
115	1354251.23	626130.89	89.00	89.08	91.15	2.07
116	1354253.40	626199.11	88.00	88.08	90.34	2.26
117	1354255.57	626267.34	87.00	87.06	89.35	2.29
118	1354253.79	626436.09	87.00	87.09	89.37	2.28
119	1354253.48	626465.07	87.00	87.09	89.30	2.21
120	1354255.56	626542.73	86.00	86.08	88.15	2.07
121	1354257.63	626620.39	85.00	85.08	87.29	2.21
122	1354255.84	626770.74	85.00	85.09	87.36	2.27
123	1354252.05	626837.41	86.00	86.07	88.28	2.21
124	1354249.34	626884.98	86.71	86.80	89.35	2.55
125	1354404.78	626854.87	86.00	86.09	88.29	2.20
126	1354544.27	626827.86	85.36	85.46	87.68	2.22
127	1354580.23	626820.30	85.00	85.08	87.31	2.23
128	1354659.24	626803.70	84.21	84.25	86.49	2.24
129	1354678.09	626798.11	84.00	84.09	86.29	2.20
130	1354740.73	626756.52	83.00	83.04	85.27	2.23
131	1354765.36	626719.48	82.34	82.41	84.50	2.09
132	1354774.83	626699.19	82.00	82.08	84.17	2.09
133	1354800.68	626643.25	81.00	81.06	83.14	2.08
134	1354984.64	626344.28	89.18	89.27	91.55	2.28
135	1354896.81	626298.38	90.18	90.20	92.51	2.31
136	1354808.29	626252.12	91.18	91.20	93.25	2.05
137	1354719.77	626205.86	92.19	92.22	94.28	2.06
138	1354631.19	626159.56	93.19	93.22	95.36	2.14
139	1354542.60	626113.26	94.19	94.24	96.36	2.12
140	1354453.99	626066.94	95.20	95.26	97.30	2.04
141	1354365.37	626020.63	96.20	96.22	98.25	2.03
142	1354276.75	625974.31	97.21	97.23	99.30	2.07
143	1354226.87	625948.24	97.77	97.80	99.90	2.10
144	1354227.09	626062.94	97.26	97.32	99.42	2.10
145	1354227.22	626131.25	96.96	97.03	99.20	2.17
146	1354227.35	626199.43	96.66	96.76	98.89	2.13
147	1354227.47	626267.59	96.35	96.45	98.66	2.21
148	1354227.56	626314.64	96.14	96.20	98.72	2.52
149	1354227.68	626375.28	95.87	95.96	98.25	2.29
150	1354227.00	626456.33	95.51	95.53	97.68	2.15
151	1354227.99	626543.01	95.13	95.14	97.26	2.12
152	1354228.14	626620.61	94.78	94.87	97.04	2.17
153	1354228.29	626701.55	94.42	94.50	96.68	2.18
154	1354228.42	626770.97	94.12	94.19	96.23	2.04
155	1354230.01	626916.76	96.00	96.02	98.13	2.11
156	1354250.00	626913.17	96.00	96.02	98.14	2.12
157	1354300.00	626904.18	96.00	96.06	98.12	2.06
158	1354350.00	626895.20	96.00	96.09	98.14	2.05
159	1354400.00	626886.21	96.00	96.09	98.21	2.12
160	1354450.00	626877.23	96.00	96.08	98.15	2.07
161	1354500.00	626868.24	96.00	96.07	98.14	2.07
162	1354550.00	626859.26	96.00	96.07	98.20	2.13
163	1354600.00	626850.28	96.00	96.06	98.20	2.14
164	1354665.49	626838.51	96.00	96.02	98.12	2.10
165	1354901.64	626547.23	96.00	96.10	98.14	2.04
166	1354944.31	626465.59	96.00	96.02	98.11	2.09
167	1354986.98	626383.94	96.00	96.03	98.15	2.12
168	1355002.76	626353.76	96.00	96.02	98.13	2.11
169	1354750.00	626554.71	81.00	81.09	83.16	2.07
170	1354800.00	626542.04	81.00	81.09	83.21	2.12
171	1354850.00	626529.37	81.00	81.10	83.19	2.09
172	1354700.00	626498.61	82.00	82.06	84.16	2.10
173	1354750.00	626485.94	82.00	82.10	84.17	2.07
174	1354800.00	626473.27	82.00	82.03	84.17	2.14
175	1354850.00	626460.60	82.00	82.10	84.10	2.00
176	1354600.00	626455.17	83.00	83.06	85.15	2.09
177	1354650.00	626442.50	83.00	83.08	85.10	2.02
178	1354700.00	626429.83	83.00	83.09	85.15	2.06
179	1354750.00	626417.16	83.00	83.08	85.13	2.05
180	1354800.00	626404.50	83.00	83.10	85.18	2.08
181	1354850.00	626391.83	83.00	83.05	85.11	2.06
182	1354900.00	626379.16	83.00	83.06	85.17	2.11
183	1354500.00	626411.73	84.00	84.09	86.16	2.07
184	1354550.00	626399.06	84.00	84.08	86.20	2.12
185	1354600.00	626386.39	84.00	84.09	86.17	2.08
186	1354650.00	626373.73	84.00	84.08	86.19	2.11
187	1354700.00	626361.06	84.00	84.03	86.22	2.19
188	1354750.00	626348.39	84.00	84.03	86.17	2.14
189	1354800.00	626335.72	84.00	84.08	86.11	2.03

Design Point Number	Design Northing	Design Easting	Design Subbase Liner Elevation	As-built Subbase Liner Elevation	As-built Final Cover Elevation	Thickness of Protective Cover
190	1354850.00	626323.05	84.00	84.03	86.14	2.11
191	1354400.00	626368.29	85.00	85.06	87.13	2.07
192	1354450.00	626355.62	85.00	85.08	87.15	2.07
193	1354500.00	626342.96	85.00	85.07	87.18	2.11
194	1354550.33	626330.20	85.00	85.07	87.12	2.05
195	1354600.00	626317.62	85.00	85.03	87.13	2.10
196	1354650.00	626304.95	85.00	85.05	87.14	2.09
197	1354700.00	626292.28	85.00	85.06	87.15	2.09
198	1354750.00	626279.61	85.00	85.09	87.11	2.02
199	1354300.00	626324.86	86.00	86.09	88.19	2.10
200	1354350.00	626312.19	86.00	86.10	88.17	2.07
201	1354400.00	626299.52	86.00	86.07	88.12	2.05
202	1354450.00	626286.85	86.00	86.08	88.12	2.04
203	1354500.00	626274.18	86.00	86.02	88.13	2.11
204	1354550.00	626261.51	86.00	86.07	88.13	2.06
205	1354600.00	626248.85	86.00	86.07	88.13	2.06
206	1354650.00	626236.18	86.00	86.09	88.18	2.09
207	1354300.00	626256.08	87.00	87.07	89.13	2.06
208	1354350.00	626243.41	87.00	87.05	89.13	2.08
209	1354400.00	626230.74	87.00	87.05	89.13	2.08
210	1354450.00	626218.08	87.00	87.08	89.13	2.05
211	1354500.00	626205.41	87.00	87.07	89.12	2.05
212	1354550.00	626192.74	87.00	87.05	89.14	2.09
213	1354600.00	626180.07	87.00	87.01	89.17	2.16
214	1354300.00	626187.31	88.00	88.04	90.27	2.23
215	1354350.00	626174.64	88.00	88.06	90.26	2.20
216	1354400.00	626161.97	88.00	88.07	90.19	2.12
217	1354450.00	626149.30	88.00	88.08	90.14	2.06
218	1354500.00	626136.63	88.00	88.03	90.14	2.11
219	1354300.00	626118.53	89.00	89.08	91.22	2.14
220	1354350.00	626105.86	89.00	89.07	91.20	2.13
221	1354400.00	626093.20	89.00	89.06	91.12	2.06
222	1354300.00	626049.76	90.00	90.08	92.15	2.07
223	1354734.69	626578.69	81.00	81.08	83.21	2.13
224	1354659.86	626569.08	82.00	82.06	84.23	2.17
225	1354585.02	626559.46	83.00	83.06	85.21	2.15
226	1354570.99	626579.33	83.00	83.05	85.13	2.08
227	1354547.49	626554.64	83.50	83.58	85.71	2.13
228	1354506.89	626541.06	84.00	84.05	86.20	2.15
229	1354425.43	626513.82	85.00	85.03	87.16	2.13
230	1354343.98	626486.58	86.00	86.09	88.18	2.09
231	1354262.52	626459.33	87.00	87.06	89.16	2.10
232	1354253.25	626456.23	87.11	87.20	89.39	2.19
233	1354567.78	626513.58	83.00	83.09	85.24	2.15
234	1354484.40	626481.22	84.00	84.08	86.18	2.10
235	1354399.36	626444.44	85.00	85.07	87.19	2.12
236	1354314.32	626407.66	86.00	86.09	88.16	2.07
237	1354550.00	626592.66	83.00	83.06	85.22	2.16
238	1354500.00	626624.41	83.00	83.05	85.19	2.14
239	1354450.00	626577.19	84.00	84.06	86.14	2.08
240	1354400.00	626608.95	84.00	84.08	86.18	2.10
241	1354350.00	626640.70	84.00	84.05	86.15	2.10
242	1354300.00	626672.46	84.00	84.08	86.21	2.13
243	1354400.00	626529.97	85.00	85.09	87.16	2.07
244	1354350.00	626561.73	85.00	85.04	87.22	2.18
245	1354300.00	626593.48	85.00	85.09	87.21	2.12
246	1354300.00	626514.51	86.00	86.05	88.20	2.15
247	1354762.03	626618.98	81.00	81.08	83.13	2.05
248	1354650.00	626630.38	82.00	82.08	84.15	2.07
249	1354700.00	626657.94	82.00	82.08	84.16	2.08
250	1354750.00	626685.50	82.00	82.09	84.14	2.05
251	1354500.00	626664.46	83.00	83.10	85.15	2.05
252	1354550.00	626670.17	83.00	83.10	85.22	2.12
253	1354593.00	626675.09	83.00	83.09	85.13	2.04
254	1354650.98	626707.04	83.00	83.09	85.16	2.07
255	1354700.00	626734.07	83.00	83.03	85.23	2.20
256	1354300.00	626708.69	84.00	84.07	86.22	2.15
257	1354350.00	626714.41	84.00	84.03	86.20	2.17
258	1354400.00	626720.13	84.00	84.04	86.18	2.14
259	1354450.00	626725.84	84.00	84.02	86.31	2.29
260	1354500.00	626731.56	84.00	84.07	86.16	2.09
261	1354550.00	626737.28	84.00	84.07	86.30	2.23
262	1354572.35	626739.83	84.00	84.08	86.18	2.10
263	1354600.00	626755.07	84.00	84.08	86.15	2.07
264	1354650.00	626782.63	84.00	84.07	86.22	2.15
265	1354300.00	626775.79	85.00	85.10	87.12	2.02
266	1354350.00	626781.51	85.00	85.09	87.20	2.11
267	1354400.00	626787.23	85.00	85.09	87.16	2.07
268	1354450.00	626792.94	85.00	85.09	87.22	2.13
269	1354500.00	626798.66	85.00	85.05	87.12	2.07
270	1354551.70	626804.57	85.00	85.08	87.18	2.10
271	1354300.00	626842.90	86.00	86.08	88.15	2.07
272	1354349.70	626848.58	86.00	86.04	88.14	2.10
273	1354960.03	626352.40	83.17	83.25	85.57	2.32
274	1354255.42	626375.20	86.66	86.75	88.92	2.17
275	1354228.55	626837.62	93.82	93.91	95.97	2.06

Design Point Number	Design Northing	Design Easting	Design Subbase Liner Elevation	As-built Subbase Liner Elevation	As-built Final Cover Elevation	Thickness of Protective Cover
276	1354228.69	626909.38	93.50	93.57	96.34	2.77
277	1354294.86	626876.16	86.50	86.56	88.68	2.12
278	1354344.07	626873.09	88.40	88.47	90.61	2.14
279	1354444.52	626847.18	85.82	85.84	88.04	2.20
280	1354494.36	626837.52	85.59	85.64	87.87	2.23
281	1354688.95	626832.75	96.00	96.05	98.14	2.09
282	1354768.68	626783.90	96.00	96.03	98.13	2.10
283	1354801.69	626738.47	96.00	96.03	98.19	2.16
284	1354840.50	626664.10	96.00	96.08	98.19	2.11

Design Point Number	Design Northing	Design Easting	Design Subbase Liner Elevation	As-built Subbase Liner Elevation	As-built Final Cover Elevation	Thickness of Protective Cover
WEST DITCH						
901	1354772.11	626583.50	80.50	80.50	82.66	2.16
902	1354727.79	626560.34	81.00	81.00	83.10	2.10
903	1354639.17	626514.02	82.00	82.00	84.20	2.20
904	1354550.54	626467.70	83.00	83.00	85.14	2.14
905	1354461.92	626421.38	84.00	84.00	86.20	2.20
906	1354373.29	626375.06	85.00	85.00	87.20	2.20
907	1354284.67	626328.74	86.00	86.00	88.24	2.24
908	1354257.06	626314.31	86.31	86.31	88.54	2.23
909	1354723.38	626594.70	81.00	81.00	83.20	2.20
910	1354625.92	626617.11	82.00	82.00	84.12	2.12
911	1354610.36	626620.69	82.16	82.16	84.28	2.12
912	1354544.03	626635.94	82.50	82.50	84.63	2.13
913	1354446.57	626658.35	83.00	83.00	85.22	2.22
914	1354349.11	626680.76	83.50	83.50	85.70	2.20
915	1354259.79	626701.29	83.96	83.96	86.18	2.22
920	1354420.23	626399.59	84.47	84.47	86.67	2.20
921	1354256.84	626322.66	86.27	86.27	88.59	2.32
922	1354259.95	626319.21	84.76	84.76	-	-
923	1354265.90	626318.93	86.21	86.21	88.44	2.23
924	1354264.69	626321.68	84.71	84.71	-	-
925	1354264.08	626323.06	84.71	84.71	-	-
926	1354262.89	626325.82	86.21	86.21	-	-
927	1354281.45	626335.51	85.99	85.99	-	-
928	1354282.76	626332.82	84.50	84.50	-	-
929	1354283.49	626331.51	84.50	84.50	-	-
930	1354329.28	626352.06	85.50	85.50	87.72	2.22
931	1354328.22	626354.89	83.99	83.99	-	-
932	1354327.63	626356.27	83.99	83.99	-	-
933	1354326.60	626359.12	85.49	85.49	-	-
938	1354371.97	626377.75	83.50	83.50	-	-
939	1354371.32	626379.11	83.50	83.50	-	-
940	1354370.01	626381.81	85.00	85.00	-	-
941	1354417.56	626406.66	84.46	84.46	-	-
942	1354418.63	626403.85	82.97	82.97	-	-
943	1354419.17	626402.42	82.97	82.97	-	-
944	1354460.49	626424.02	82.50	82.50	-	-
945	1354459.79	626425.35	82.50	82.50	-	-
946	1354458.45	626428.03	84.00	84.00	-	-
947	1354505.24	626452.49	83.47	83.47	-	-
948	1354506.31	626449.66	81.98	81.98	-	-
949	1354506.95	626448.30	81.98	81.98	-	-
950	1354508.43	626445.69	83.48	83.48	85.64	2.16
952	1354549.04	626470.30	81.50	81.50	-	-
953	1354548.37	626471.64	81.50	81.50	-	-
954	1354546.99	626474.31	83.00	83.00	-	-
955	1354594.37	626495.68	80.98	80.98	-	-
956	1354594.97	626494.31	80.98	80.98	-	-
957	1354596.39	626491.66	82.48	82.48	84.66	2.18
958	1354637.67	626516.62	80.50	80.50	-	-
959	1354637.01	626517.97	80.50	80.50	-	-
960	1354635.70	626520.67	82.00	82.00	-	-
961	1354681.84	626544.79	81.48	81.48	-	-
962	1354682.90	626541.96	79.98	79.98	-	-
963	1354683.46	626540.55	79.98	79.98	-	-
964	1354684.54	626537.73	81.49	81.49	83.64	2.15
965	1354726.30	626562.95	79.50	79.50	-	-
966	1354725.55	626564.25	79.50	79.50	-	-
967	1354724.12	626566.88	81.00	81.00	-	-
970	1354259.26	626320.54	84.76	84.76	-	-
971	1354593.01	626498.36	82.48	82.48	-	-

Design Point Number	Design Northing	Design Easting	Design Subbase Liner Elevation	As-built Subbase Liner Elevation	As-built Final Cover Elevation	Thickness of Protective Cover
EAST DITCH						
2000	1354259.35	626709.09	83.97	83.97	86.42	2.45
2001	1354262.57	626705.27	82.45	82.45	-	-
2002	1354262.66	626703.71	82.45	82.45	-	-
2003	1354309.98	626697.45	83.71	83.71	-	-
2004	1354309.39	626694.51	82.21	82.21	-	-
2005	1354309.09	626693.05	82.21	82.21	-	-
2006	1354308.50	626690.10	83.70	83.70	85.92	2.22
2007	1354357.24	626678.89	83.46	83.46	85.66	2.20
2008	1354357.84	626681.83	81.98	81.98	-	-
2009	1354358.13	626683.30	81.96	81.96	-	-
2010	1354358.73	626686.24	83.46	83.46	-	-
2011	1354407.47	626675.04	83.21	83.21	-	-
2012	1354406.88	626672.09	81.71	81.71	-	-
2013	1354406.58	626670.62	81.83	81.83	-	-
2014	1354405.99	626667.68	83.21	83.21	85.42	2.21
2015	1354454.74	626656.47	82.96	82.96	85.17	2.21
2016	1354455.33	626659.41	81.46	81.46	-	-
2017	1354455.64	626660.88	81.46	81.46	-	-
2018	1354456.22	626663.83	82.96	82.96	-	-
2019	1354504.97	626652.62	82.71	82.71	-	-
2020	1354504.38	626649.67	81.21	81.21	-	-
2021	1354504.10	626648.20	81.21	81.21	-	-
2022	1354503.48	626645.26	82.71	82.71	84.88	2.17
2023	1354552.23	626634.06	82.46	82.46	84.59	2.13
2024	1354552.79	626637.00	80.96	80.96	-	-
2025	1354553.14	626638.46	80.96	80.96	-	-
2026	1354553.71	626641.41	82.46	82.46	-	-
2027	1354602.46	626630.20	82.21	82.21	-	-
2028	1354601.85	626627.26	80.71	80.71	-	-
2029	1354601.56	626625.79	80.71	80.71	-	-
2030	1354600.97	626622.85	82.21	82.21	84.33	2.12
2031	1354649.75	626611.63	81.76	81.76	83.89	2.13
2032	1354650.34	626614.57	80.26	80.26	-	-
2033	1354650.64	626616.04	80.26	80.26	-	-
2034	1354651.20	626618.99	81.76	81.76	-	-
2035	1354699.95	626607.78	81.26	81.26	-	-
2036	1354699.37	626604.84	79.76	79.76	-	-
2037	1354699.06	626603.37	79.76	79.76	-	-
2038	1354698.54	626600.41	81.25	81.25	83.43	2.18
2039	1354747.22	626589.22	80.76	80.76	82.91	2.15
2040	1354747.81	626592.16	79.24	79.24	-	-
2041	1354748.10	626593.63	79.24	79.24	-	-
2042	1354748.70	626596.58	80.73	80.73	-	-
2043	1354771.09	626591.43	80.47	80.47	82.61	2.14
2044	1354760.86	626586.09	80.62	80.62	82.75	2.13
2045	1354771.50	626588.26	78.98	78.98	-	-
2046	1354769.45	626587.19	79.01	79.01	-	-
2047	1354770.57	626586.08	79.00	79.00	-	-
2048	1354771.41	626583.14	80.51	80.51	82.67	2.16
2050	1354775.69	626593.83	80.42	80.42	-	-
2051	1354776.65	626591.12	79.00	79.00	-	-
2052	1354777.14	626589.52	78.93	78.93	-	-
2053	1354778.72	626586.96	80.42	80.42	82.75	2.33
2054	1354798.32	626597.20	80.20	80.20	82.52	2.32
2055	1354796.72	626599.75	78.71	78.71	-	-
2056	1354796.00	626601.07	78.71	78.71	-	-
2057	1354795.05	626603.96	80.20	80.20	82.65	2.45

NO. | DATE | REVISION

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Drawn By: DLP
Party Chief: SP
Field Book: 51
FILE NAME: 1009 asbuilt SUB CELL 11 JED.dwg

Peavey & Associates
SURVEYING & MAPPING PA
9399 N LAKE BUFFUM RD
FORT MEADE, FL 33841
PHONE: 863-736-4960
FLORIDA BUSINESS NO:7779

CLIENT:
RCS Excavation, Inc.
851 Lake June Road
Lake Placid, FL 33852

ASBUILT TOP OF SUBBASE AND TOP OF PROTECTIVE COVER CONTROL POINT TABLE CELL 11 CONSTRUCTION

J.E.D. SOLID WASTE MANGEMENT FACILITY
1501 OMNI WAY ST. CLOUD, FL

DEBORAH L. PEAVEY, P.S.M.
FLORIDA REGISTRATION NUMBER 6345
FLORIDA BUSINESS NUMBER 7779
7/3/2015
SURVEY DATE

SCALE | DRAWING NO. 301
PROJECT NO. 1009 | SHEET 2

Figure 3
Asbuilt Leak Detection System

Design Point Number	Design Northing	Design Easting	Design Subbase Liner Elevation	As-built Subbase Liner Elevation	As-built Final Cover Elevation	Thickness of Protective Cover
EAST DITCH						
2000	1354259.35	626709.09	83.97	83.97	86.42	2.45
2001	1354262.57	626705.27	82.45	82.45	-	-
2002	1354262.66	626703.71	82.45	82.45	-	-
2003	1354309.98	626697.45	83.71	83.71	-	-
2004	1354309.39	626694.51	82.21	82.21	-	-
2005	1354309.09	626693.05	82.21	82.21	-	-
2006	1354308.50	626690.10	83.70	83.70	85.92	2.22
2007	1354357.24	626678.89	83.46	83.46	85.66	2.20
2008	1354357.84	626681.83	81.98	81.98	-	-
2009	1354358.13	626683.30	81.96	81.96	-	-
2010	1354358.73	626686.24	83.46	83.46	-	-
2011	1354407.47	626675.04	83.21	83.21	-	-
2012	1354406.88	626672.09	81.71	81.71	-	-
2013	1354406.58	626670.62	81.83	81.83	-	-
2014	1354405.99	626667.68	83.21	83.21	85.42	2.21
2015	1354454.74	626656.47	82.96	82.96	85.17	2.21
2016	1354455.33	626659.41	81.46	81.46	-	-
2017	1354455.64	626660.88	81.46	81.46	-	-
2018	1354456.22	626663.83	82.96	82.96	-	-
2019	1354504.97	626652.62	82.71	82.71	-	-
2020	1354504.38	626649.67	81.21	81.21	-	-
2021	1354504.10	626648.20	81.21	81.21	-	-
2022	1354503.48	626645.26	82.71	82.71	84.88	2.17
2023	1354552.23	626634.06	82.46	82.46	84.59	2.13
2024	1354552.79	626637.00	80.96	80.96	-	-
2025	1354553.14	626638.46	80.96	80.96	-	-
2026	1354553.71	626641.41	82.46	82.46	-	-
2027	1354602.46	626630.20	82.21	82.21	-	-
2028	1354601.85	626627.26	80.71	80.71	-	-
2029	1354601.56	626625.79	80.71	80.71	-	-
2030	1354600.97	626622.85	82.21	82.21	84.33	2.12
2031	1354649.75	626611.63	81.76	81.76	83.89	2.13
2032	1354650.34	626614.57	80.26	80.26	-	-
2033	1354650.64	626616.04	80.26	80.26	-	-
2034	1354651.20	626618.99	81.76	81.76	-	-
2035	1354699.95	626607.78	81.26	81.26	-	-
2036	1354699.37	626604.84	79.76	79.76	-	-
2037	1354699.06	626603.37	79.76	79.76	-	-
2038	1354698.54	626600.41	81.25	81.25	83.43	2.18
2039	1354747.22	626589.22	80.76	80.76	82.91	2.15
2040	1354747.81	626592.16	79.24	79.24	-	-
2041	1354748.10	626593.63	79.24	79.24	-	-
2042	1354748.70	626596.58	80.73	80.73	-	-
2043	1354771.09	626591.43	80.47	80.47	82.61	2.14
2044	1354760.86	626586.09	80.62	80.62	82.75	2.13
2045	1354771.50	626588.26	78.98	78.98	-	-
2046	1354769.45	626587.19	79.01	79.01	-	-
2047	1354770.57	626586.08	79.00	79.00	-	-
2048	1354771.41	626583.14	80.51	80.51	82.67	2.16
2050	1354775.69	626593.83	80.42	80.42	-	-
2051	1354776.65	626591.12	79.00	79.00	-	-
2052	1354777.14	626589.52	78.93	78.93	-	-
2053	1354778.72	626586.96	80.42	80.42	82.75	2.33
2054	1354798.32	626597.20	80.20	80.20	82.52	2.32
2055	1354796.72	626599.75	78.71	78.71	-	-
2056	1354796.00	626601.07	78.71	78.71	-	-
2057	1354795.05	626603.96	80.20	80.20	82.65	2.45
WEST DITCH						
901	1354772.11	626583.50	80.50	80.50	82.66	2.16
902	1354727.79	626560.34	81.00	81.00	83.10	2.10
903	1354639.17	626514.02	82.00	82.00	84.20	2.20
904	1354550.54	626467.70	83.00	83.00	85.14	2.14
905	1354461.92	626421.38	84.00	84.00	86.20	2.20
906	1354373.29	626375.06	85.00	85.00	87.20	2.20
907	1354284.67	626328.74	86.00	86.00	88.24	2.24
908	1354257.06	626314.31	86.31	86.31	88.54	2.23
909	1354723.38	626594.70	81.00	81.00	83.20	2.20
910	1354625.92	626617.11	82.00	82.00	84.12	2.12
911	1354610.36	626620.69	82.16	82.16	84.28	2.12
912	1354544.03	626635.94	82.50	82.50	84.63	2.13
913	1354446.57	626658.35	83.00	83.00	85.22	2.22
914	1354349.11	626680.76	83.50	83.50	85.70	2.20
915	1354259.79	626701.29	83.96	83.96	86.18	2.22
920	1354420.23	626399.59	84.47	84.47	86.67	2.20
921	1354256.84	626322.66	86.27	86.27	88.59	2.32
922	1354259.95	626319.21	84.76	84.76	-	-
923	1354265.90	626318.93	86.21	86.21	88.44	2.23
924	1354264.69	626321.68	84.71	84.71	-	-
925	1354264.08	626323.06	84.71	84.71	-	-
926	1354262.89	626325.82	86.21	86.21	-	-
927	1354281.45	626335.51	85.99	85.99	-	-
928	1354282.76	626332.82	84.50	84.50	-	-
929	1354283.49	626331.51	84.50	84.50	-	-
930	1354329.28	626352.06	85.50	85.50	87.72	2.22
931	1354328.22	626354.89	83.99	83.99	-	-
932	1354327.63	626356.27	83.99	83.99	-	-
933	1354326.60	626359.12	85.49	85.49	-	-
938	1354371.97	626377.75	83.50	83.50	-	-
939	1354371.32	626379.11	83.50	83.50	-	-
940	1354370.01	626381.81	85.00	85.00	-	-
941	1354417.56	626406.66	84.46	84.46	-	-
942	1354418.63	626403.85	82.97	82.97	-	-
943	1354419.17	626402.42	82.97	82.97	-	-
944	1354460.49	626424.02	82.50	82.50	-	-
945	1354459.79	626425.55	82.50	82.50	-	-
946	1354458.45	626428.03	84.00	84.00	-	-
947	1354505.24	626452.49	83.47	83.47	-	-
948	1354506.31	626449.66	81.98	81.98	-	-
949	1354506.95	626448.30	81.98	81.98	-	-
950	1354508.43	626445.69	83.48	83.48	85.64	2.16
952	1354549.04	626470.30	81.50	81.50	-	-
953	1354548.37	626471.64	81.50	81.50	-	-
954	1354546.99	626474.31	83.00	83.00	-	-
955	1354594.37	626495.68	80.98	80.98	-	-
956	1354594.97	626494.31	80.98	80.98	-	-
957	1354596.39	626491.66	82.48	82.48	84.66	2.18
958	1354637.67	626516.62	80.50	80.50	-	-
959	1354637.01	626517.97	80.50	80.50	-	-
960	1354635.70	626520.67	82.00	82.00	-	-
961	1354681.84	626544.79	81.48	81.48	-	-
962	1354682.90	626541.96	79.98	79.98	-	-
963	1354683.46	626540.55	79.98	79.98	-	-
964	1354684.54	626537.73	81.49	81.49	83.64	2.15
965	1354726.30	626562.95	79.50	79.50	-	-
966	1354725.55	626564.25	79.50	79.50	-	-
967	1354724.12	626566.88	81.00	81.00	-	-
970	1354259.26	626320.54	84.76	84.76	-	-
971	1354593.01	626498.36	82.48	82.48	-	-

LEGEND:

NO.	NUMBER
ELEV.	ELEVATION
×182	DESIGN CONTROL POINT
LB	LICENSE BUSINESS
95	ASBUILT SUBBASE CONTOUR (5 FOOT INTERVAL)
	ASBUILT SUBBASE CONTOUR (1 FOOT INTERVAL)
	TOE OF SLOPE
INV.	INVERT
×83.06	ASBUILT SUBBASE ELEVATION

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

SURVEYOR's NOTES:

1.) North and coordinate basis is the East Zone of the Florida State Plane Coordinate System. The published values used for this survey are NAD 83 2007 adjustment

2.) Vertical information depicted on this report are GPS derived elevations based on the National Geodetic Vertical Datum of 1929 (NGVD29).

LEAK DETECTION

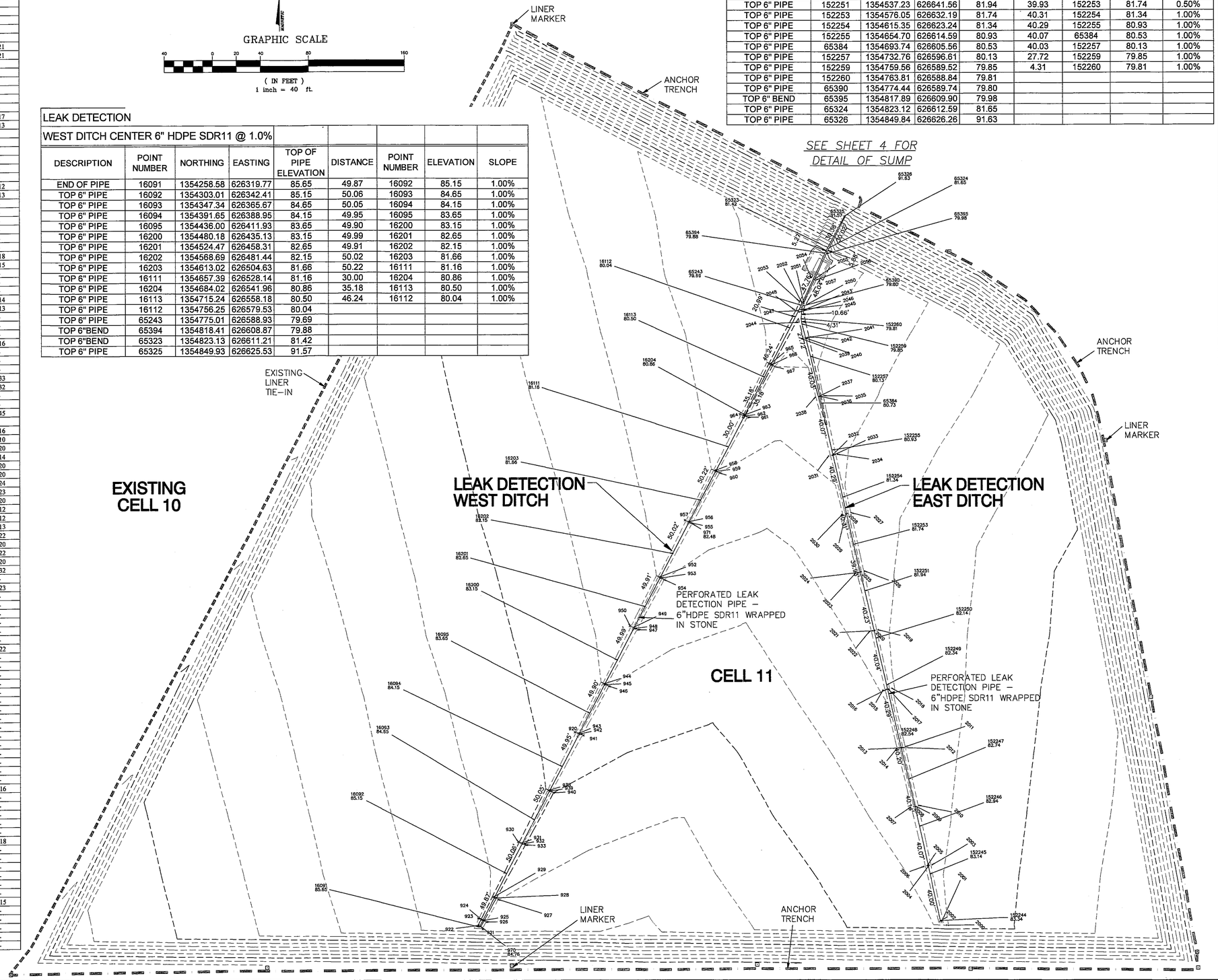
WEST DITCH CENTER 6" HDPE SDR11 @ 1.0%

DESCRIPTION	POINT NUMBER	NORTHING	EASTING	TOP OF PIPE ELEVATION	DISTANCE	POINT NUMBER	ELEVATION	SLOPE
END OF PIPE	16091	1354258.58	626319.77	85.65	49.87	16092	85.15	1.00%
TOP 6" PIPE	16092	1354303.01	626342.41	85.15	50.06	16093	84.65	1.00%
TOP 6" PIPE	16093	1354347.34	626365.67	84.65	50.05	16094	84.15	1.00%
TOP 6" PIPE	16094	1354391.65	626388.95	84.15	49.95	16095	83.65	1.00%
TOP 6" PIPE	16095	1354436.00	626411.93	83.65	49.90	16200	83.15	1.00%
TOP 6" PIPE	16200	1354480.18	626435.13	83.15	49.99	16201	82.65	1.00%
TOP 6" PIPE	16201	1354524.47	626458.31	82.65	49.91	16202	82.15	1.00%
TOP 6" PIPE	16202	1354568.69	626481.44	82.15	50.02	16203	81.66	1.00%
TOP 6" PIPE	16203	1354613.02	626504.63	81.66	50.22	16111	81.16	1.00%
TOP 6" PIPE	16111	1354657.39	626528.14	81.16	30.00	16204	80.86	1.00%
TOP 6" PIPE	16204	1354684.02	626541.96	80.86	35.18	16113	80.50	1.00%
TOP 6" PIPE	16113	1354715.24	626558.18	80.50	46.24	16112	80.04	1.00%
TOP 6" PIPE	16112	1354756.25	626579.53	80.04				
TOP 6" PIPE	65243	1354775.01	626588.93	79.69				
TOP 6"BEND	65394	1354818.41	626608.87	79.88				
TOP 6"BEND	65323	1354823.13	626611.21	81.42				
TOP 6" PIPE	65325	1354849.93	626625.53	91.57				

LEAK DETECTION

EAST DITCH CENTER 6" HDPE SDR11 @ 0.5% AND 1.0%

DESCRIPTION	POINT NUMBER	NORTHING	EASTING	TOP OF PIPE ELEVATION	DISTANCE	POINT NUMBER	ELEVATION	SLOPE
TOP 6" PIPE	152244	1354263.30	626704.06	83.34	40.00	152245	83.14	0.50%
TOP 6" PIPE	152245	1354302.37	626695.48	83.14	40.07	152246	82.94	0.50%
TOP 6" PIPE	152246	1354341.42	626686.48	82.94	40.14	152247	82.74	0.50%
TOP 6" PIPE	152247	1354380.58	626677.64	82.74	40.20	152248	82.54	0.50%
TOP 6" PIPE	152248	1354419.70	626668.42	82.54	40.29	152249	82.34	0.50%
TOP 6" PIPE	152249	1354459.01	626659.57	82.34	40.04	152250	82.14	0.50%
TOP 6" PIPE	152250	1354498.02	626650.53	82.14	40.23	152251	81.94	0.50%
TOP 6" PIPE	152251	1354537.23	626641.56	81.94	39.93	152253	81.74	0.50%
TOP 6" PIPE	152253	1354576.05	626632.19	81.74	40.31	152254	81.34	1.00%
TOP 6" PIPE	152254	1354615.35	626623.24	81.34	40.29	152255	80.93	1.00%
TOP 6" PIPE	152255	1354654.70	626614.59	80.93	40.07	65384	80.53	1.00%
TOP 6" PIPE	65384	1354693.74	626605.56	80.53	40.03	152257	80.13	1.00%
TOP 6" PIPE	152257	1354732.76	626596.61	80.13	27.72	152259	79.85	1.00%
TOP 6" PIPE	152259	1354759.56	626589.52	79.85	4.31	152260	79.81	1.00%
TOP 6" PIPE	152260	1354763.81	626588.84	79.81				
TOP 6" PIPE	65390	1354774.44	626589.74	79.80				
TOP 6" BEND	65395	1354817.89	626609.90	79.98				
TOP 6" PIPE	65324	1354823.12	626612.59	81.65				
TOP 6" PIPE	65326	1354849.84	626626.26	91.63				



NO.	DATE	REVISION

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Drawn By: DLP | Party Chief: SP | Field Book: 51

FILE NAME: 1009 ASBUILT CELL 11 SW PIPE.dwg

Peavey & Associates
SURVEYING & MAPPING P.A
9399 N. LAKE BUFFUM RD
LAKE PLACID, FL 33841
PHONE: 863-738-4960
FLORIDA BUSINESS NO.7779

CLIENT:
RCS Excavation, Inc.
851 Lake June Road
Lake Placid, FL 33852

ASBUILT LEAK DETECTION SYSTEM
CELL 11 CONSTRUCTION
J.E.D. SOLID WASTE MANGEMENT FACILITY
1501 OMNI WAY ST. CLOUD, FL

DEBORAH L. PEAVEY P.S.M.
FLORIDA REGISTRATION NUMBER 6345
FLORIDA BUSINESS NUMBER 7779
5/20/2015
SURVEY DATE

SCALE	DRAWING NO.
1"=40'	301
PROJECT NO.	SHEET
1009	3

Figure 4
Asbuilt Leachate Collection & Sump

SURVEYOR's NOTES:

1.) North and coordinate basis is the East Zone of the Florida State Plane Coordinate System. The published values used for this survey are NAD 83 2007 adjustment

2.) Vertical information depicted on this report are GPS derived elevations based on the National Geodetic Vertical Datum of 1929 (NGVD29).

LEGEND:

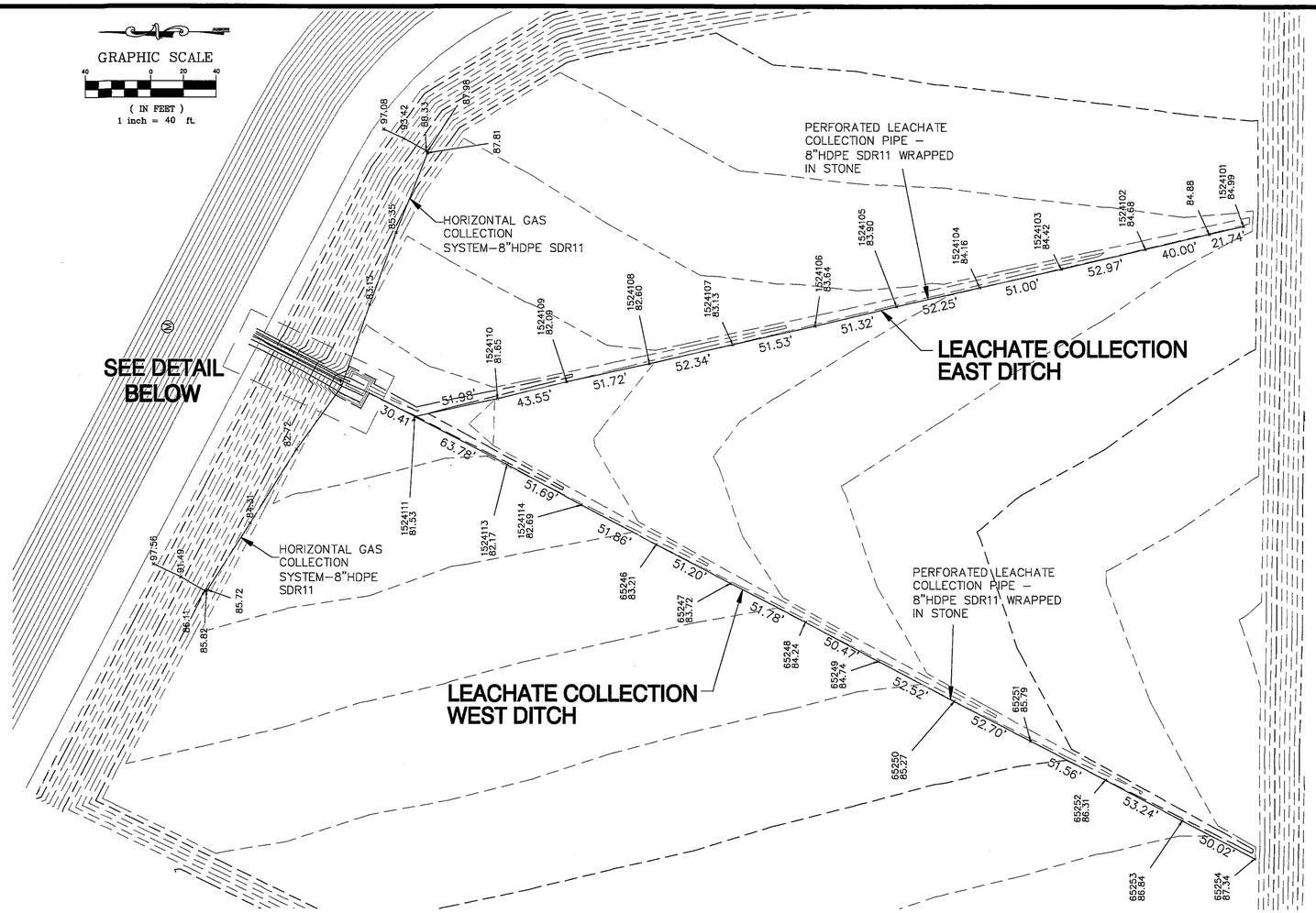
NO.	NUMBER
ELEV.	ELEVATION
×182	DESIGN CONTROL POINT
LB	LICENSE BUSINESS
	ASBUILT SUBBASE CONTOUR (5 FOOT INTERVAL)
	ASBUILT SUBBASE CONTOUR (1 FOOT INTERVAL)
	TOE OF SLOPE
INV.	INVERT
×83.06	ASBUILT SUBBASE ELEVATION

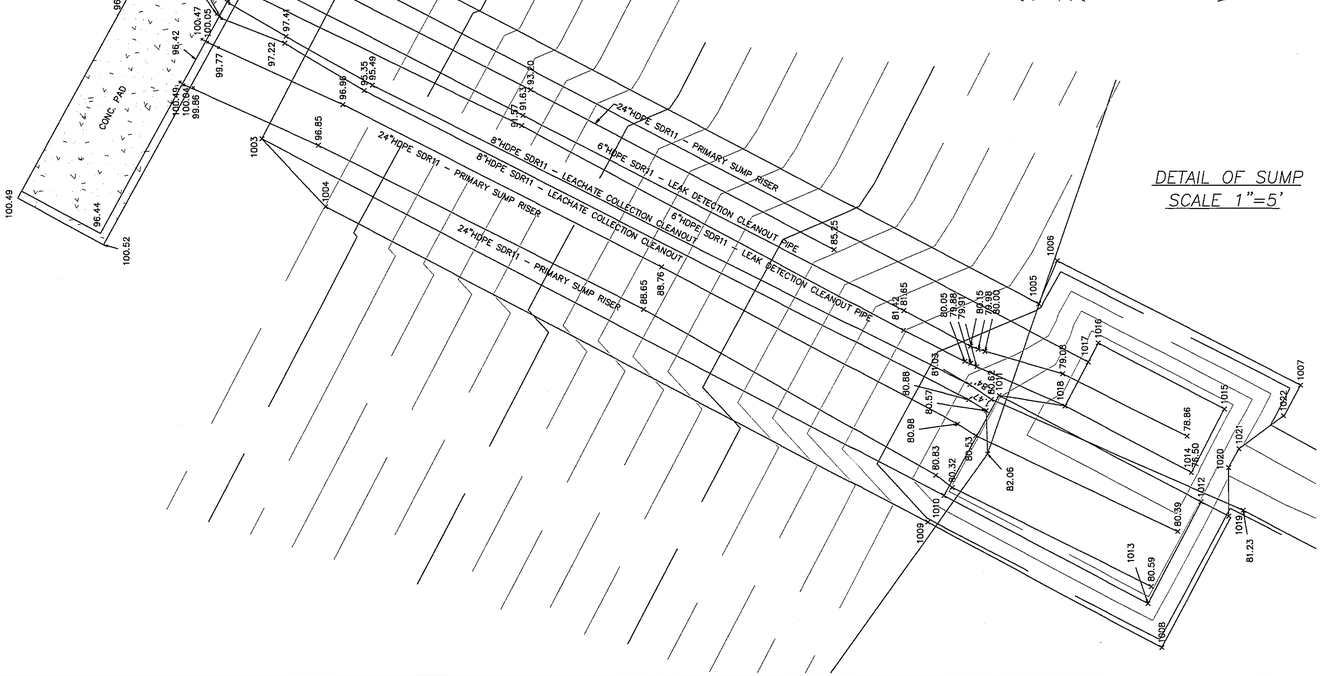
GRAPHIC SCALE

40 0 20 40

(IN FEET)

1 inch = 40 ft.





DETAIL OF SUMP
SCALE 1"=5'

SUMP CONTROL TABLE

Design Point Number	Design Northing	Design Easting	Design Subbase Liner Elevation	As-built Subbase Liner Elevation	As-built Final Cover Elevation	Thickness of Protective Cover
1001	1354855.73	626635.08	96.00	96.07	98.19	2.12
1002	1354862.12	626636.17	96.00	96.06	98.92	2.86
1003	1354868.14	626624.64	96.00	96.01	99.00	2.99
1004	1354863.67	626619.88	96.00	96.01	98.16	2.15
1005	1354813.65	626613.09	80.18	80.23	82.92	2.69
1006	1354812.35	626616.11	80.26	80.35	82.94	2.59
1007	1354795.28	626607.41	80.45	80.52	82.69	2.17
1008	1354804.97	626589.06	80.30	80.37	82.46	2.09
1009	1354821.42	626597.80	80.11	80.18	83.20	3.02
1010	1354820.28	626599.65	78.00	78.05	83.16	5.11
1011	1354816.42	626606.66	78.00	78.03	82.86	4.83
1012	1354802.24	626599.25	78.00	78.04	82.18	4.14
1013	1354805.94	626592.16	78.00	78.08	82.22	4.14
1014	1354802.93	626601.30	76.50	76.50	82.17	5.67
1015	1354800.62	626605.73	76.50	76.50	82.33	5.83
1016	1354809.48	626610.36	76.50	76.50	82.22	5.72
1017	1354810.18	626609.02	76.50	76.50	82.18	5.68
1018	1354811.79	626605.93	76.50	76.50	82.08	5.58
1019	1354800.31	626598.24	80.18	80.27	82.28	2.01
1020	1354800.32	626601.63	78.67	78.76	82.29	3.53
1021	1354799.59	626602.94	78.67	78.76	82.44	3.68
1022	1354796.47	626605.26	80.39	80.45	82.65	2.20

LEACHATE COLLECTION
WEST DITCH CENTER 8" HDPE SDR11 @ 1.0%

DESCRIPTION	POINT NUMBER	NORTHING	EASTING	TOP OF PIPE ELEVATION	DISTANCE	POINT NUMBER	ELEVATION	SLOPE
END OF PIPE	65254	1354257.88	626314.99	87.34	50.02	65253	86.84	1.00%
TOP 8" PIPE	65253	1354302.25	626338.09	86.84	53.24	65252	86.31	1.00%
TOP 8" PIPE	65252	1354349.27	626363.04	86.31	51.56	65251	85.79	1.00%
TOP 8" PIPE	65251	1354395.10	626386.67	85.79	52.70	65250	85.27	1.00%
TOP 8" PIPE	65250	1354441.90	626410.90	85.27	52.52	65249	84.74	1.00%
TOP 8" PIPE	65249	1354488.38	626435.36	84.74	50.47	65248	84.24	1.00%
TOP 8" PIPE	65248	1354532.83	626459.28	84.24	51.78	65247	83.72	1.00%
TOP 8" PIPE	65247	1354578.97	626482.78	83.72	51.20	65246	83.21	1.00%
TOP 8" PIPE	65246	1354624.41	626506.35	83.21	51.86	1524114	82.69	1.00%
TOP 8" PIPE	1524114	1354670.25	626530.60	82.69	51.69	1524113	82.17	1.00%
TOP 8" PIPE	1524113	1354715.69	626555.25	82.17	63.78	1524111	81.53	1.00%
TOP 8" PIPE	1524111	1354772.31	626584.60	81.53	30.41	1524121	81.23	1.00%
TOP 8" PIPE	1524121	1354799.29	626598.64	81.23				

LEACHATE COLLECTION
EAST DITCH CENTER 8" HDPE SDR11 @ 0.5% AND 1.0%

DESCRIPTION	POINT NUMBER	NORTHING	EASTING	TOP OF PIPE ELEVATION	DISTANCE	POINT NUMBER	ELEVATION	SLOPE
END OF PIPE	1524101	1354265.15	626701.19	84.99	21.74	1524100	84.88	0.50%
TOP 8" PIPE	1524100	1354286.31	626696.22	84.88	40.00	1524102	84.68	0.50%
TOP 8" PIPE	1524102	1354325.25	626687.09	84.68	52.97	1524103	84.42	0.50%
TOP 8" PIPE	1524103	1354376.80	626674.90	84.42	51.00	1524104	84.16	0.50%
TOP 8" PIPE	1524104	1354426.51	626663.49	84.16	52.25	1524105	83.90	0.50%
TOP 8" PIPE	1524105	1354477.45	626651.88	83.90	51.32	1524106	83.64	0.50%
TOP 8" PIPE	1524106	1354527.41	626640.12	83.64	51.53	1524107	83.13	1.00%
TOP 8" PIPE	1524107	1354577.63	626628.58	83.13	52.34	1524108	82.60	1.00%
TOP 8" PIPE	1524108	1354628.68	626617.01	82.60	51.72	1524109	82.09	1.00%
TOP 8" PIPE	1524109	1354679.17	626605.81	82.09	43.55	1524110	81.65	1.00%
TOP 8" PIPE	1524110	1354721.49	626595.50	81.65				

REVISION	DATE	NO.

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Drawn By: DLP | Party Chief: SP | Field Book: 51

FILE NAME: 1009 ASBUILT CELL 11 BIN PIPE.dwg

Peavey & Associates
SURVEYING & MAPPING P.A.
9399 N LAKE BUFFUM RD
FORT MEADE, FL 33841
PHONE: 863-738-4980
FLORIDA BUSINESS NO.7779

CLIENT:
RCS Excavation, Inc.
851 Lake June Road
Lake Placid, FL 33852

ASBUILT LEACHATE COLLECTION & SUMP
CELL 11 CONSTRUCTION
J.E.D. SOLID WASTE MANGEMENT FACILITY
1501 OMNI WAY ST. CLOUD, FL

DEBORAH L. PEAVEY, P.S.M.
FLORIDA REGISTRATION NUMBER 6345
FLORIDA BUSINESS NUMBER 7779

7/3/2015
SURVEY DATE

SCALE	DRAWING NO.
1"=40'	301
PROJECT NO.	SHEET
1009	4

Figure 5
Asbuilt Top of Protective Cover

LEGEND:

NO.	NUMBER
ELEV.	ELEVATION
×182	DESIGN CONTROL POINT
LB	LICENSE BUSINESS
—(95)—	ASBUILT TOP OF PROTECTIVE COVER CONTOUR (5 FOOT INTERVAL)
- - - -	ASBUILT TOP OF PROTECTIVE COVER CONTOUR (1 FOOT INTERVAL)
———	TOE OF SLOPE
INV. ×83.06	INVERT ASBUILT TOP OF PROTECTIVE COVER ELEVATION

SURVEYOR'S NOTES:

1.) North and coordinate basis is the East Zone of the Florida State Plane Coordinate System. The published values used for this survey are NAD 83 2007 adjustment

2.) Vertical information depicted on this report are GPS derived elevations based on the National Geodetic Vertical Datum of 1929 (NGVD29).

EXISTING CELL 10

CELL 11

SEE SHEET 4 FOR DETAIL OF SUMP

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Drawn By: DLP | Party Chief: SP | Field Book: 51

FILE NAME: 1009 asbuilt FINAL COVER CELL 11 JED

Peavey & Associates
SURVEYING & MAPPING PA
9396 N LAKE BUFFUM RD
FORT MEADE, FL 33841
PHONE: 863-738-4960
FLORIDA BUSINESS NO.7779

CLIENT:
RCS Excavation, Inc.
851 Lake June Road
Lake Placid, FL 33852

ASBUILT TOP OF PROTECTIVE COVER
CELL 11 CONSTRUCTION
J.E.D. SOLID WASTE MANGEMENT FACILITY
1501 OMNI WAY ST. CLOUD, FL

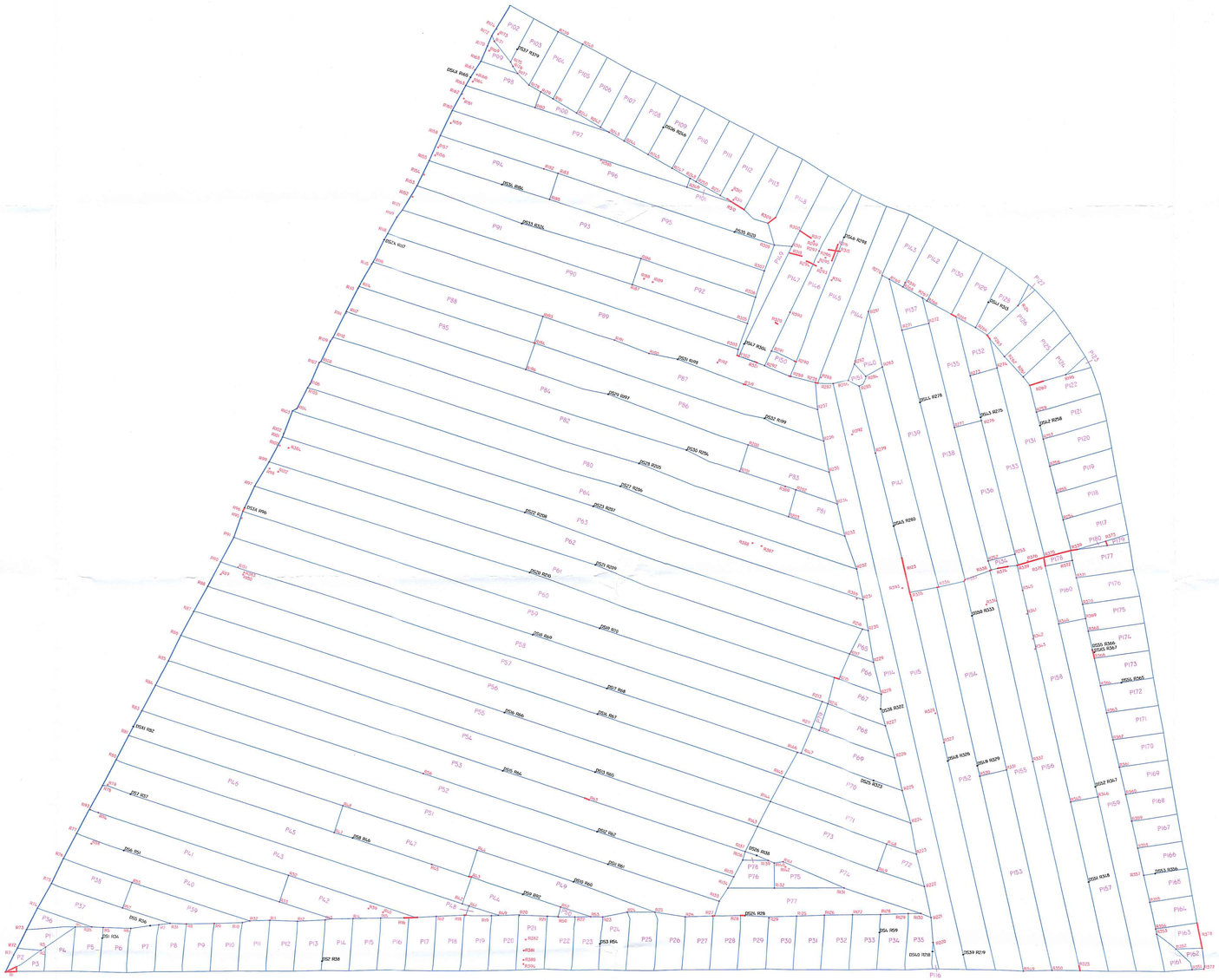
DEBORAH L. PEAVEY, P.S.M.
FLORIDA REGISTRATION NUMBER 5545
FLORIDA BUSINESS NUMBER 7779

8/16/2015
SURVEY DATE

SCALE	DRAWING NO.
1"=40'	301
PROJECT NO.	SHEET
1009	5

Figure 6
Cell 11 Secondary Layer 60 Mil HDPE As-built

NORTH



LEGEND			
P PANEL NUMBER		CAP	
R REPAIR NUMBER	O	PATCH	
DS DESTRUCTIVE SAMPLE NUMBER	O	DESTRUCTIVE TEST	
		EXTRUSION WELD	

CELL II
SECONDARY LINER
AS BUILT

JED LANDFILL
1501 OMNI WAY
ST. CLOUD, FLORIDA

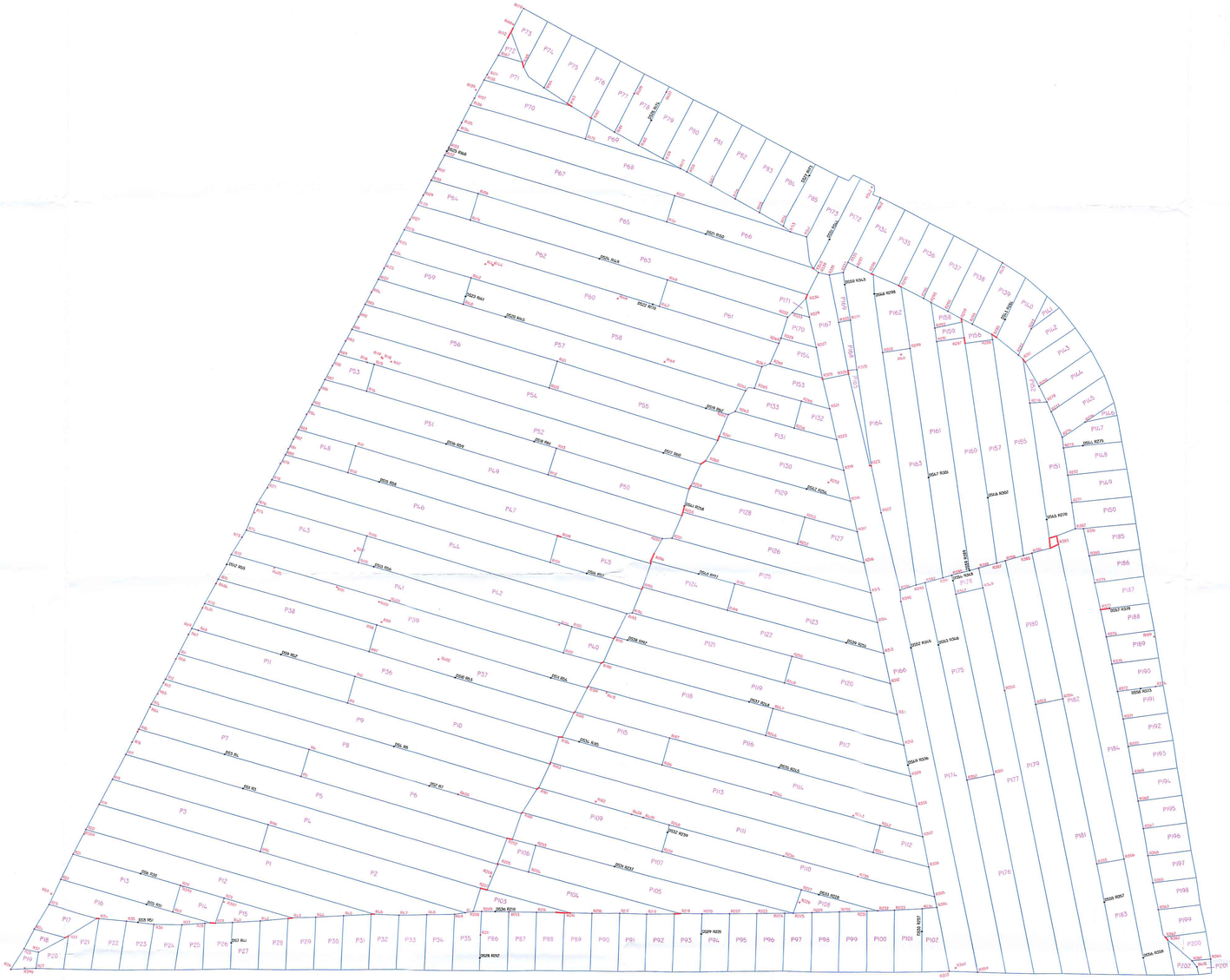
COMANCO®
ENVIRONMENTAL CORPORATION
4301 STERLING COMMERCE DR.
PLANT CITY, FL 33566-7372
TELEPHONE: (813) 988-8829
FAX: (813) 496-7305

DRAWN BY: RML	CHKD. BY: RML	DWG. NO:	
DATE: 08-14-2015	APPROV. BY: RML		
PLOT SCALE: 1" = 50'	FILE NAME: JED LANDFILL CELL 11	6	
PROJECT NO.: 07157213			

ALAN B. BRANTLEY
LICENSE
No. 66030
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Figure 7
Cell 11 Primary Layer 60 Mil HDPE As-built

NORTH



LEGEND			
P PANEL NUMBER		CAP	
R REPAIR NUMBER		PATCH	
DS DESTRUCTIVE SAMPLE NUMBER		DESTRUCTIVE TEST	
		EXTRUSION WELD	

CELL II
PRIMARY LINER
AS BUILT

JED LANDFILL
1501 OMNI WAY
ST. CLOUD, FLORIDA

COMANCO®
ENVIRONMENTAL CORPORATION
4301 STERLING COMMERCE DR.
PLANT CITY, FL 33566-7372
TELEPHONE: (813) 988-8829
FAX: (813) 496-7305

DRAWN BY: RML	CHKD. BY: RML	DWG. NO: 7
DATE: 08/14/2015	APPRVD. BY: RML	
PLOT SCALE: 1" = 50'	FILE NAME: JED LANDFILL	
PROJECT NO.: 07147213	CELL 11	

ALAN S. BRANTLEY
LICENSE
NO. 68030
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

LIST OF APPENDICIES

APPENDIX A
Listing of CQA Monitoring and Installation Personnel

Section 1
Brantley Engineering, LLC

Brantley Engineering, LLC

Listing of Quality Assurance Monitoring Personnel

JED Cell 11 Construction

Name	Initials	Title
Allan Brantley, PE	ASB	Certifying Engineer
Sam Nejad, PE	SMN	Sr. Project Manager
Kevin Lesley	KL	Sr. QA Monitor
Elias Perkins	EP	Synthetics QA Monitor

Section 2
Comanco Environmental Corporation

COMANCO®
ENVIRONMENTAL CORPORATION

Foreman

Jorge Gomez

Jorge has 6 years of experience in installation and seaming of a variety of synthetic liners and components. He is familiar with all currently utilized deployment techniques, installation and safety procedures. He has experience in on site crew management for the deployment, welding and quality control testing for a variety of geosynthetics. He is also familiar and has experience with detail work including pipe boots, sumps, batten seals and other miscellaneous appurtenances. Jorge also meets all the requirements to be classified as a Geomembrane Master Seamer and Quality Control Technician. He is also qualified to assist in the training of Geomembrane Welders, Installers and QC Technicians.

Most Recent Job History

Water Conserv II HDPE RIB	538,500	SF HDPE	0	SF Geotextile
Farm III Enterprises Pond	75,071	SF HDPE	125,767	SF Geotextile
JED Landfill Cell 10	1,036,712	SF HDPE	1,012,056	SF Geocomposite
Hardee Co. Landfill –Phs II	660,560	SF HDPE	615,627	SF Geocomposite

Components Installed ☒

- ☒ HDPE (Textured and Smooth)
- ☒ LLDPE (Textured and Smooth)
- ☐ Super Grip Drain Liner
- ☐ XR-5
- ☐ Polypropylene
- ☒ PVC
- ☒ Geotextiles
- ☒ Geonets
- ☒ Geocomposite
- ☒ GCL
- ☒ Pipe Boots
- ☒ Batten Systems
- ☐ HDPE Sumps

Applications ☒

- ☒ Landfill Cells
- ☒ Landfill Caps
- ☒ Leachate Ponds
- ☒ Wastewater Treatment
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☐ Cut Off Trench
- ☒ Methane Barriers
- ☒ Tank Farm
- ☒ Floating Covers

COMANCO®
ENVIRONMENTAL CORPORATION

Heavy Equipment Operator

Lorenzo Jimenez

Lorenzo has 8 years of experience in operating heavy equipment during the installation of a variety of geosynthetic liners and components. He has the experience, skills and consistency to operate safely and perform quality work

He is qualified to operate equipment to include the following machines: dozer, loader, excavator, forklift, skid steer, haul truck, water truck, and crawler. Lorenzo is familiar with all currently utilized safety procedures.

Most Recent Job History

OUC CWSA Pond Liner	793,040	SF HDPE	660,908	SF Geocomposite
Republic Sycamore SG III	819,162	SF HDPE	145,380	SF Geotextile
Republic Sunshine Canyon	1,436,745	SF HDPE	1,381,776	SF Geotextile
Coeur Rochester Stg 3 Ph 2	2,272,140	SF HDPE	2,722,140	SF Geotextile

Components Installed ☒	Applications ☒
☒ HDPE (Textured and Smooth)	☒ Landfill Cells
☒ LLDPE (Textured and Smooth)	☒ Landfill Caps
☐ Super Grip Drain Liner	☒ Leachate Ponds
☐ XR-5	☒ Wastewater Treatment
☒ Polypropylene	☒ Potable Water Reservoirs
☒ PVC	☒ Evaporation Ponds
☒ Geotextiles	☐ Leach Pads
☒ Geonets	☒ Process Ponds
☒ Geocomposite	☐ Tank Liners
☒ GCL	☐ Cut Off Trench
☒ Pipe Boots	☐ Methane Barriers
☒ Batten Systems	☐ Tank Farm
☐ HDPE Sumps	☐ Floating Covers

4301 Sterling Commerce Drive ▪ Plant City, Florida 33566 ▪ (813) 988-8829 ▪ FAX (813) 988-8779
1135 Terminal Way; Suite 204 A ▪ Reno, NV 89502 ▪ (775) 324-7707 ▪ FAX (775) 324-7708
www.COMANCO.com

COMANCO®
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Heavy Equipment Operator

Oscar Gonzalez

Esteban has 5 years of experience in operating heavy equipment during the installation of a variety of geosynthetic liners and components. He has the experience, skills and consistency to operate safely and perform quality work

He is qualified to operate equipment to include the following machines: dozer, loader, excavator, forklift, skid steer, haul truck, water truck, and crawler. Oscar is familiar with all currently utilized safety procedures.

Most Recent Job History

Mosaic Riverview Final	7,600,017	SF HDPE
Progressive Energy Runoff	950,503	SF HDPE
Cedar Trail LF Cell 8	3,083,857	SF HDPE
OUC Stanton Energy Center	2,936,795	SF HDPE

Components Installed ☒

- ☒ HDPE (Textured and Smooth)
- ☒ LLDPE (Textured and Smooth)
- ☐ Super Grip Drain Liner
- ☐ XR-5
- ☐ Polypropylene
- ☐ PVC
- ☒ Geotextiles
- ☒ Geonets
- ☒ Geocomposite
- ☒ GCL
- ☒ Pipe Boots
- ☒ Batten Systems
- ☐ HDPE Sumps

Applications ☒

- ☒ Landfill Cells
- ☒ Landfill Caps
- ☒ Leachate Ponds
- ☒ Wastewater Treatment
- ☐ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☐ Process Ponds
- ☒ Tank Liners
- ☐ Cut Off Trench
- ☐ Methane Barriers
- ☒ Tank Farm
- ☐ Floating Covers

COMANCO®
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Liner Technician

Roberto Zavaleta Rodriguez

Roberto has 5 years of experience in installation and seaming of a variety of synthetic liners and components. He is qualified to set up and operate the following machines: vacuum box, hand held hot air and sewing machine. As part of his ongoing training; he is allowed to operate the wedge welder, extrusion welder and air testing equipment under the direct supervision of a COMANCO Superintendent, Master Seamer or Quality Control Technician. Roberto is familiar with all currently utilized safety procedures.

Most Recent Job History:

OUC Stanton Energy Center	2,936,795	SF HDPE	2,468,640	SF Geocomposite
Cedar Trail Cell 7 Liner	885,181	SF HDPE	858,308	SF Geocomposite
Mosaic Riverview South	958,320	SF HDPE	849,240	SF Geocomposite
OUC CWSA Pond Liner	793,040	SF HDPE	660,908	SF Geocomposite

Components Installed	Amount
HDPE (Textured and Smooth)	13,086,659
LLPDE (Textured and Smooth)	257,437
Super Grip Drain Liner	4,500
XR-5	
Polypropylene	2,200
PVC	171,365
Geotextiles	125,425
Geonets	582,977
Geocomposite	6,066,721
GCL	1,115,745
Pipe Boots	164
Batten Systems	1,461
HDPE Sumps	
Gundseal	

COMANCO®
ENVIRONMENTAL CORPORATION

Liner Technician

Jesus Moran

Jesus has 12 years of experience in installation and seaming of a variety of synthetic liners and components. He is qualified to set up and operate the following machines: vacuum box, hand held hot air and sewing machine. As part of his ongoing training; he is allowed to operate the wedge welder, extrusion welder and air testing equipment under the direct supervision of a COMANCO Superintendent, Master Seamer or Quality Control Technician. Jesus is familiar with all currently utilized safety procedures.

Most Recent Job History

Water Conserv Site 8	604,816	SF HDPE	971,368	SF Geocomposite
TECO Big Bend South Gypsum	1,393,474	SF HDPE	974,744	SF Gundseal
OUC CWSA Pond Liner	793,040	SF HDPE		
Mosaic Bartow Steel Lake	953,200	SF HDPE	333,479	SF Geocomposite

Components Installed ☒	Applications ☒
☒ HDPE (Textured and Smooth)	☒ Landfill Cells
☒ LLDPE (Textured and Smooth)	☒ Landfill Caps
☐ Super Grip Drain Liner	☒ Leachate Ponds
☐ XR-5	☒ Wastewater Treatment
☒ Polypropylene	☐ Potable Water Reservoirs
☒ PVC	☒ Evaporation Ponds
☒ Geotextiles	☒ Leach Pads
☒ Geonets	☐ Process Ponds
☒ Geocomposite	☒ Tank Liners
☒ GCL	☐ Cut Off Trench
☒ Pipe Boots	☐ Methane Barriers
☒ Batten Systems	☒ Tank Farm
☐ HDPE Sumps	☐ Floating Covers

COMANCO®
ENVIRONMENTAL CORPORATION

Liner Technician

Justino Moran

Justino has 7 years of experience in installation and seaming of a variety of synthetic liners and components. He is qualified to set up and operate the following machines: vacuum box, hand held hot air and sewing machine. As part of his ongoing training; he is allowed to operate the wedge welder, extrusion welder and air testing equipment under the direct supervision of a COMANCO Superintendent, Master Seamer or Quality Control Technician. Justino is familiar with all currently utilized safety procedures.

Most Recent Job History:

Republic Cedar Trail Cell 8	991,961	SF HDPE	971,368	SF Geocomposite
TECO Big Bend South Gyp	1,393,474	SF HDPE	974,744	SF Geonet
Coeur Rochester Stg 3 Phs 2	2,722,140	SF HDPE	2,722,140	SF Geocomposite
Republic Sunshine Canyon	1,654,882	SF HDPE	2,088,333	SF Geotextile

Components Installed ☒

- ☒ HDPE (Textured and Smooth)
- ☒ LLDPE (Textured and Smooth)
- ☐ Super Grip Drain Liner
- ☐ XR-5
- ☐ Polypropylene
- ☐ PVC
- ☐ Geotextiles
- ☐ Geonets
- ☒ Geocomposite
- ☒ GCL
- ☐ Pipe Boots
- ☐ Batten Systems
- ☐ HDPE Sumps

Applications ☒

- ☒ Landfill Cells
- ☒ Landfill Caps
- ☒ Leachate Ponds
- ☒ Wastewater Treatment
- ☐ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☐ Process Ponds
- ☒ Tank Liners
- ☐ Cut Off Trench
- ☐ Methane Barriers
- ☒ Tank Farm
- ☐ Floating Covers

COMANCO®
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Liner Technician

Eliazar Reyes

Eliazar has 7 years of experience in installation and seaming of a variety of synthetic liners and components. He is qualified to set up and operate the following machines: vacuum box, hand held hot air and sewing machine. As part of his ongoing training; he is allowed to operate the wedge welder, extrusion welder and air testing equipment under the direct supervision of a COMANCO Superintendent, Master Seamer or Quality Control Technician. Eliazar is familiar with all currently utilized safety procedures.

Most Recent Job History

Hardee County LF Phase II	660,560	SF HDPE	615,627	SF Geocomposite
JED Landfill Cell 10 Liner	1,036,712	SF HDPE	1,012,056	SF Geocomposite
JED Landfill Cell 9 Liner	1,280,638	SF HDPE	1,258,951	SF Geocomposite
Republic Bridgeton LF	747,177	SF HDPE	678,245	SF Geotextile

Components Installed ☒

- ☒ HDPE (Textured and Smooth)
- ☒ LLDPE (Textured and Smooth)
- ☒ Super Grip Drain Liner
- ☐ XR-5
- ☐ Polypropylene
- ☒ PVC
- ☒ Geotextiles
- ☒ Geonets
- ☒ Geocomposite
- ☒ GCL
- ☒ Pipe Boots
- ☒ Batten Systems
- ☐ HDPE Sumps

Applications ☒

- ☒ Landfill Cells
- ☒ Landfill Caps
- ☒ Leachate Ponds
- ☒ Wastewater Treatment
- ☐ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☐ Process Ponds
- ☒ Tank Liners
- ☐ Cut Off Trench
- ☐ Methane Barriers
- ☒ Tank Farm
- ☐ Floating Covers

COMANCO®
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Liner Technician

Jorge Mendez

Jorge has 12 years of experience in installation and seaming of a variety of synthetic liners and components. He is qualified to set up and operate the following machines: vacuum box, hand held hot air and sewing machine. As part of his ongoing training; he is allowed to operate the wedge welder, extrusion welder and air testing equipment under the direct supervision of a COMANCO Superintendent, Master Seamer or Quality Control Technician. Jorge is familiar with all currently utilized safety procedures.

Most Recent Job History:

Mosaic Faustina Pond	753,556	SF HDPE		
Manatee County SWWRF	1,298,800	SF HDPE		
Miami Dade Cell 20 Ash	959,720	SF HDPE	572,474	SF Geocomposite
Mosaic Bartow Steel Lake	953,200	SF HDPE	333,479	SF Geocomposite

Components Installed ☒

- ☒ HDPE (Textured and Smooth)
- ☐ LLDPE (Textured and Smooth)
- ☐ Super Grip Drain Liner
- ☐ XR-5
- ☐ Polypropylene
- ☒ PVC
- ☒ Geotextiles
- ☒ Geonets
- ☒ Geocomposite
- ☒ GCL
- ☒ Pipe Boots
- ☒ Batten Systems
- ☐ HDPE Sumps

Applications ☒

- ☒ Landfill Cells
- ☒ Landfill Caps
- ☒ Leachate Ponds
- ☒ Wastewater Treatment
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☐ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☐ Methane Barriers
- ☐ Tank Farm
- ☐ Floating Covers

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Liner Technician

Francisco Colorado

Francisco has 11 years of experience in installation and seaming of a variety of synthetic liners and components. He is qualified to set up and operate the following machines: vacuum box, hand held hot air and sewing machine. As part of his ongoing training; he is allowed to operate the wedge welder, extrusion welder and air testing equipment under the direct supervision of a COMANCO Superintendent, Master Seamer or Quality Control Technician. Francisco is familiar with all currently utilized safety procedures.

Most Recent Job History:

Mosaic Bartow Steel Lake	953,200	SF HDPE	333,479	SF Geocomposite
Mosaic Riverview South	958,320	SF HDPE	849,420	SF Geocomposite
JED LF Cell 9 Liner	1,280,638	SF HDPE	1,258,951	SF Geocomposite
Mosaic Faustina Phase 2	1,593,696	SF HDPE		

Components Installed	Amount
HDPE (Textured and Smooth)	73,601,535
LLPDE (Textured and Smooth)	6,382,577
Super Grip Drain Liner	
XR-5	
Polypropylene	
PVC	992,028
Geotextiles	1,830,578
Geonets	1,327,256
Geocomposite	16,300,502
GCL	6,207,366
Pipe Boots	762
Batten Systems	5,409
HDPE Sumps	
Gundseal	1,039,392
Rain Tarp	73,601,535

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Liner Technician

Hector Elacio

Hector has 7 years of experience in installation of a variety of geosynthetic liners and components. He is qualified to set-up and operate equipment to include the following machines: vacuum box, hand held hot air, and sewing. As part of his ongoing task training he is allowed to operate the wedge welder, extrusion welder, and air testing equipment under the direct supervision of a COMANCO Superintendent, Master Seamer, or Quality Control Technician. Hector is familiar with all currently utilized safety procedures.

Most Recent Job History:

Mosaic Green Bay SARC	2,278,941	SF HDPE	187,964	SF Geocomposite
Mosaic Mulberry South	1,350,350	SF HDPE	112,444	SF Geocomposite
Mosaic Riverview Swale	1,254,416	SF HDPE	649,738	SF Geocomposite
JED LF Cell 9 Liner Install	1,280,638	SF LLDPE	1,258,951	SF Geocomposite

Components Installed ☒

- ☒ HDPE (Textured and Smooth)
- ☒ LLDPE (Textured and Smooth)
- ☒ Super Grip Drain Liner
- ☐ XR-5
- ☒ Polypropylene
- ☒ PVC
- ☒ Geotextiles
- ☒ Geonets
- ☒ Geocomposite
- ☒ GCL
- ☒ Pipe Boots
- ☒ Batten Systems
- ☐ HDPE Sumps

Applications ☒

- ☒ Landfill Cells
- ☒ Landfill Caps
- ☒ Leachate Ponds
- ☒ Wastewater Treatment
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☐ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☐ Methane Barriers
- ☐ Tank Farm
- ☐ Floating Covers

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Quality Control Technician

Alejandro Losa Solis

Alejandro has 2 years of experience in installation and seaming of a variety of synthetic liners and components. He is familiar with current field welding and installation testing and documentation requirements. He has experience and training for the execution of and documentation for required on site testing, QC and safety procedures. He is also qualified to assist in the training of geomembrane Welders, Installers, and QC Technicians. Alejandro has quality control tested well over 1 million SF of geomembranes.

Most Recent Job History:

Republic Cedar Trail Cell 8	991,961	SF HDPE	971,368	SF Geocomposite
TECO Big Bend South Gypsum	1,393,474	SF HDPE	131,112	SF Geocomposite
OUC CWSA Pond Liner Install	793,040	SF HDPE	660,908	SF Geocomposite
Bridgeton North Quarry	1,063,132	SF HDPE	966,276	SF Geotextile

Components Installed ☒

- ☒ HDPE (Textured and Smooth)
- ☒ LLDPE (Textured and Smooth)
- ☐ Super Grip Drain Liner
- ☐ XR-5
- ☐ Polypropylene
- ☐ PVC
- ☒ Geotextiles
- ☒ Geonets
- ☒ Geocomposite
- ☒ GCL
- ☒ Pipe Boots
- ☒ Batten Systems
- ☐ HDPE Sumps

Applications ☒

- ☒ Landfill Cells
- ☒ Landfill Caps
- ☒ Leachate Ponds
- ☒ Wastewater Treatment
- ☐ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☐ Leach Pads
- ☐ Process Ponds
- ☐ Tank Liners
- ☐ Cut Off Trench
- ☐ Methane Barriers
- ☐ Tank Farm
- ☐ Floating Covers

APPENDIX B
Pre-Construction Soils Laboratory Testing Results

Section 1
General Fill

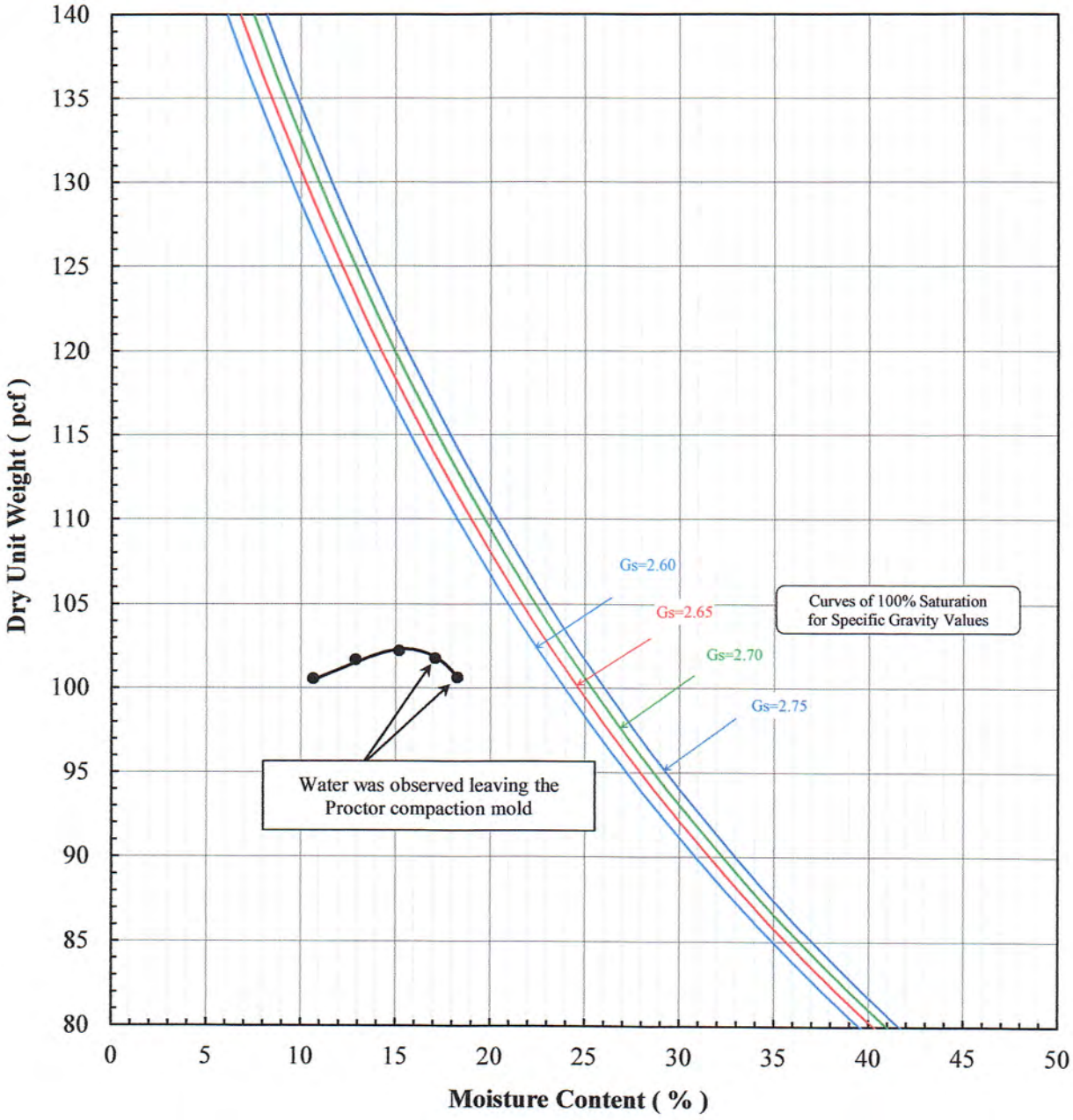
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11 Construction
Project No:	636
Client Sample ID	SF-01
Lab Sample No:	15A042

ASTM D 698 - Method B

STANDARD PROCTOR COMPACTION

Moist Preparation



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moist. Content (%)	Laboratory Visiual Soil Description (-)
SF-01	15A042	102.4	15.7	Brown silty sand

Note(s): Unless coarse correction is required, all particles passed through 1.0 in. Sieve were used.

From the bucket received, all particles were smaller than 1.0 inch.

2-7-15
NSR

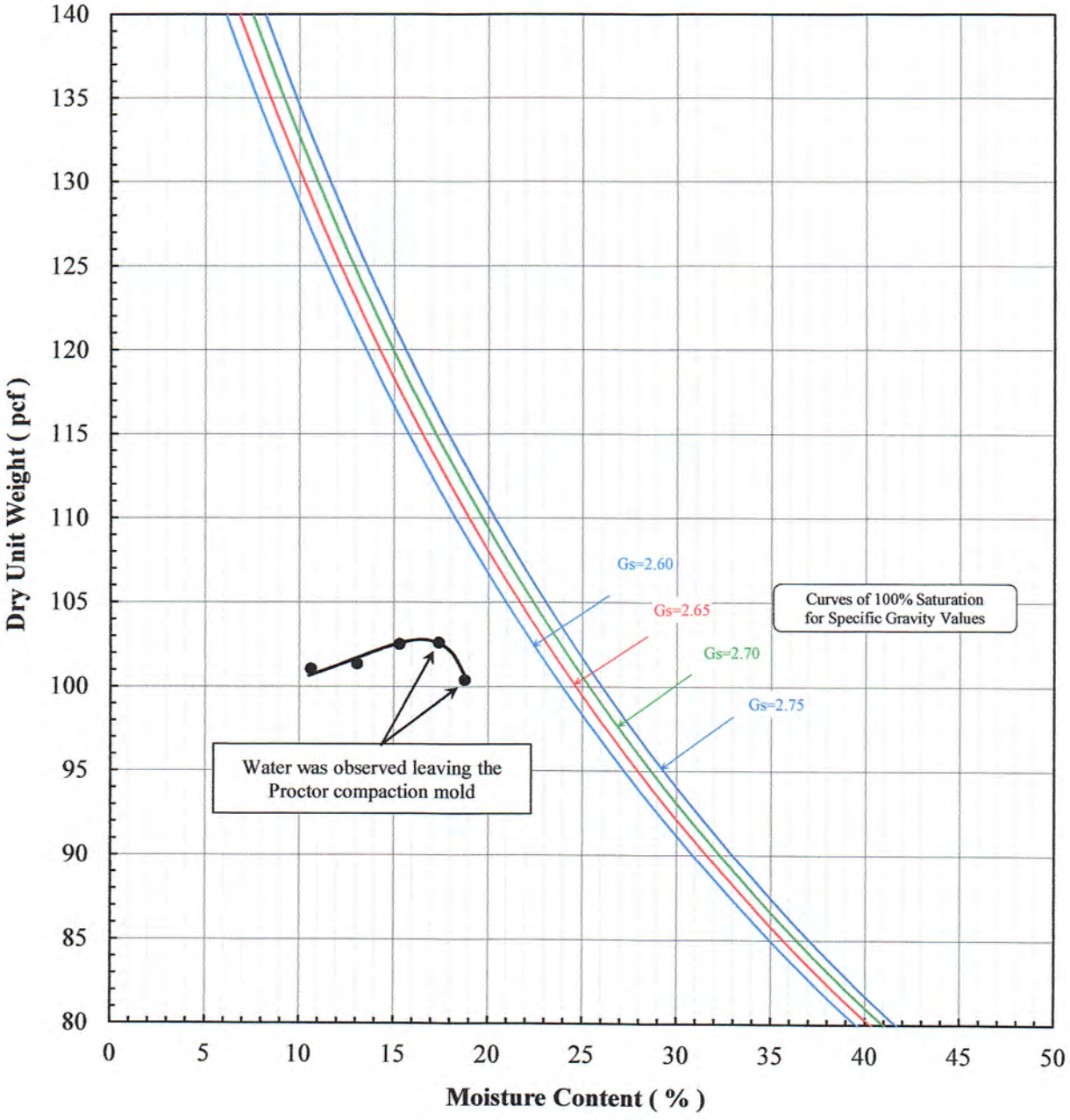
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11 Construction
Project No:	636
Client Sample ID	SF-02
Lab Sample No:	15A043

ASTM D 698 - Method B

STANDARD PROCTOR COMPACTION

Moist Preparation



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moist. Content (%)	Laboratory Visiual Soil Description (-)
SF-02	15A043	102.9	16.5	Dark brown silty sand

Note(s): Unless coarse correction is required, all particles passed through 1.0 in. Sieve were used.

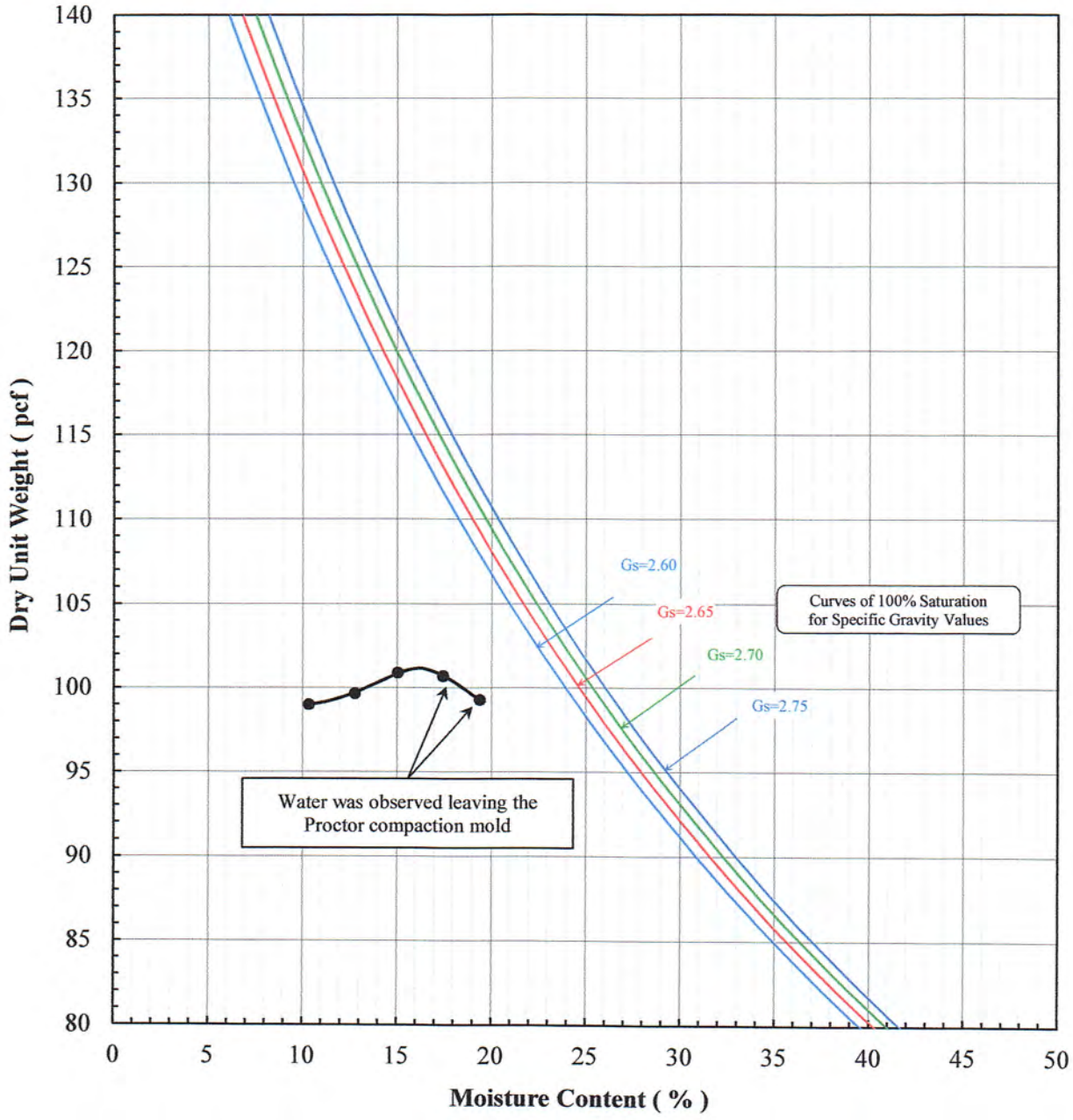
From the bucket received, all particles were smaller than 1.0 inch.

2-7-15
NSR

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11 Construction
Project No:	636
Client Sample ID	SF-03
Lab Sample No:	15A044

ASTM D 698 - Method B | **STANDARD PROCTOR COMPACTION** | **Moist Preparation**



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moist. Content (%)	Laboratory Visiual Soil Description (-)
SF-03	15A044	101.1	16.2	Dark brown silty sand

Note(s): Unless coarse correction is required, all particles passed through 1.0 in. Sieve were used.

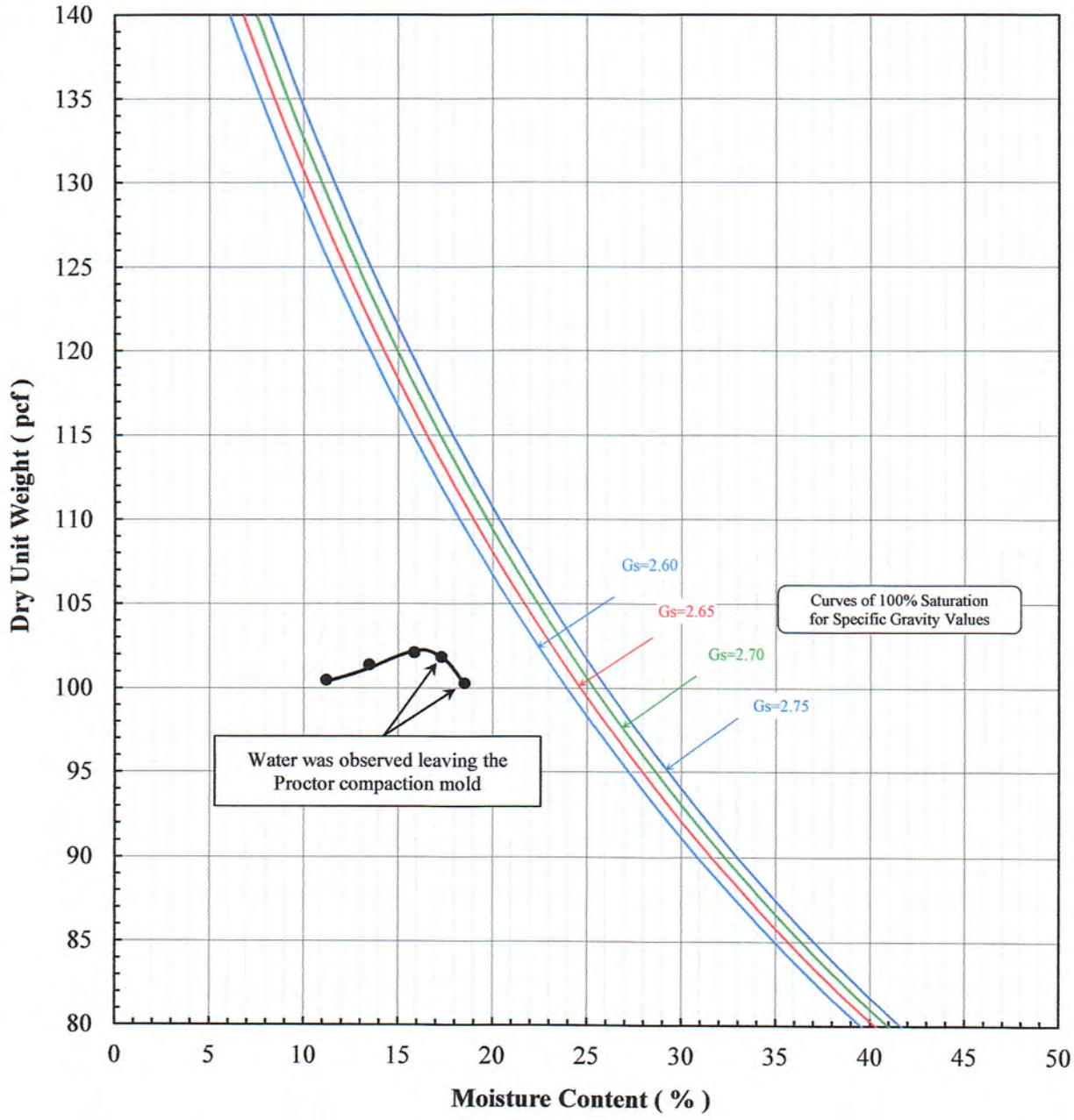
From the bucket received, all particles were smaller than 1.0 inch.

2-7-15 NSR

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11 Construction
Project No:	636
Client Sample ID	SF-04
Lab Sample No:	15A045

ASTM D 698 - Method B **STANDARD PROCTOR COMPACTION** **Moist Preparation**



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moist. Content (%)	Laboratory Visiual Soil Description (-)
SF-04	15A045	102.1	16.4	Dark brown silty sand

Note(s): Unless coarse correction is required, all particles passed through 1.0 in. Sieve were used.

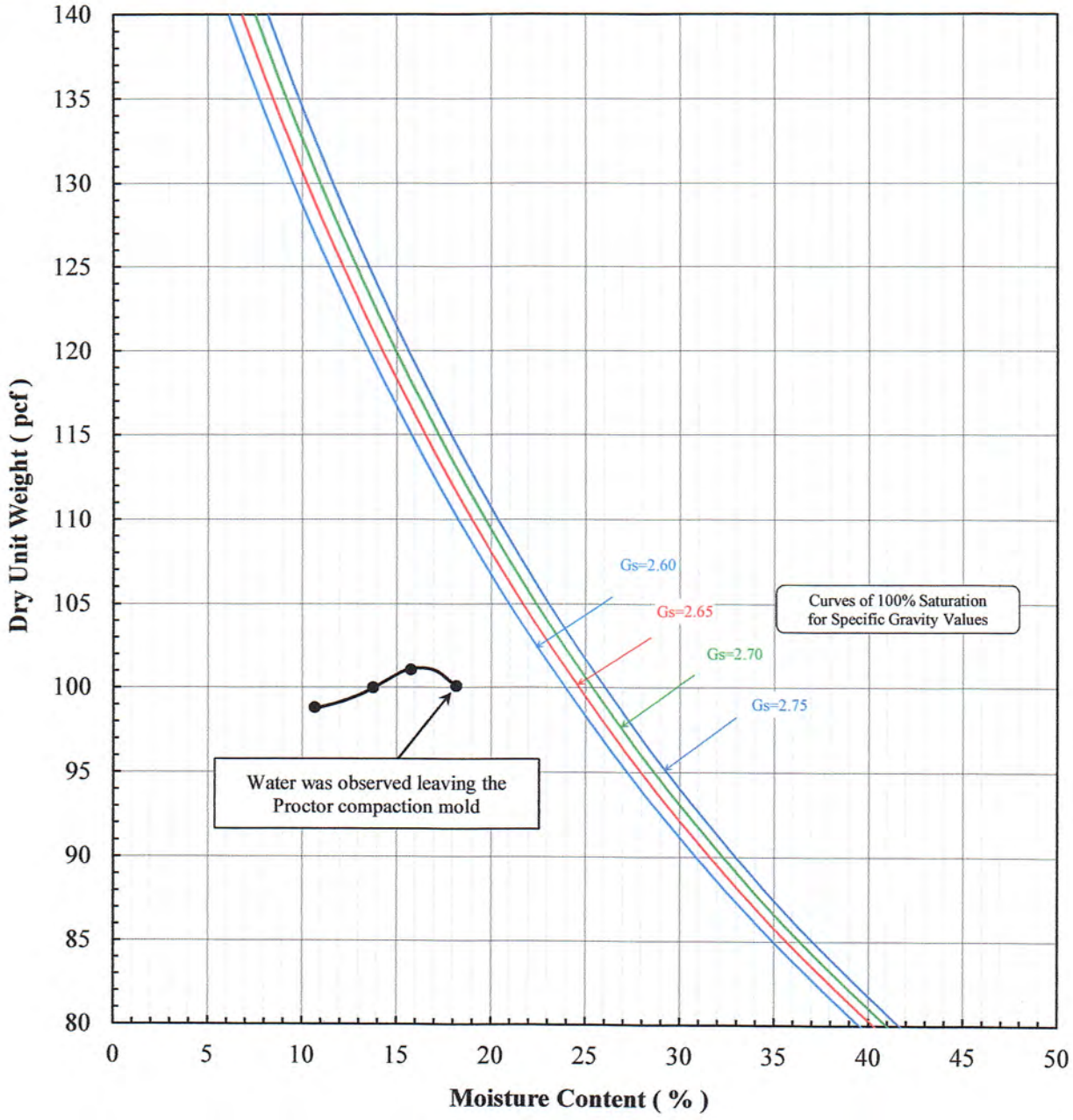
From the bucket received, all particles were smaller than 1.0 inch.

2-7-15 NSR

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11 Construction
Project No:	636
Client Sample ID	SF-05
Lab Sample No:	15A046

ASTM D 698 - Method B | **STANDARD PROCTOR COMPACTION** | **Moist Preparation**



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moist. Content (%)	Laboratory Visiual Soil Description (-)
SF-05	15A046	101.1	16.3	Dark brown silty sand

Note(s): Unless coarse correction is required, all particles passed through 1.0 in. Sieve were used.

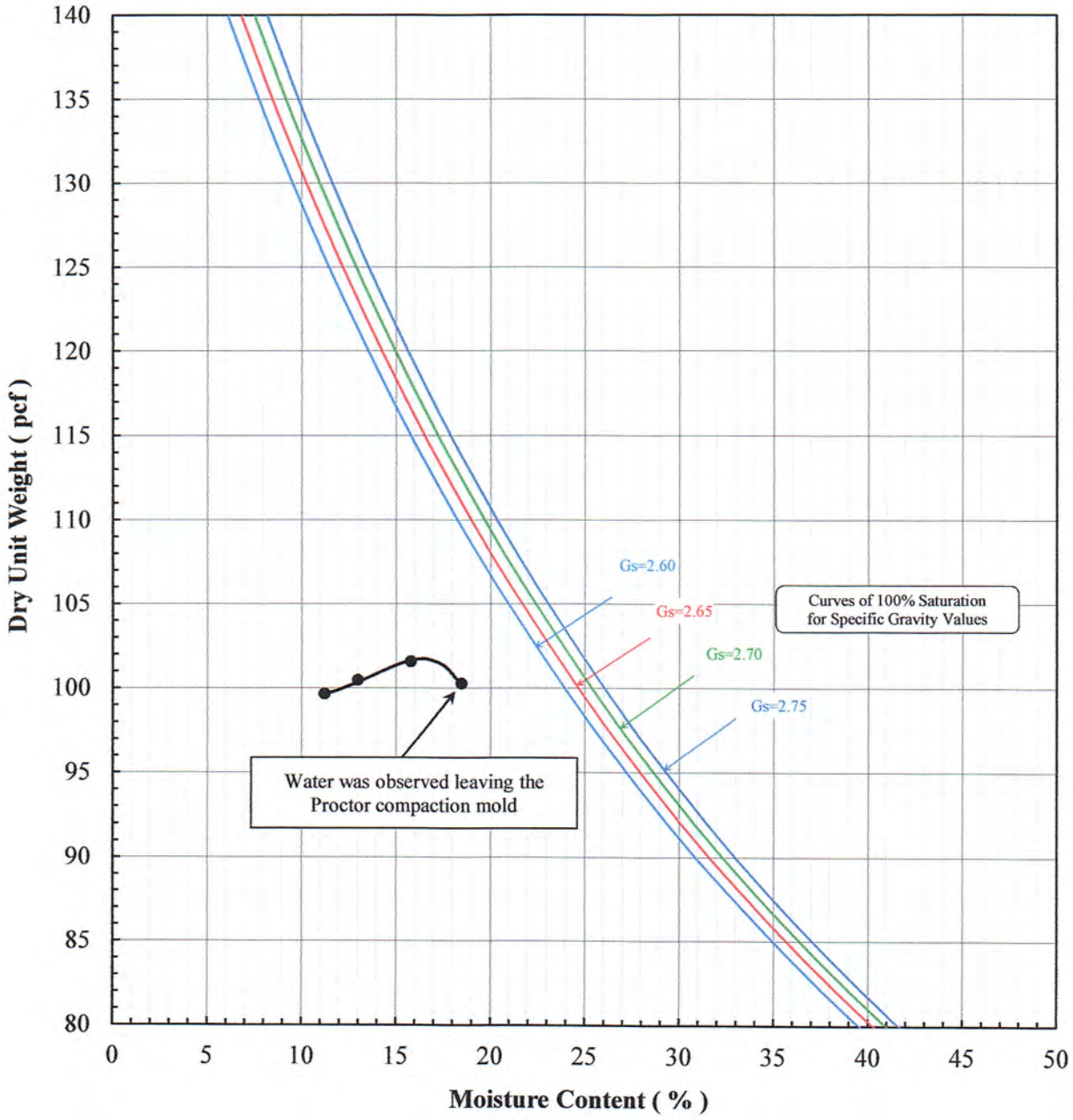
From the bucket received, all particles were smaller than 1.0 inch.

2-7-15 NSR

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11 Construction
Project No:	636
Client Sample ID	SF-06
Lab Sample No:	15A047

ASTM D 698 - Method B **STANDARD PROCTOR COMPACTION** **Moist Preparation**



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moist. Content (%)	Laboratory Visiual Soil Description (-)
SF-06	15A047	101.9	16.4	Dark brown silty sand

Note(s): Unless coarse correction is required, all particles passed through 1.0 in. Sieve were used.

From the bucket received, all particles were smaller than 1.0 inch.

2-7-15 NSR

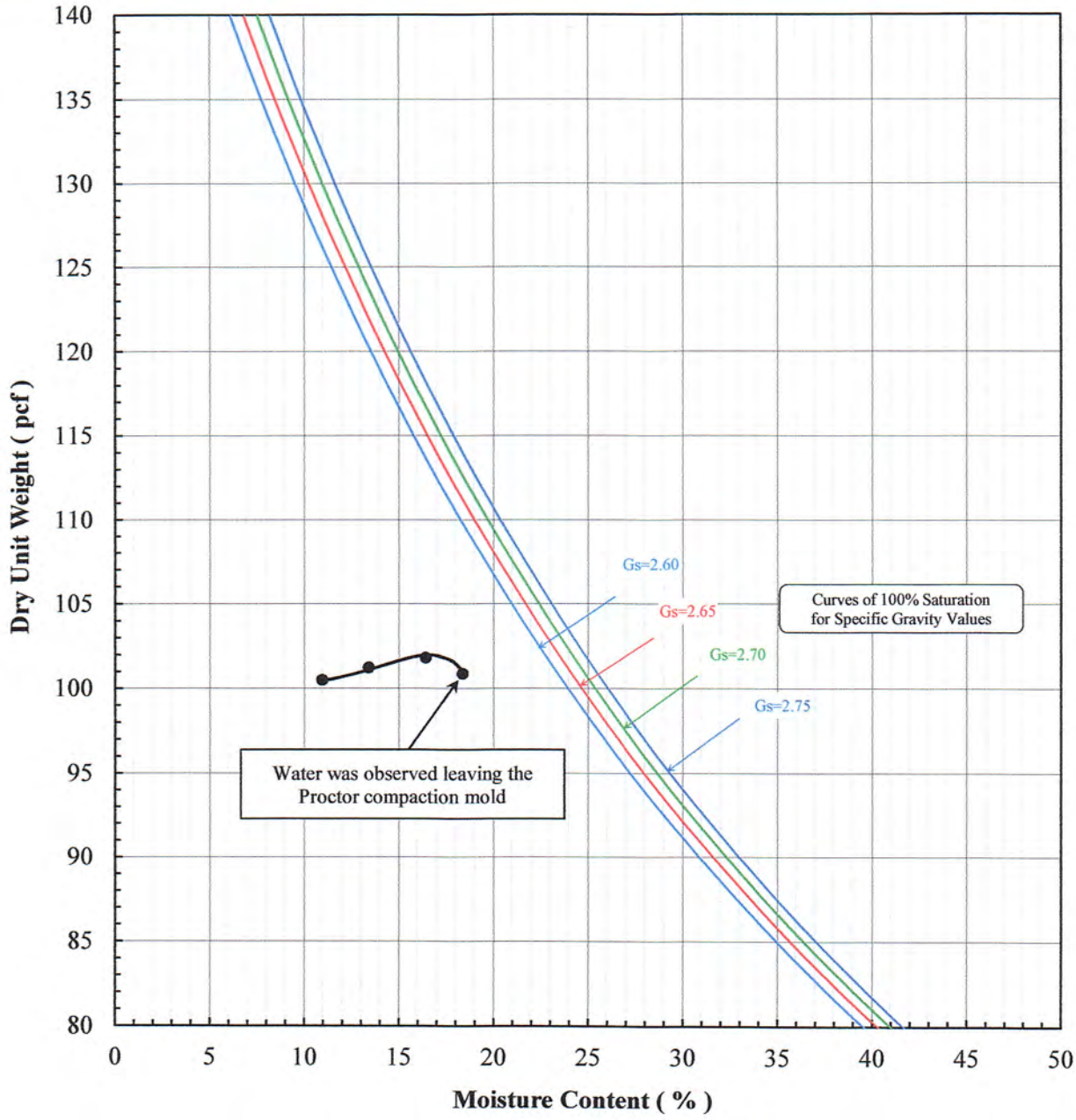
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11 Construction
Project No:	636
Client Sample ID	SF-07
Lab Sample No:	15A048

ASTM D 698 - Method B

STANDARD PROCTOR COMPACTION

Moist Preparation



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moist. Content (%)	Laboratory Visiual Soil Description (-)
SF-07	15A048	102.0	16.8	Dark brown silty sand

Note(s): Unless coarse correction is required, all particles passed through 1.0 in. Sieve were used.

From the bucket received, all particles were smaller than 1.0 inch.

2-7-15 NSR

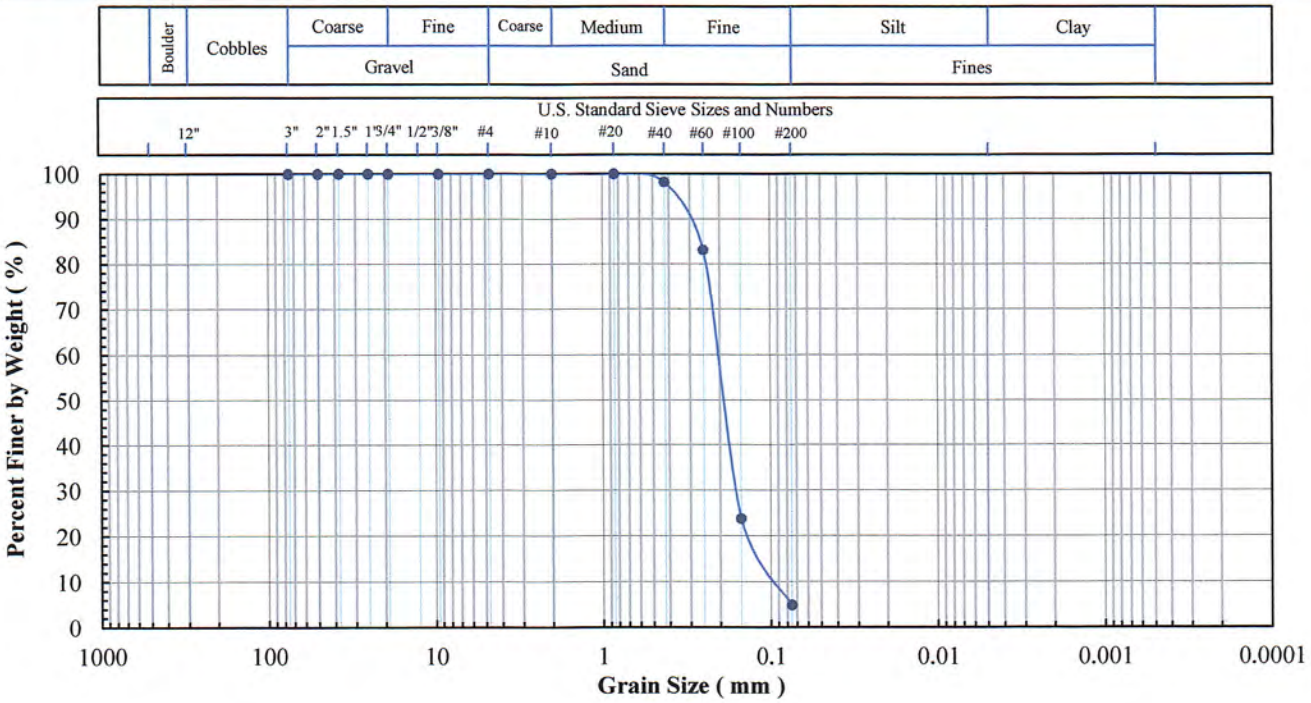
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-01
Lab Sample No:	15A042

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



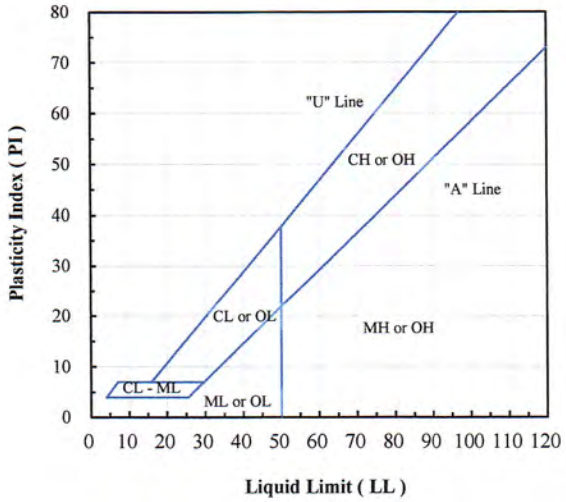
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.2
#60	0.250	83.1
#100	0.150	23.8
#200	0.075	4.9

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.1
Fines (%):	4.9
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.0
Coeff. Curv. (Cc):	1.3



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-01	15A042	19.9	4.9	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-19-2015 AA, MSA

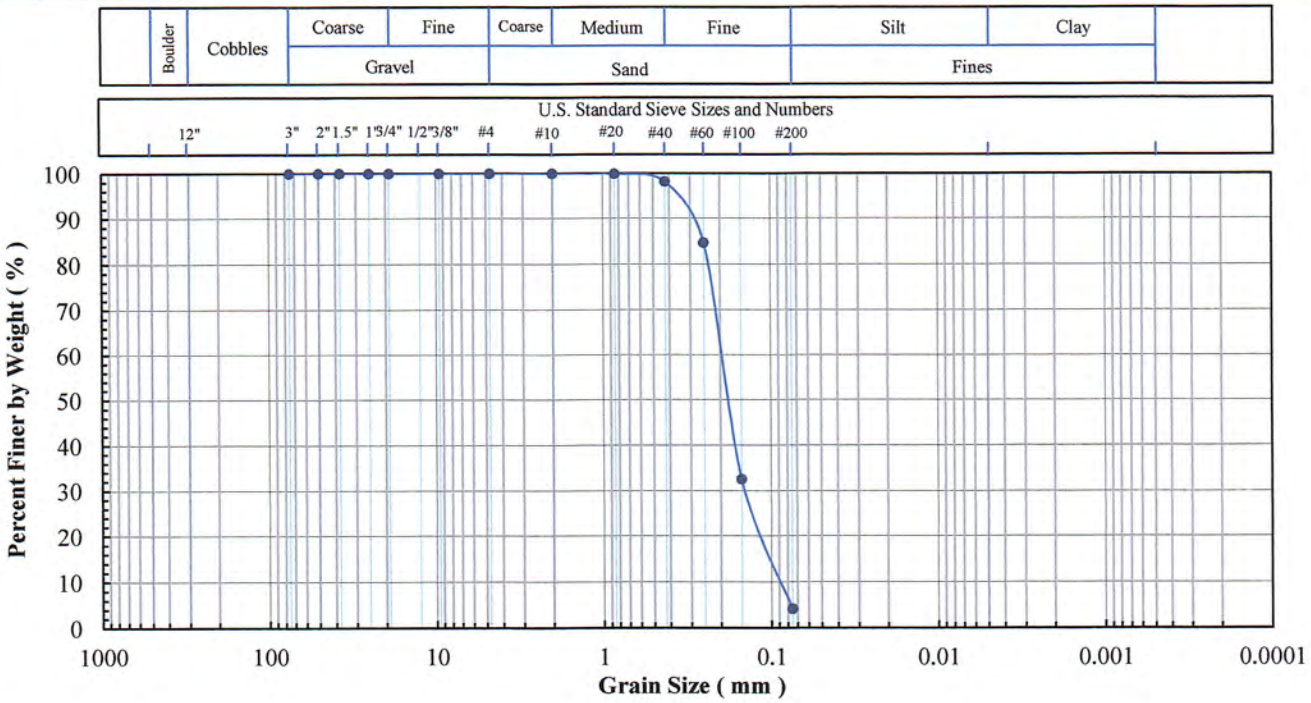
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-02
Lab Sample No:	15A043

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



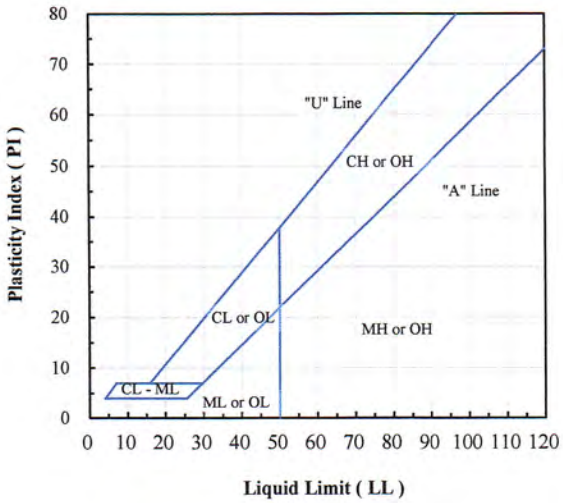
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	98.2
#60	0.250	84.7
#100	0.150	32.5
#200	0.075	4.2

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.8
Fines (%):	4.2
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.2
Coeff. Curv. (Cc):	1.3



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-02	15A043	18.4	4.2	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015
AA, NSF

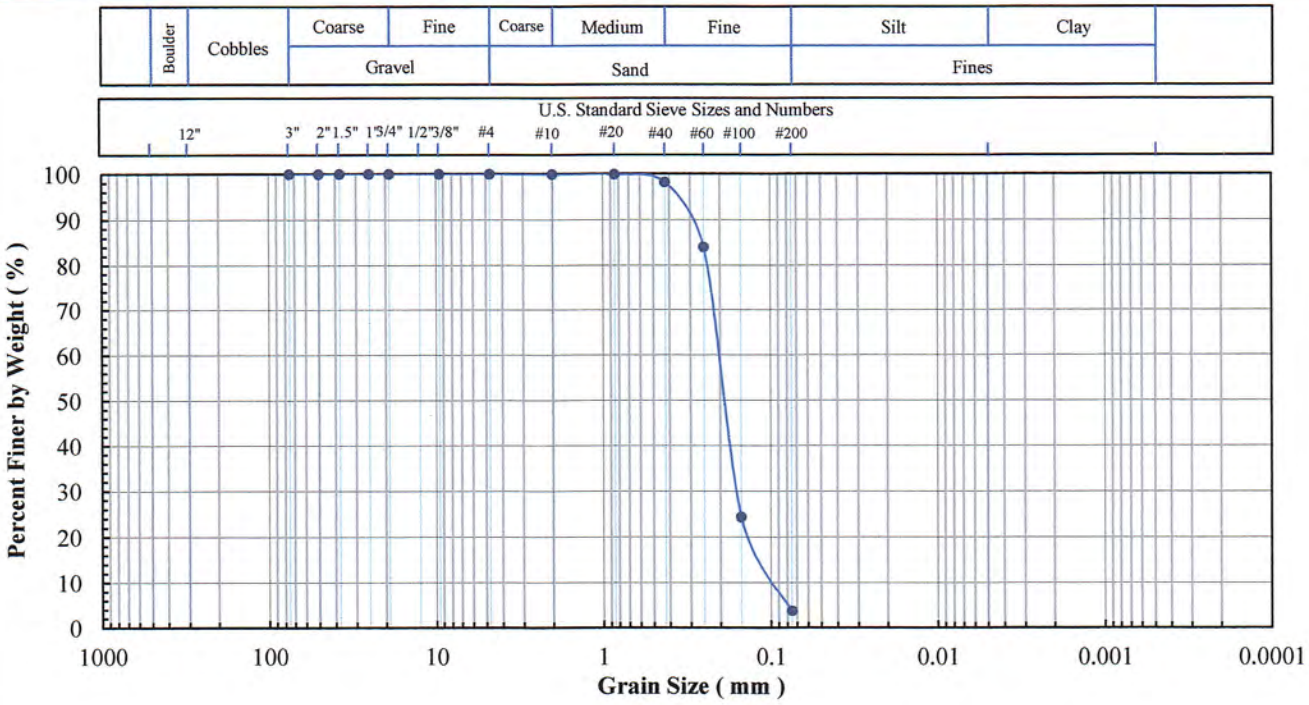
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-03
Lab Sample No:	15A044

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



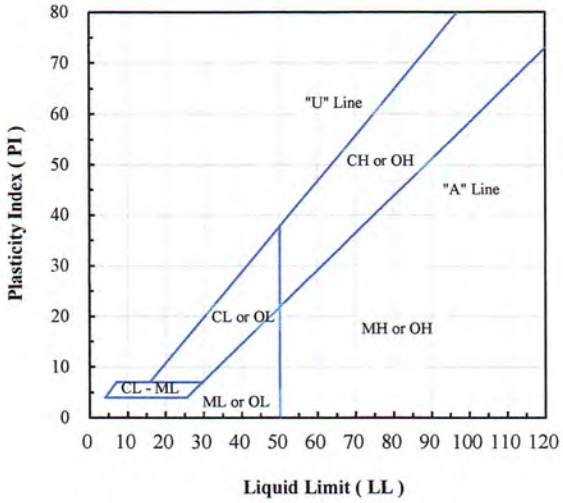
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.9
#40	0.425	98.2
#60	0.250	84.0
#100	0.150	24.4
#200	0.075	3.8

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	96.2
Fines (%):	3.8
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.0
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
SF-03	15A044	19.5	3.8	NP	NP	NP	SP-Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-19-2015
AA, NSK

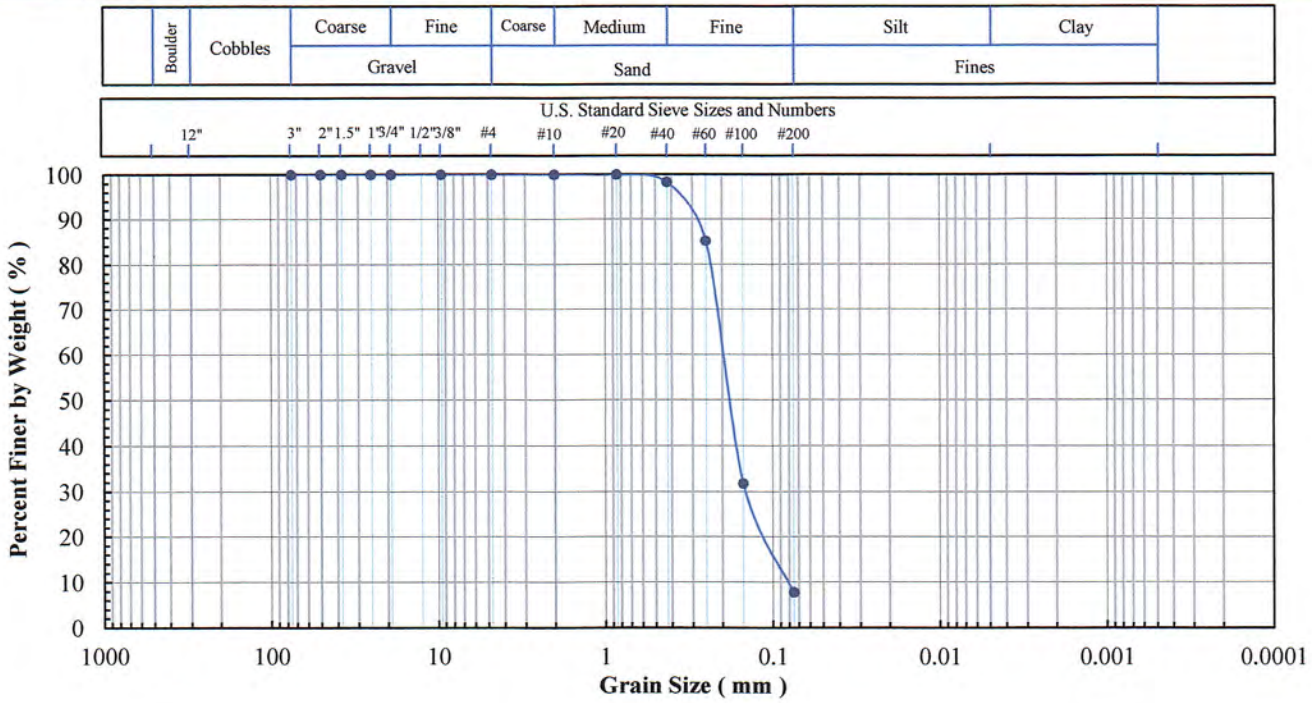
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-04
Lab Sample No:	15A045

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



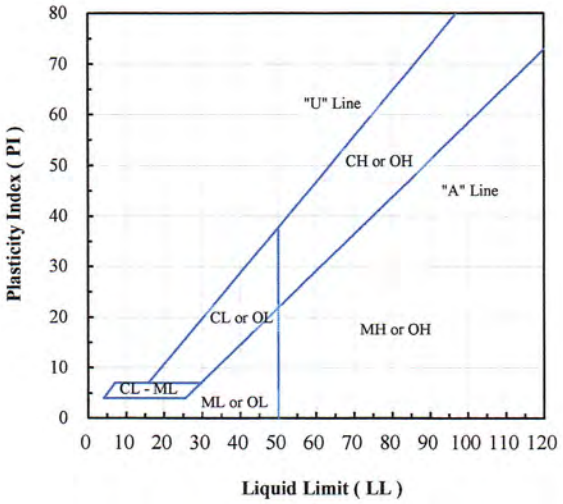
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.3
#60	0.250	85.2
#100	0.150	31.8
#200	0.075	7.8

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	92.2
Fines (%):	7.8
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.5
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-04	15A045	20.9	7.8	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 A.A. NSM

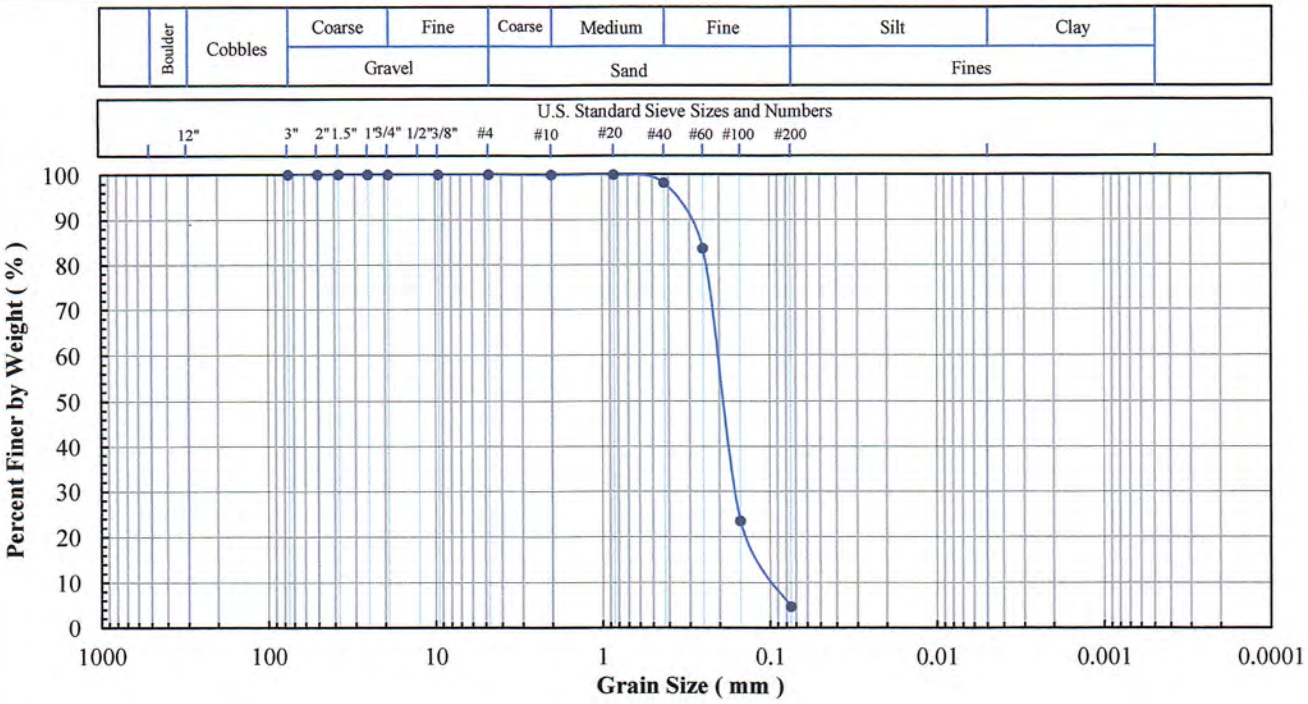
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-05
Lab Sample No:	15A046

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



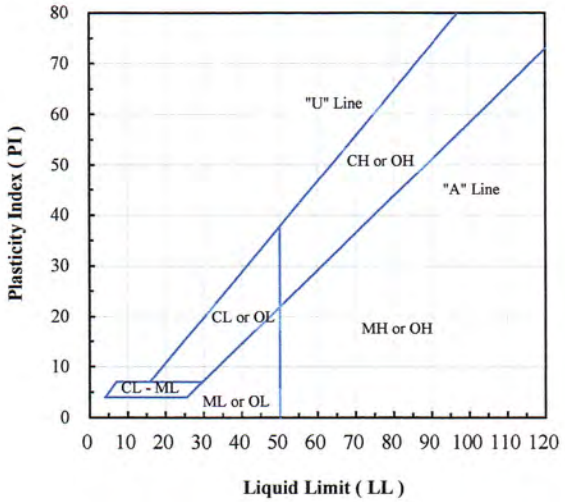
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.9
#40	0.425	98.1
#60	0.250	83.6
#100	0.150	23.5
#200	0.075	4.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.3
Fines (%):	4.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.1
Coeff. Curv. (Cc):	0.7



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-05	15A046	19.4	4.7	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, KSR

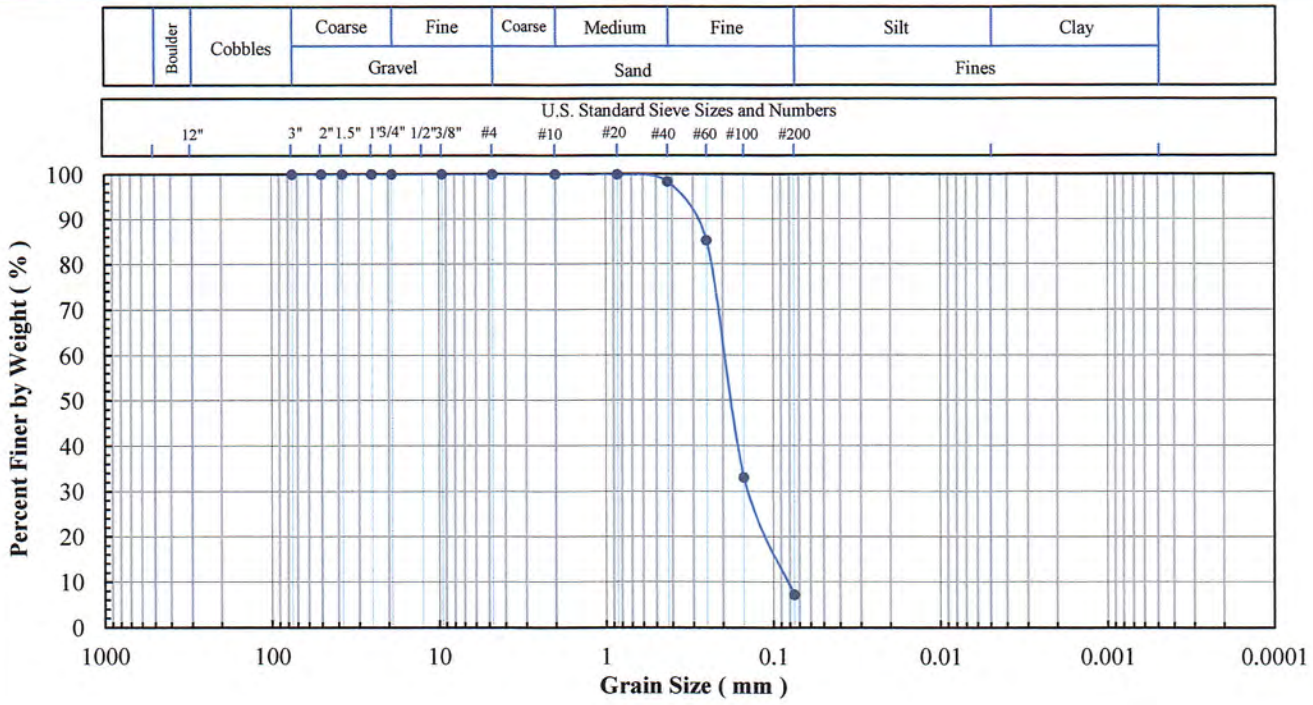
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-06
Lab Sample No:	15A047

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



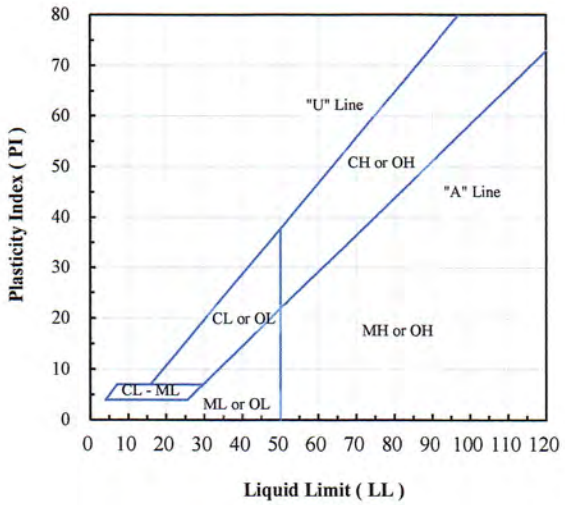
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	98.3
#60	0.250	85.2
#100	0.150	33.1
#200	0.075	7.2

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	92.8
Fines (%):	7.2
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.5
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
SF-06	15A047	20.2	7.2	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, NSR

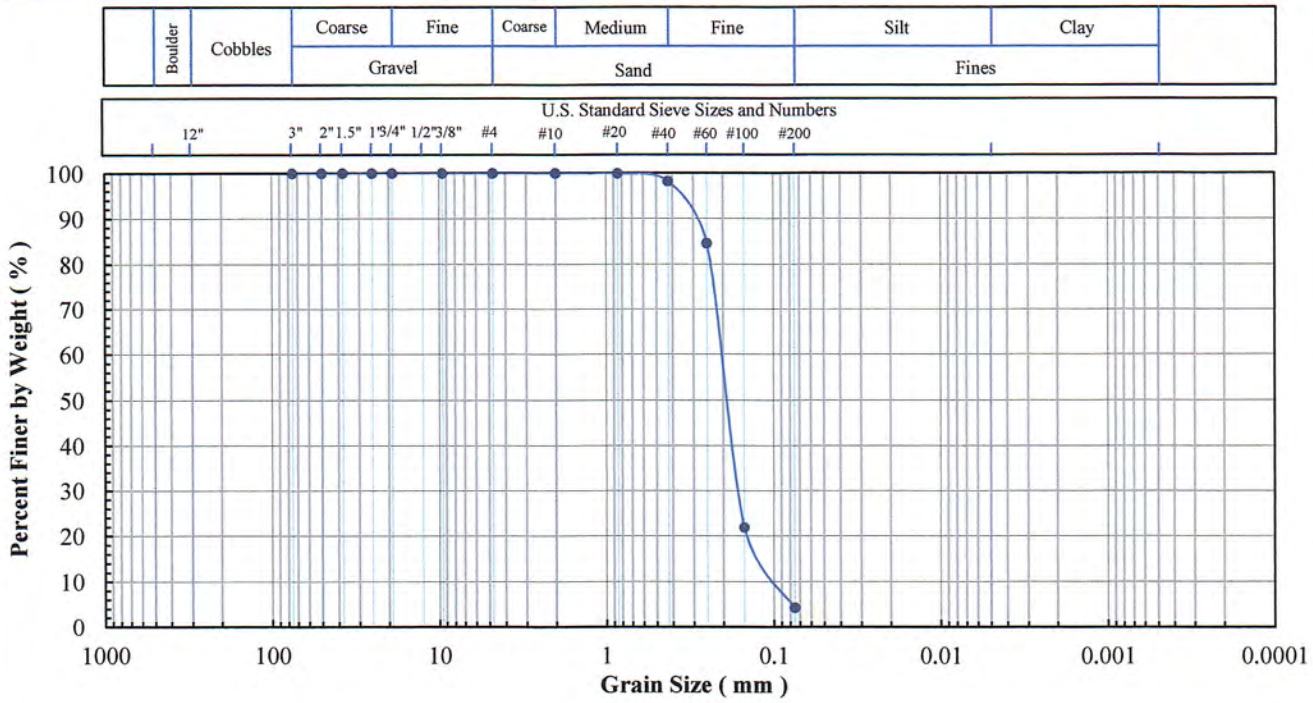
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-07
Lab Sample No:	15A048

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



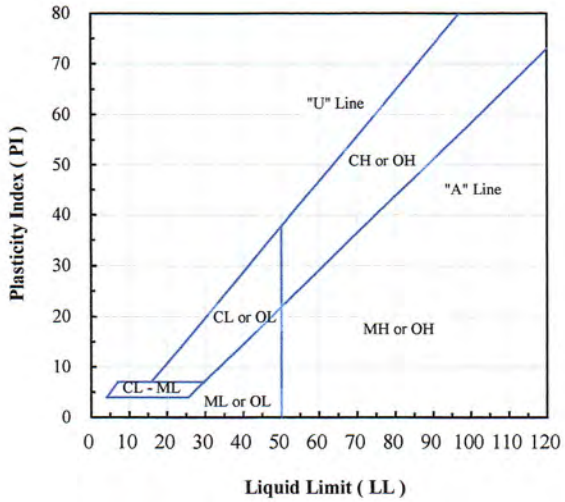
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	98.2
#60	0.250	84.6
#100	0.150	21.9
#200	0.075	4.3

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.7
Fines (%):	4.3
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	1.8
Coeff. Curv. (Cc):	1.5



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-07	15A048	21.8	4.3	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, NSR

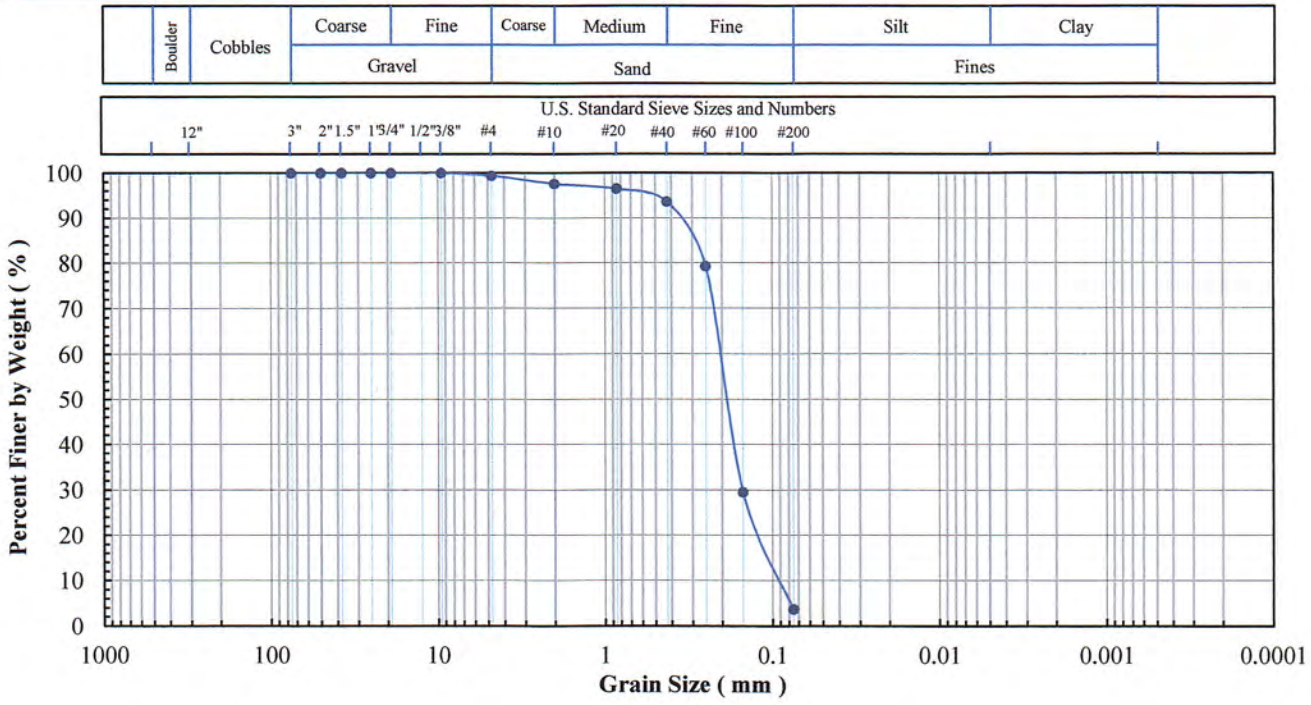
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-08
Lab Sample No:	15A049

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



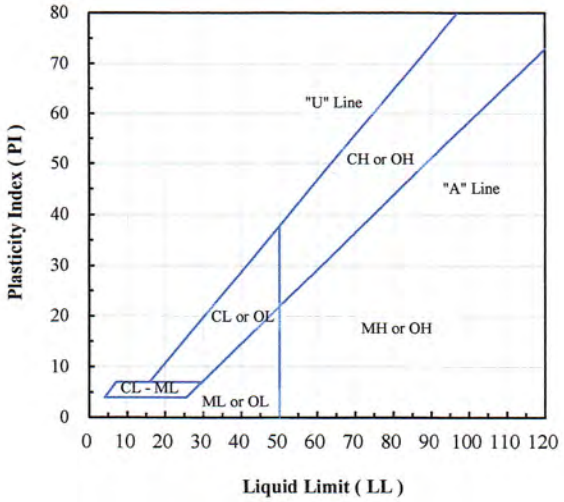
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	99.4
#10	2.00	97.6
#20	0.850	96.5
#40	0.425	93.6
#60	0.250	79.2
#100	0.150	29.5
#200	0.075	3.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	0.6
Sand (%):	95.7
Fines (%):	3.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.3
Coeff. Curv. (Cc):	1.3



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-08	15A049	18.9	3.7	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, JSR

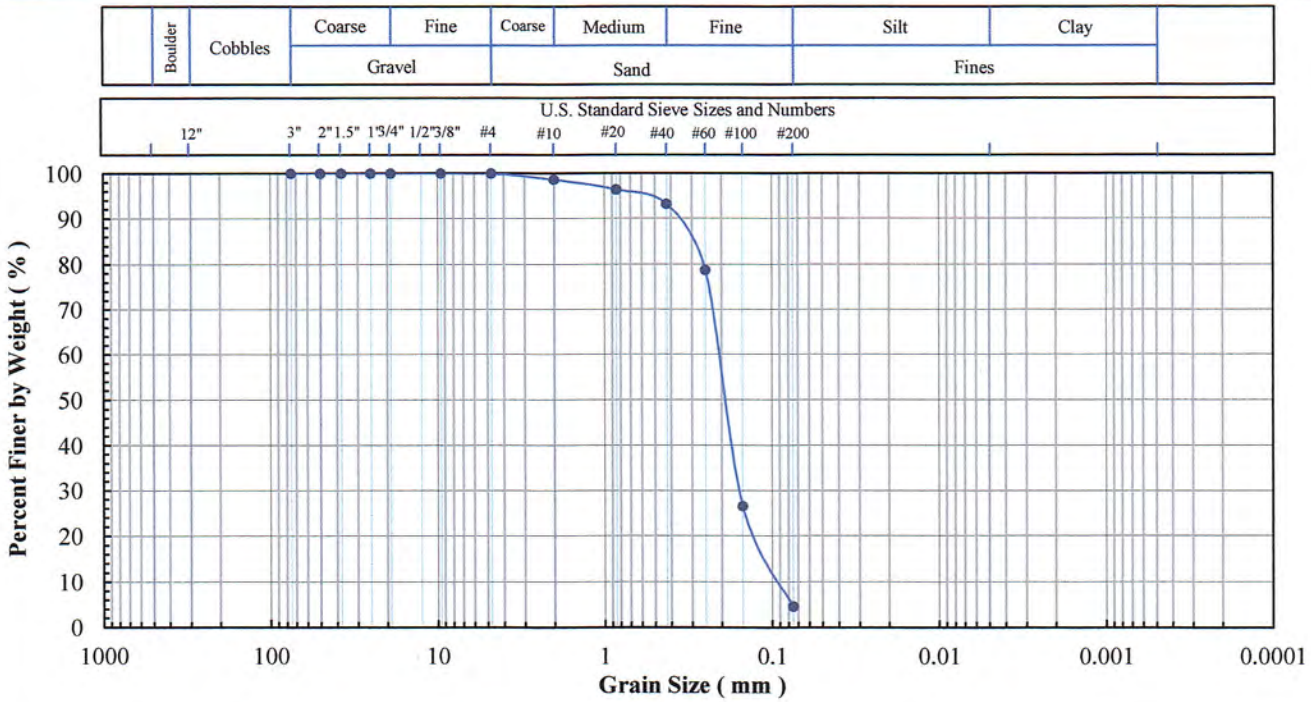
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-09
Lab Sample No:	15A050

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



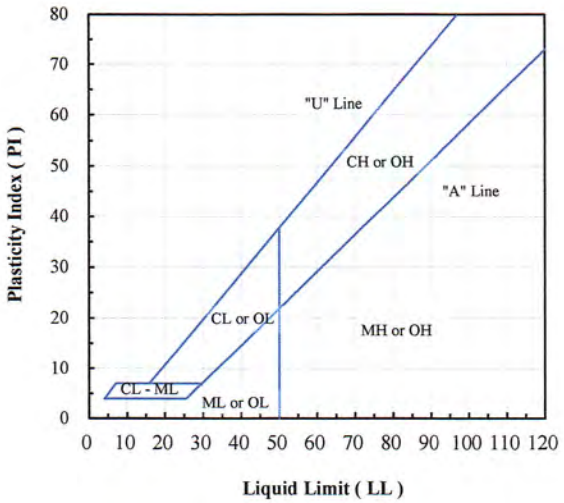
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	98.6
#20	0.850	96.4
#40	0.425	93.2
#60	0.250	78.7
#100	0.150	26.5
#200	0.075	4.6

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.4
Fines (%):	4.6
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.3
Coeff. Curv. (Cc):	1.5



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
SF-09	15A050	19.2	4.6	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, MSK

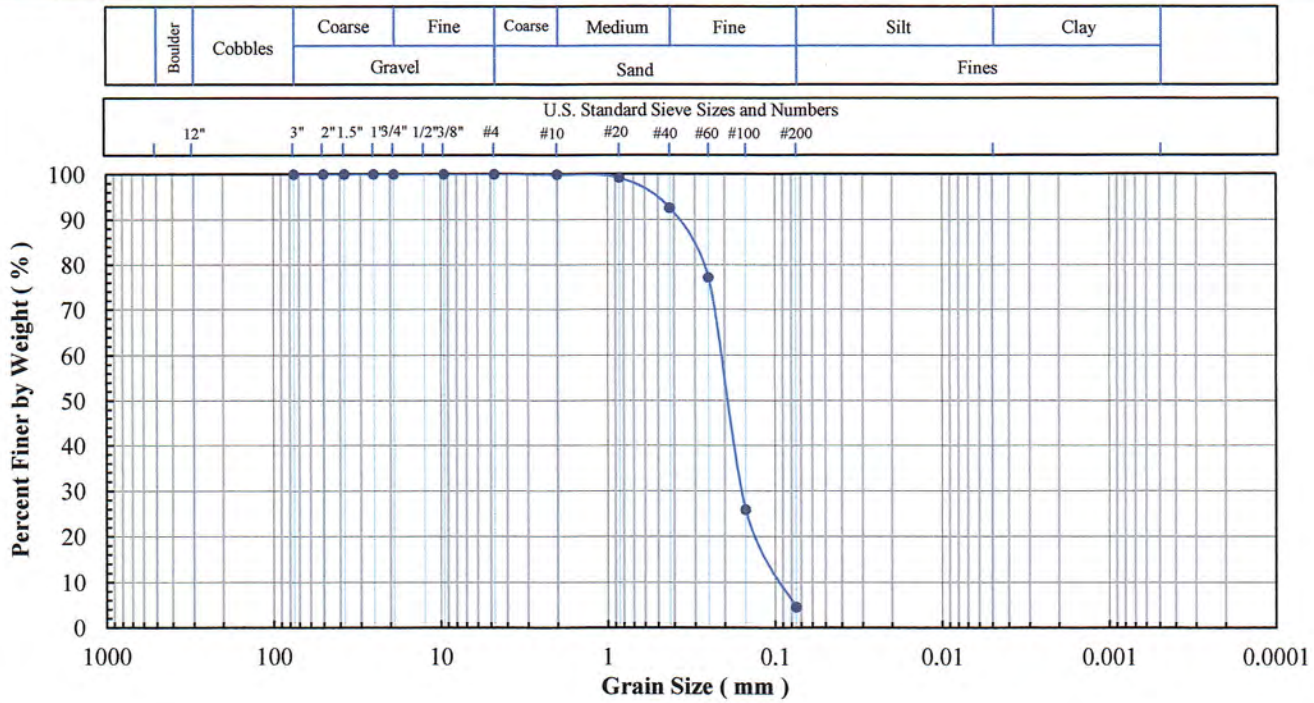
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-10
Lab Sample No:	15A051

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



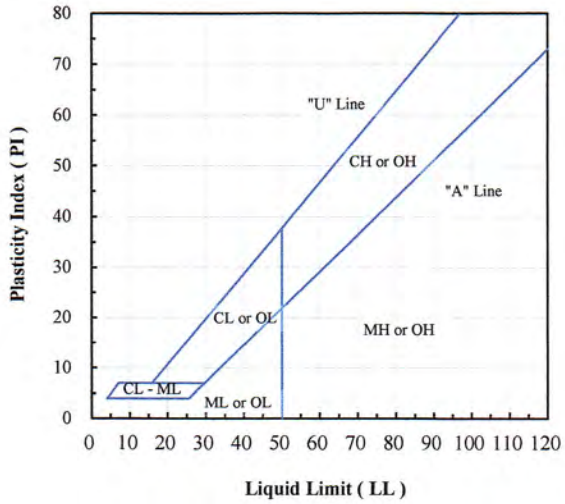
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.2
#40	0.425	92.6
#60	0.250	77.1
#100	0.150	25.9
#200	0.075	4.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.5
Fines (%):	4.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.2
Coeff. Curv. (Cc):	1.6



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
SF-10	15A051	17.3	4.5	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-19-2015 AA, WSR

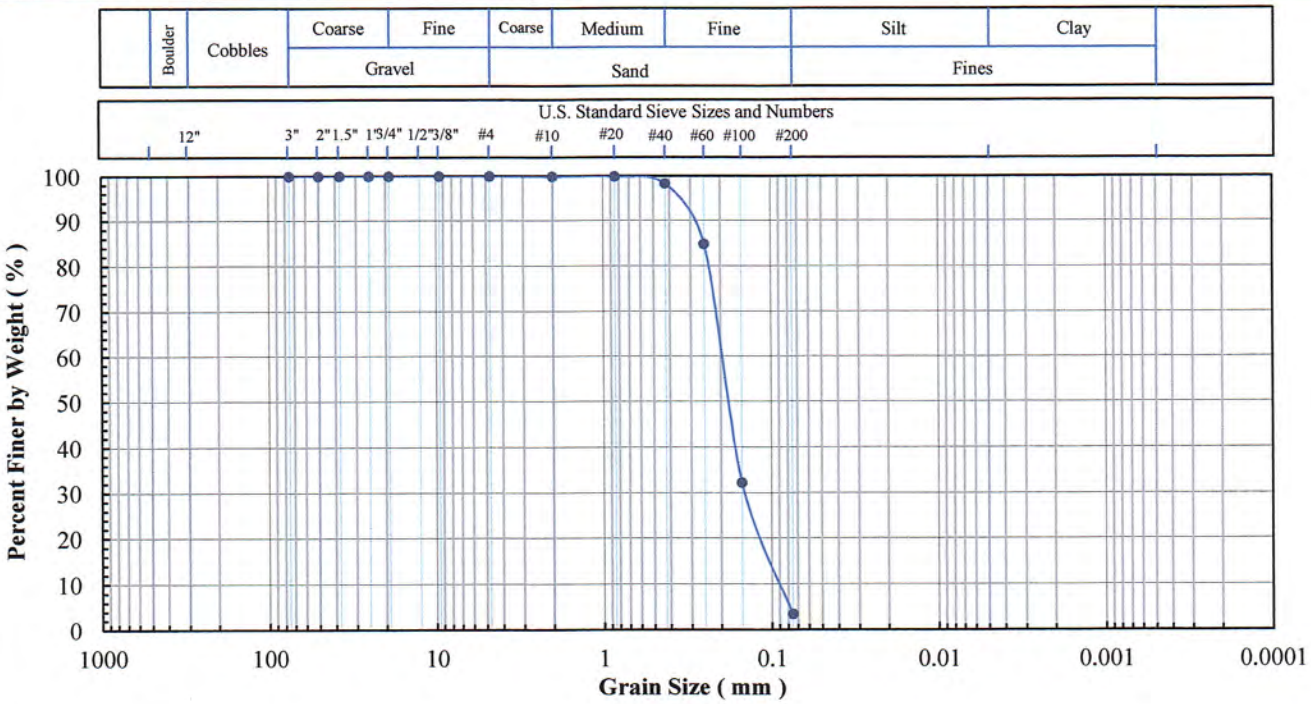
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-11
Lab Sample No:	15A052

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



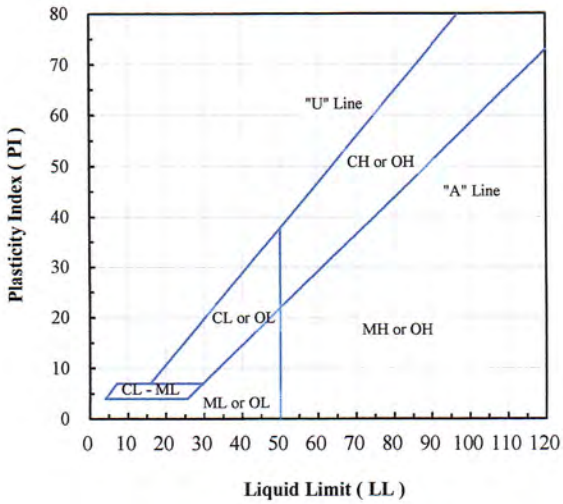
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.9
#40	0.425	98.3
#60	0.250	84.9
#100	0.150	32.2
#200	0.075	3.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	96.5
Fines (%):	3.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.1
Coeff. Curv. (Cc):	1.2



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-11	15A052	17.3	3.5	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015
AA, WSR

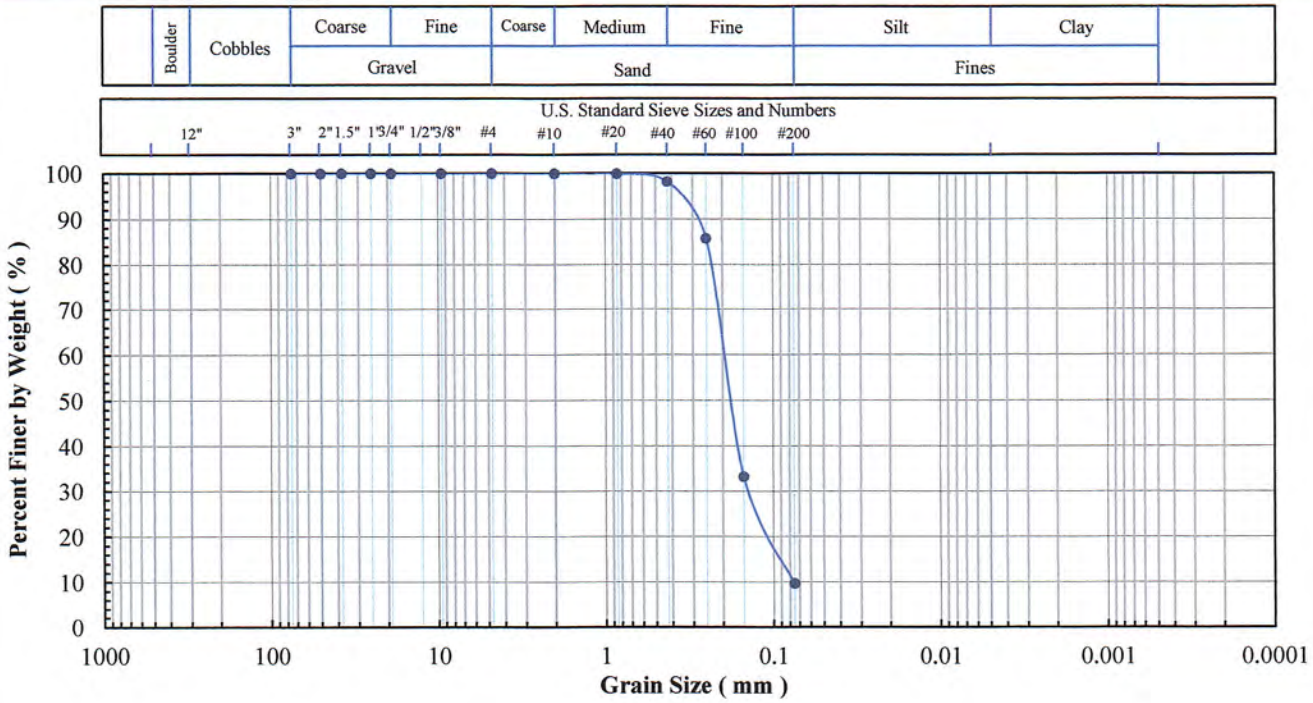
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-12
Lab Sample No:	15A053

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



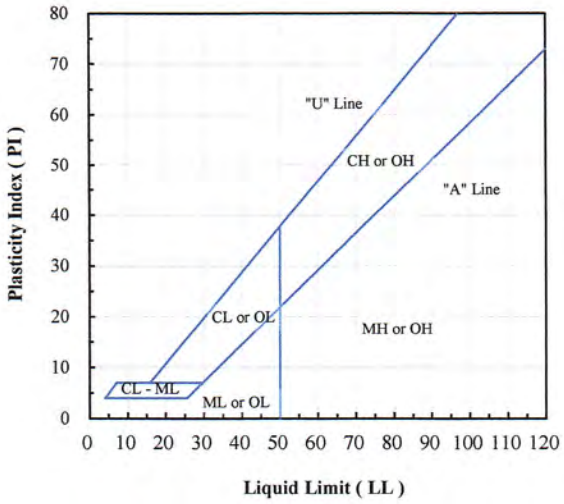
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	98.2
#60	0.250	85.8
#100	0.150	33.2
#200	0.075	9.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	90.3
Fines (%):	9.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.5
Coeff. Curv. (Cc):	1.2



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
SF-12	15A053	19.7	9.7	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015
AA, NSA

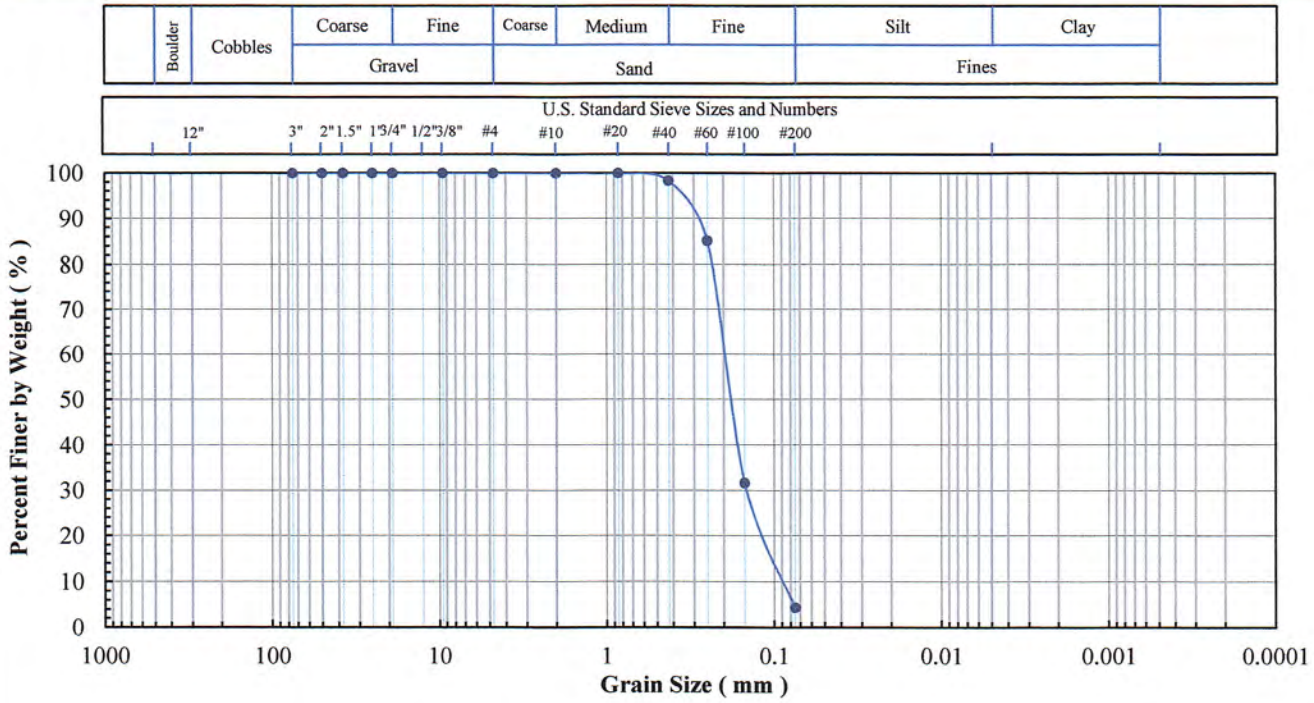
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-13
Lab Sample No:	15A054

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



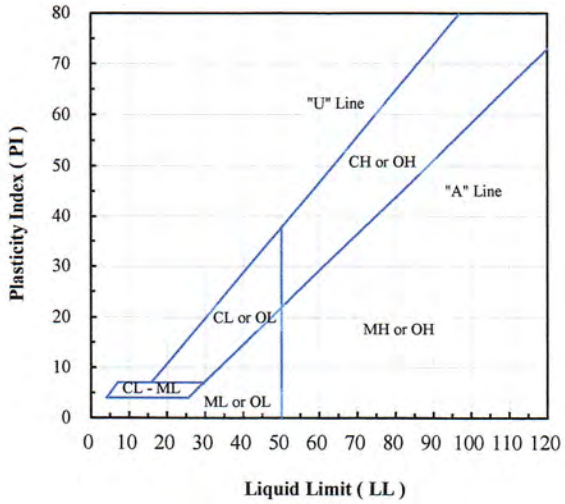
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.3
#60	0.250	85.1
#100	0.150	31.6
#200	0.075	4.4

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.6
Fines (%):	4.4
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.2
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
SF-13	15A054	16.5	4.4	NP	NP	NP	SP - Poorly graded sand

Note(s): Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, NSM

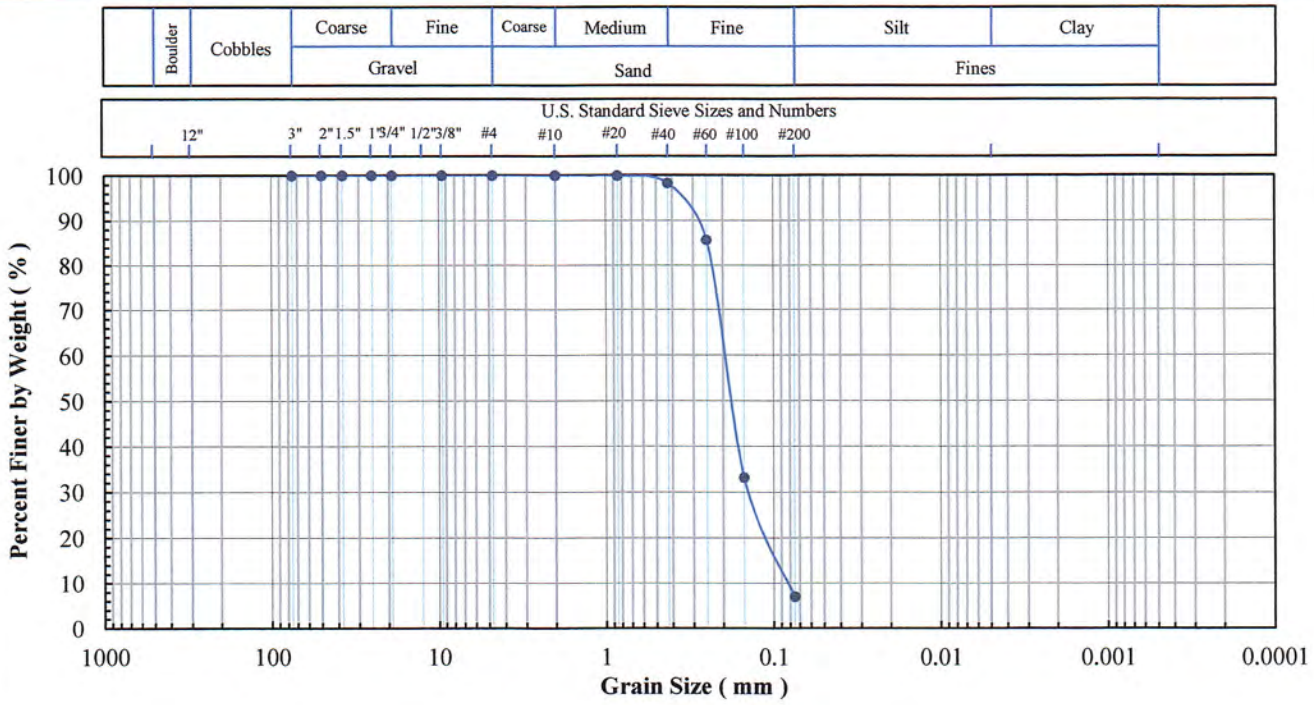
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-14
Lab Sample No:	15A055

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



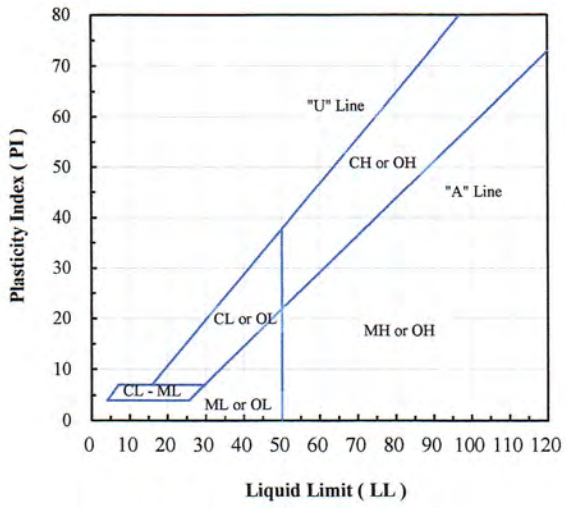
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	98.3
#60	0.250	85.7
#100	0.150	33.2
#200	0.075	7.0

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	93.0
Fines (%):	7.0
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.5
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
SF-14	15A055	19.4	7.0	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015
AA, MSK

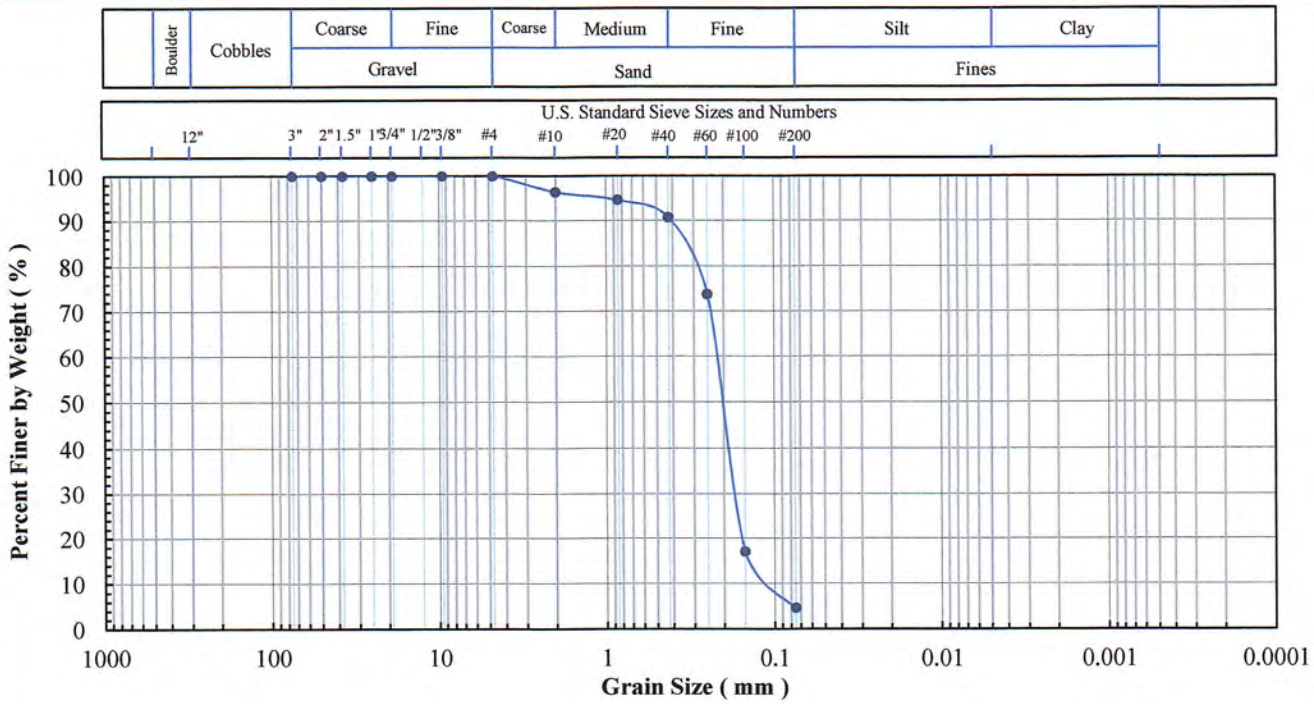
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-15
Lab Sample No:	15A056

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



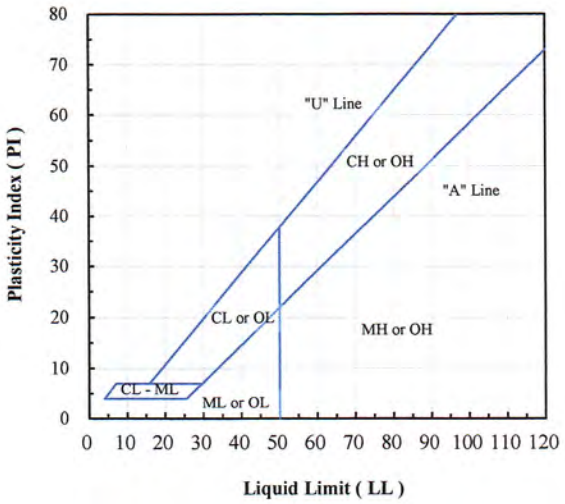
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	96.4
#20	0.850	94.6
#40	0.425	90.7
#60	0.250	73.8
#100	0.150	17.1
#200	0.075	4.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.3
Fines (%):	4.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	1.7
Coeff. Curv. (Cc):	1.1



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-15	15A056	14.8	4.7	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015
AA, MSM

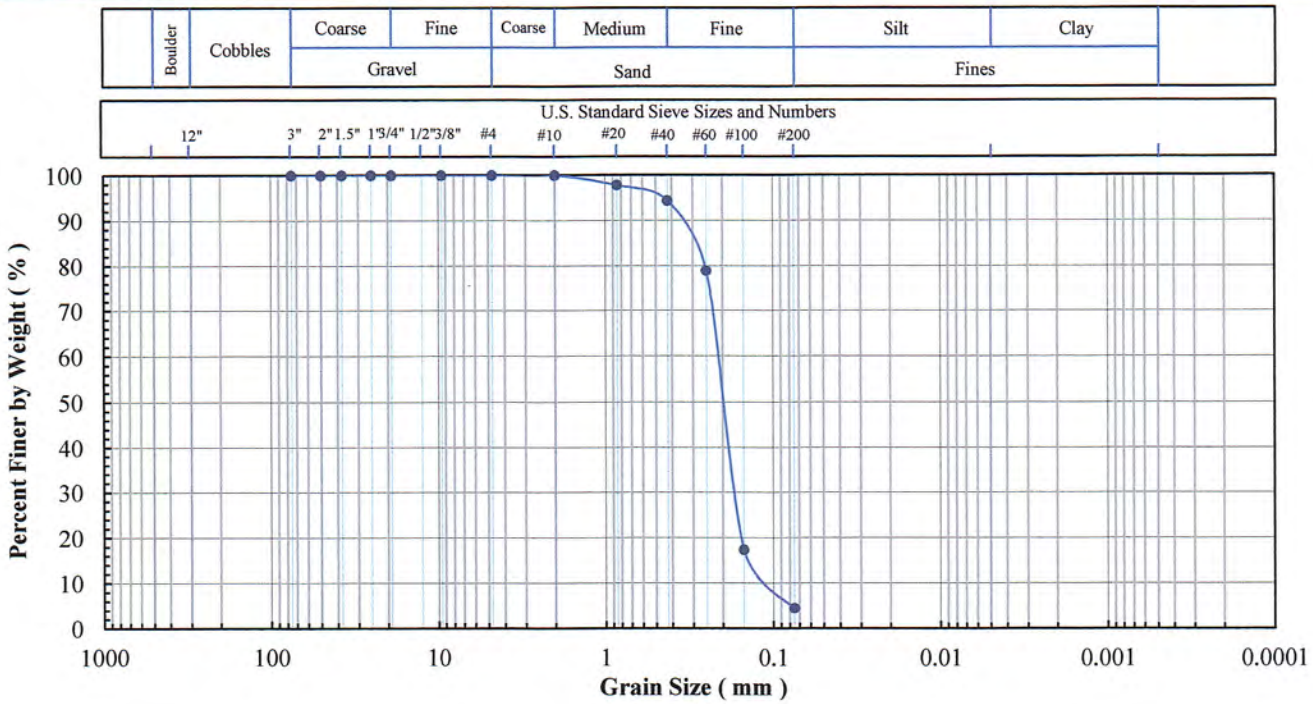
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	SF-16
Lab Sample No:	15A057

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



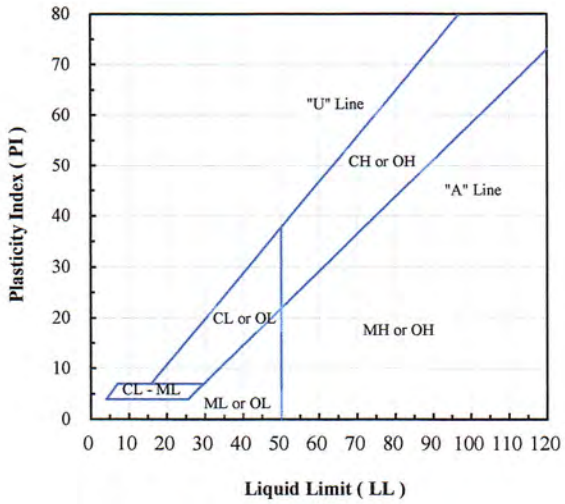
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	97.8
#40	0.425	94.4
#60	0.250	78.9
#100	0.150	17.4
#200	0.075	4.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.5
Fines (%):	4.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	1.8
Coeff. Curv. (Cc):	1.3



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
SF-16	15A057	14.8	4.5	NP	NP	NP	SP - Poorly graded sand

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-15 AA, NSR

Section 2
Protective Cover

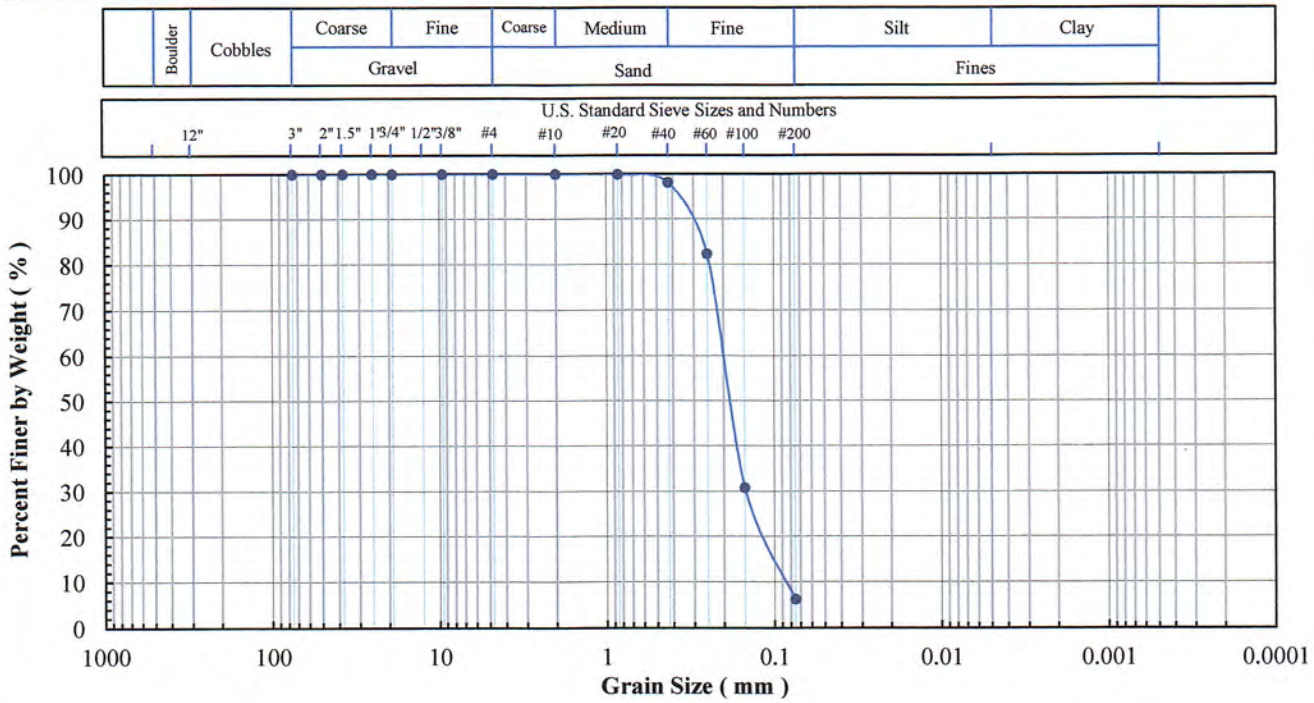
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	PSL-01
Lab Sample No:	15A058

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



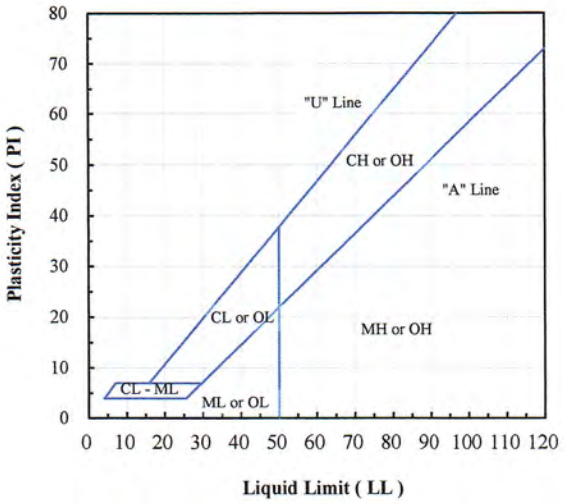
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	98.1
#60	0.250	82.3
#100	0.150	30.8
#200	0.075	6.2

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	93.8
Fines (%):	6.2
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.4
Coeff. Curv. (Cc):	1.5



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
PSL-01	15A058	8.5	6.2	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015
AA, NSM

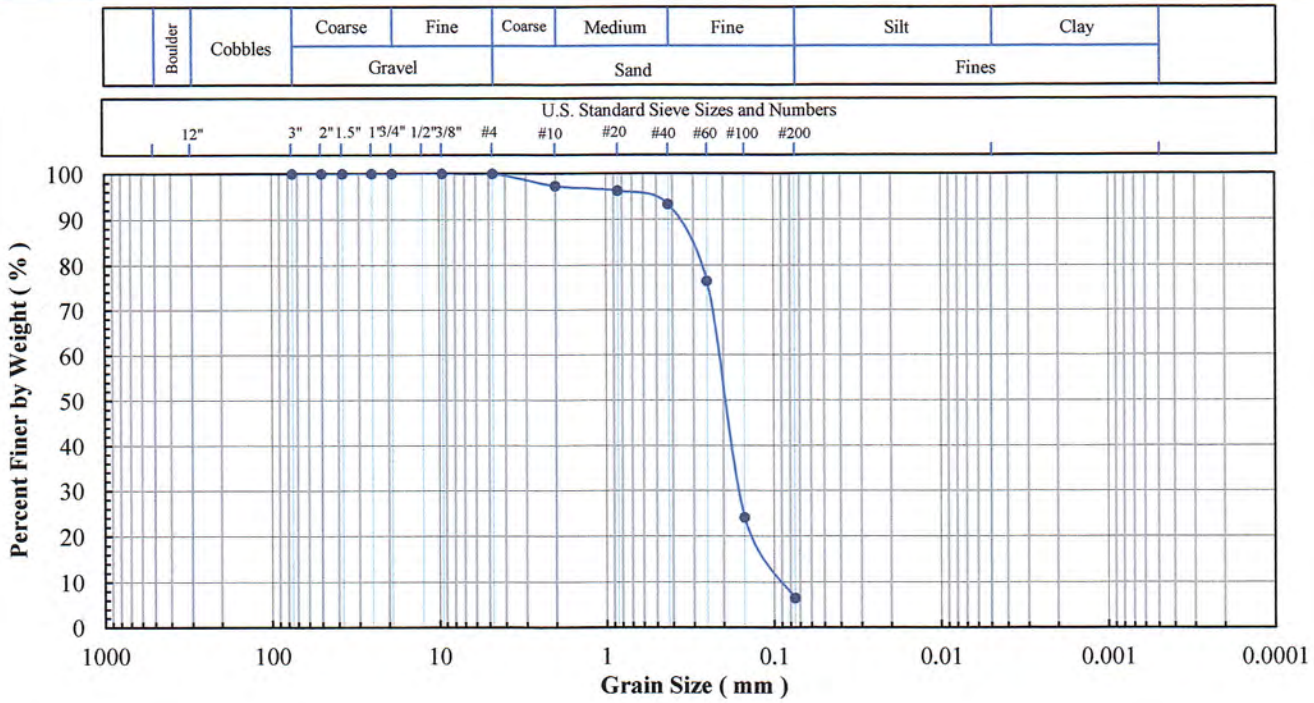
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	PSL-02
Lab Sample No:	15A059

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



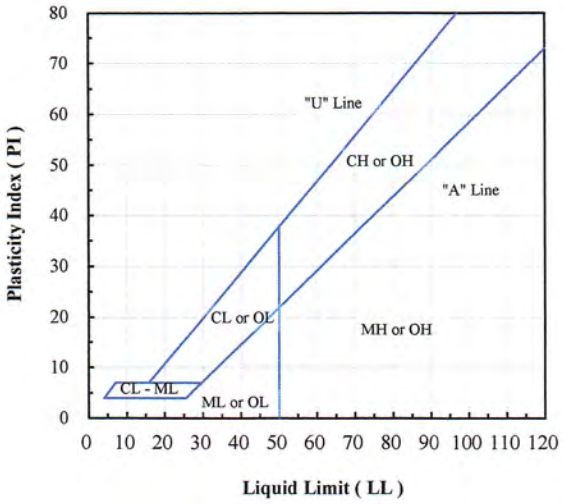
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	97.3
#20	0.850	96.2
#40	0.425	93.3
#60	0.250	76.5
#100	0.150	24.1
#200	0.075	6.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	93.5
Fines (%):	6.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.3
Coeff. Curv. (Cc):	1.5



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PSL-02	15A059	12.5	6.5	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015
AA, USA

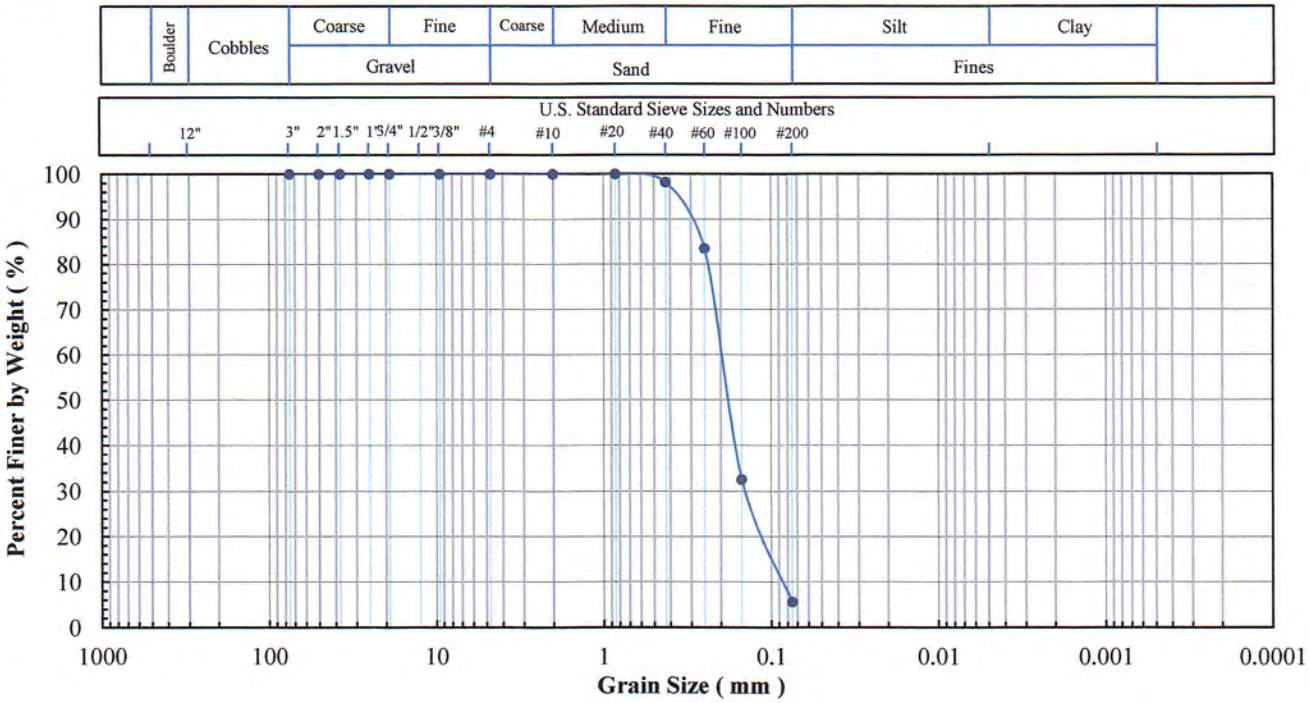
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	PSL-03
Lab Sample No:	15A060

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



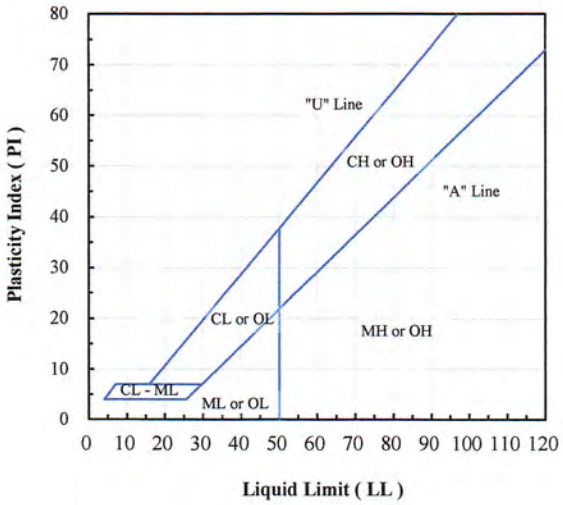
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.2
#60	0.250	83.5
#100	0.150	32.6
#200	0.075	5.6

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	94.4
Fines (%):	5.6
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.4
Coeff. Curv. (Cc):	1.5



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
PSL-03	15A060	11.6	5.6	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, NSA

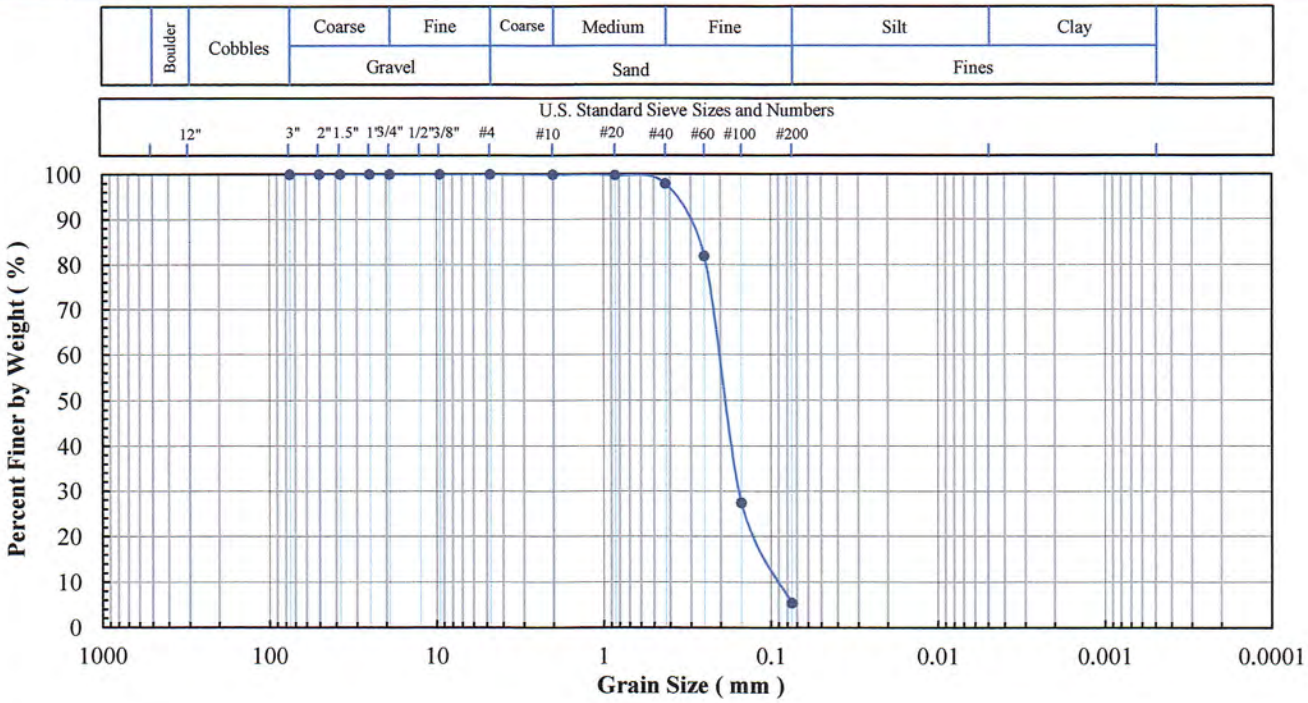
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JC11
Project No:	686
Client Sample ID:	PSL-04
Lab Sample No:	15A061

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



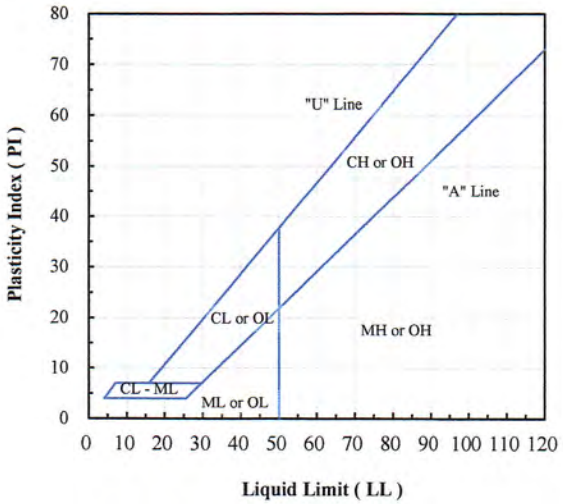
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.8
#40	0.425	97.9
#60	0.250	81.9
#100	0.150	27.4
#200	0.075	5.4

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	94.6
Fines (%):	5.4
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.2
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
PSL-04	15A061	11.1	5.4	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, NSM

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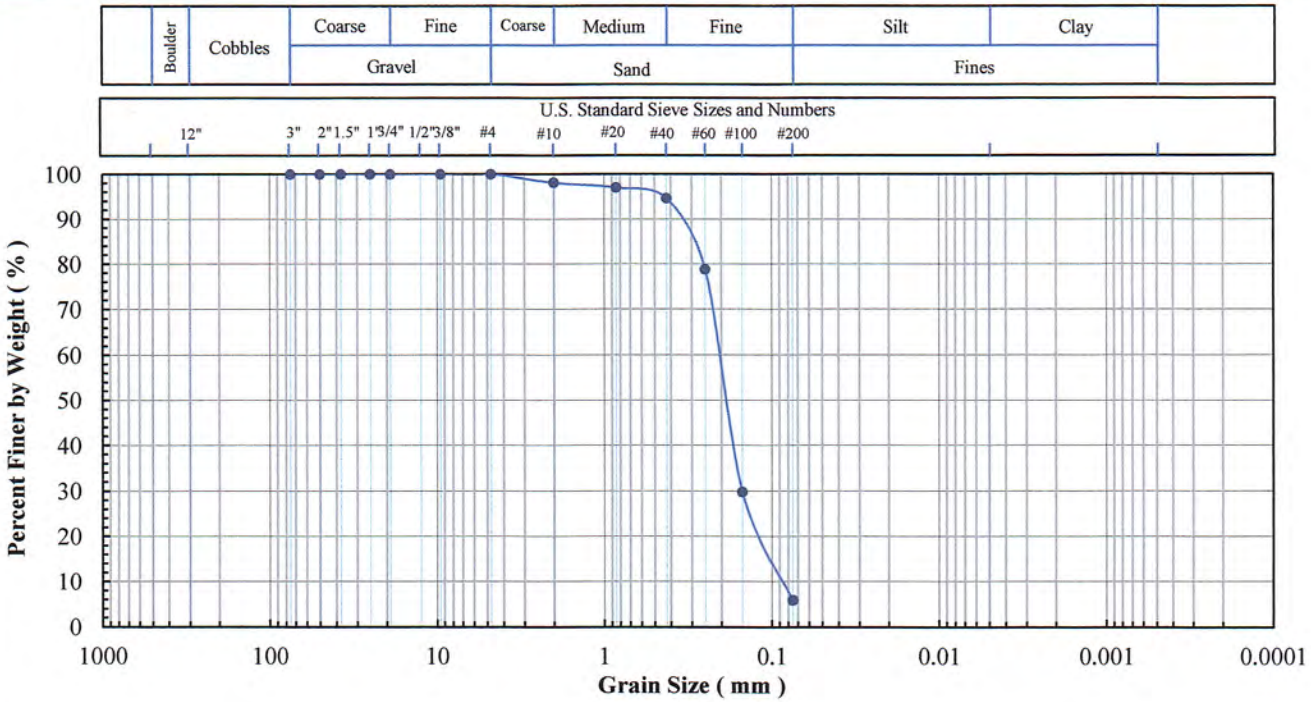
Project Name:	JC11
Project No:	686
Client Sample ID:	PSL-05
Lab Sample No:	15A062

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



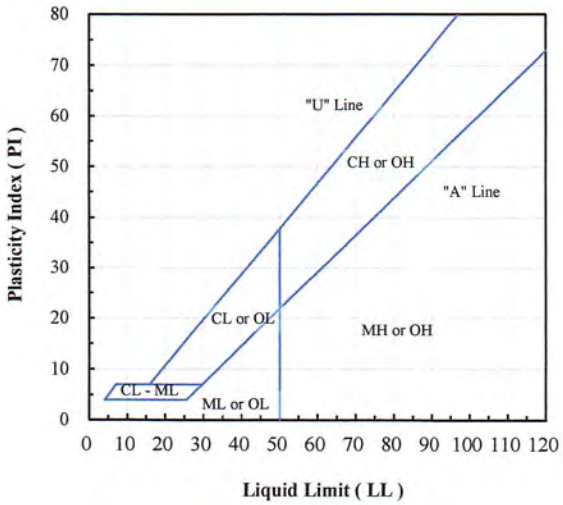
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	98.1
#20	0.850	97.0
#40	0.425	94.6
#60	0.250	78.8
#100	0.150	29.8
#200	0.075	5.9

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	94.1
Fines (%):	5.9
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.2
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PSL-05	15A062	10.2	5.9	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, WSR

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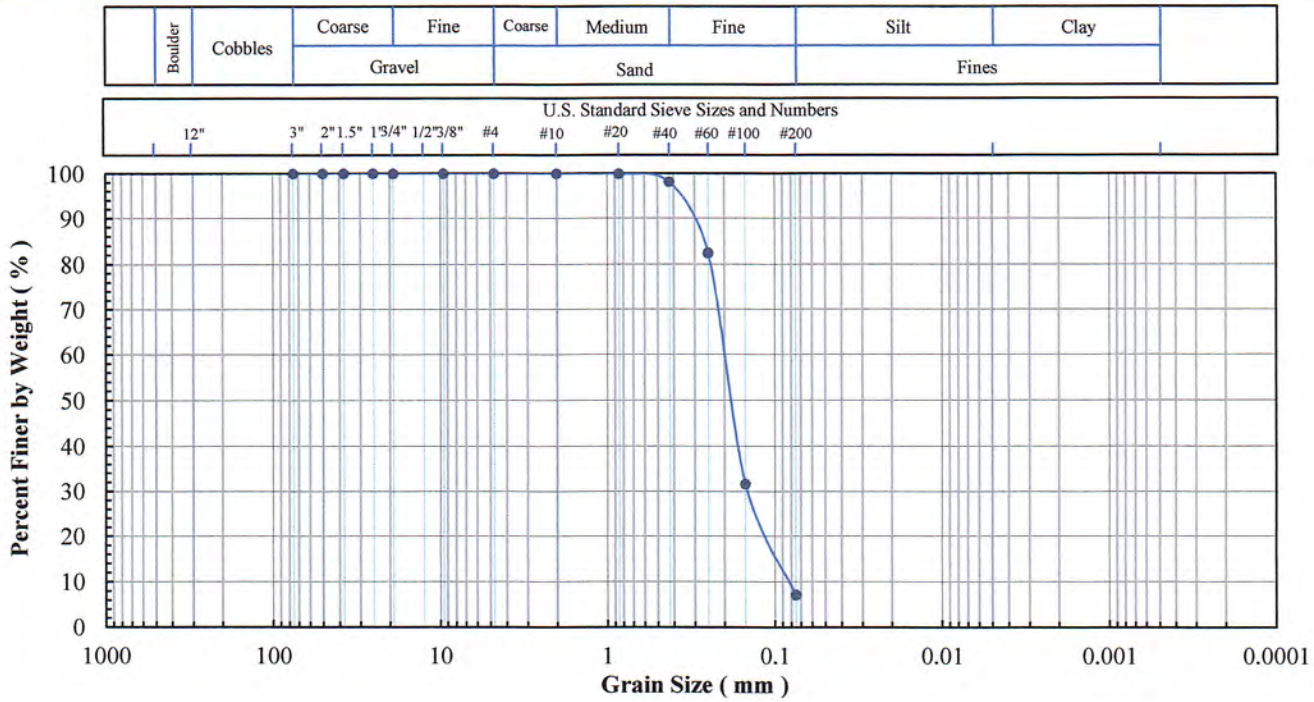
Project Name:	JC11
Project No:	686
Client Sample ID:	PSL-06
Lab Sample No:	15A063

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



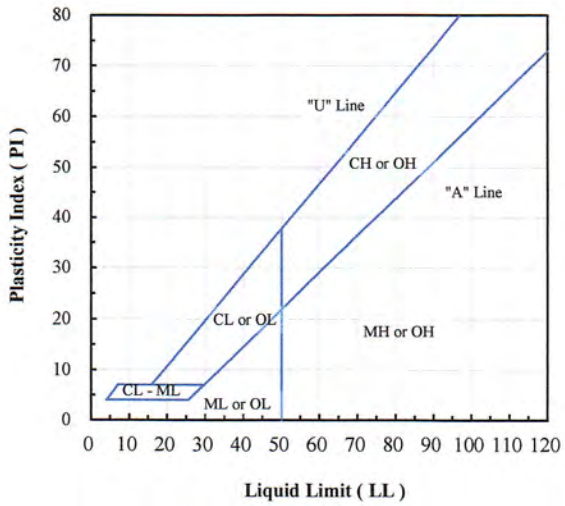
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	98.1
#60	0.250	82.4
#100	0.150	31.6
#200	0.075	7.2

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	92.8
Fines (%):	7.2
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.4
Coeff. Curv. (Cc):	1.5



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PSL-06	15A063	10.8	7.2	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.

3-18-2015 AA, NSR

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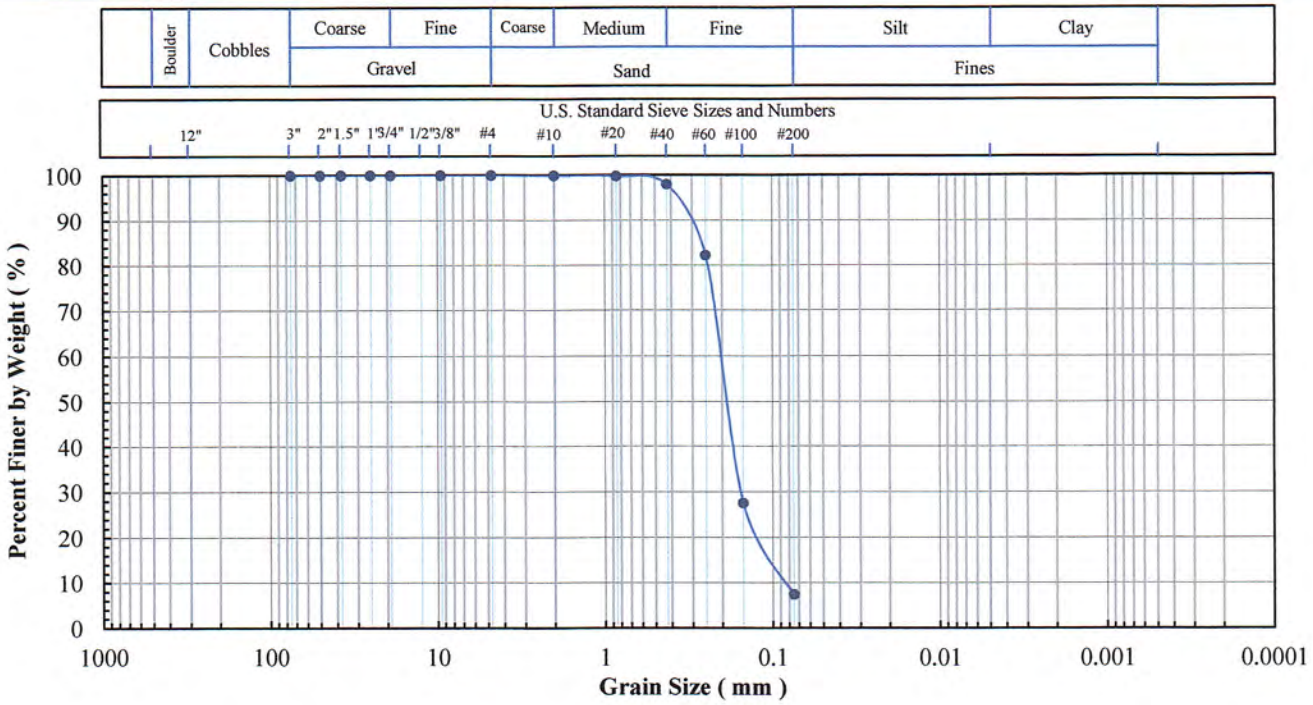
Project Name:	JC11
Project No:	686
Client Sample ID:	PSL-07
Lab Sample No:	15A064

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



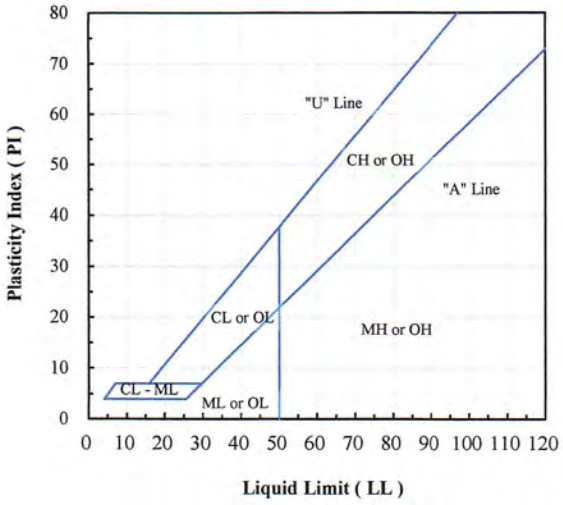
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.8
#40	0.425	98.0
#60	0.250	82.2
#100	0.150	27.6
#200	0.075	7.4

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	92.6
Fines (%):	7.4
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.4
Coeff. Curv. (Cc):	1.5



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
PSL-07	15A064	9.7	7.4	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-18-2015 AA, KSA

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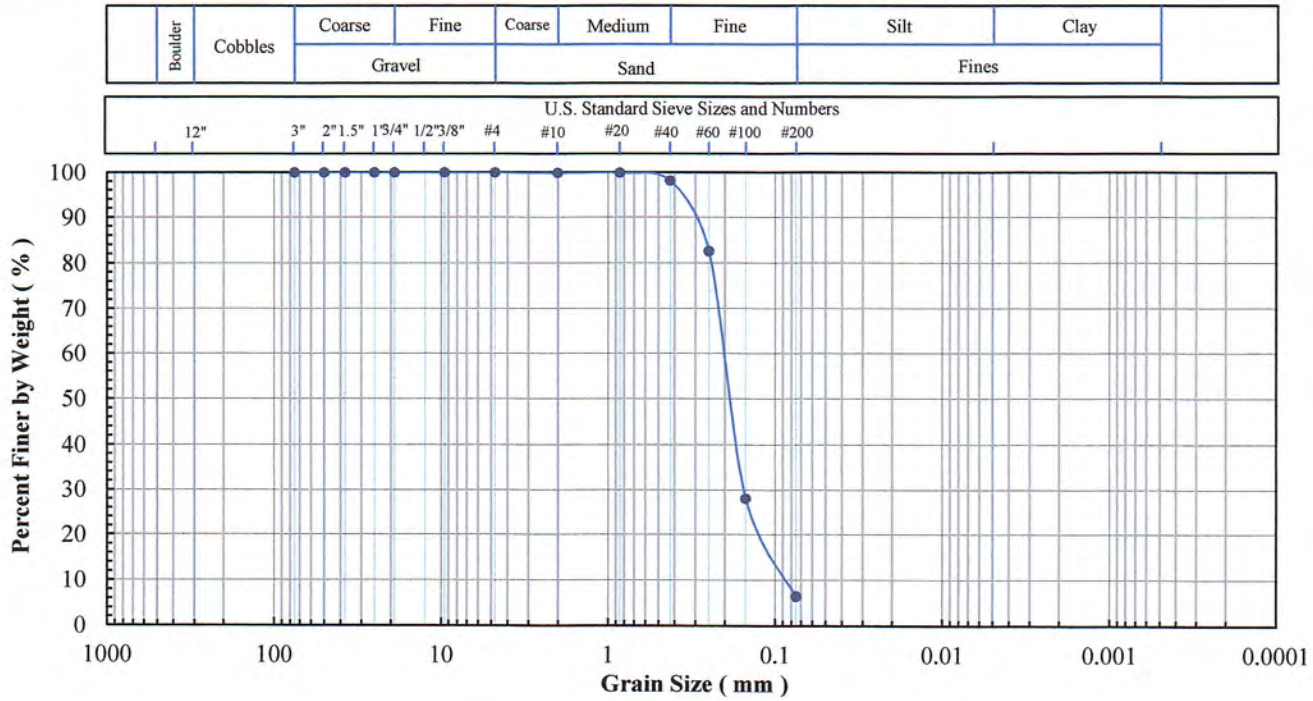
Project Name:	JC11
Project No:	686
Client Sample ID:	PSL-08
Lab Sample No:	15A065

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



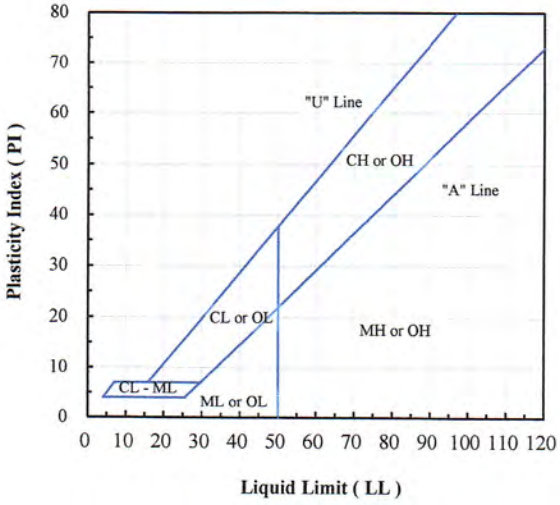
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.9
#40	0.425	98.1
#60	0.250	82.6
#100	0.150	28.1
#200	0.075	6.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	93.5
Fines (%):	6.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.2
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
PSL-08	15A065	11.8	6.5	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s): The Atterberg results presented is based on the tests peformed on Samples SF-04, SF-13 and PSL-05.
Engineering classification is based on the assumption that the fines are either ML or MH.

3-19-2015 AA, MSK

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RIGID WALL PERMEABILITY TEST (1)

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	PSL-01
Lab Sample Number:	15A058
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	2/04/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)	(-)	(-)	(cm/s)
1	R	14.2	7.6	101.9	0.0	DTW	0.34 - 1.44	6.5E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:
Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

3-18-2015 AA, NSR

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RIGID WALL PERMEABILITY TEST (1)

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	PSL-02
Lab Sample Number:	15A059
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	2/05/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content(3) (%)	(-)	(-)	(cm/s)
1	R	14.0	7.6	98.4	0.0	DTW	0.07 - 0.73	8.2E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:
Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

3-10-2015
AA, JSR

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RIGID WALL PERMEABILITY TEST[1]

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	PSL-03
Lab Sample Number:	15A060
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	2/05/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content[3] (%)	(-)	(-)	(cm/s)
1	R	14.0	7.6	102.6	0.0	DTW	0.13 - 0.80	5.5E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:
Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

3-18-2015
AA, NSR

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RIGID WALL PERMEABILITY TEST[1]

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	PSL-04
Lab Sample Number:	15A061
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	2/27/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content[3] (%)	(-)	(-)	(cm/s)
1	R	14.1	7.6	97.3	0.0	DTW	0.16 - 0.41	1.1E-2

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:
Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

3-18-2015 AA, NSR

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RIGID WALL PERMEABILITY TEST[1]

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	PSL-05
Lab Sample Number:	15A062
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	3/05/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content[3] (%)	(-)	(-)	(cm/s)
1	R	14.4	7.6	98.9	0.0	DTW	0.29 - 0.49	8.5E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:
Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

3-18-2015 AA/MSM

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RIGID WALL PERMEABILITY TEST[1]

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	PSL-06
Lab Sample Number:	15A063
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	3/05/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content[3] (%)	(-)	(-)	(cm/s)
1	R	14.1	7.6	98.2	0.0	DTW	0.29 - 0.46	1.1E-2

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:
Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

3-18-2015
AA, NSM

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RIGID WALL PERMEABILITY TEST (1)

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	PSL-07
Lab Sample Number:	15A064
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	3/09/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)	(-)	(-)	(cm/s)
1	R	14.4	7.6	99.0	0.0	DTW	0.10 - 0.49	7.0E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:
Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

3-18-2015
AA, NSR

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RIGID WALL PERMEABILITY TEST (1)

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	PSL-08
Lab Sample Number:	15A065
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	3/09/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content(3) (%)	(-)	(-)	(cm/s)
1	R	14.3	7.6	100.2	0.0	DTW	0.10 - 0.64	4.1E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:
Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

3-18-2015 AA, NSR

Section 3
#4 Stone and #57 Stone

Excel Geotechnical Testing, Inc.
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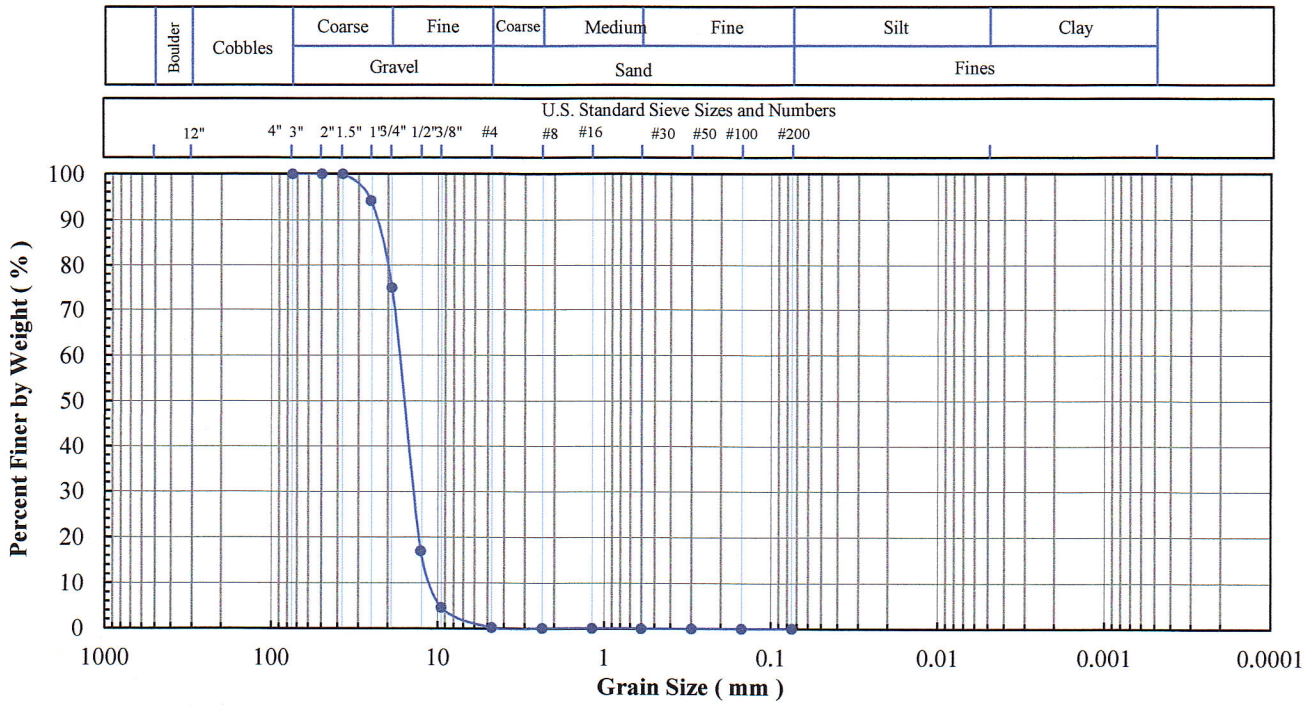
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11
Project No:	686
Client Sample ID:	#57 Stone
Lab Sample No:	15D129

ASTM C 136, D 422, D 854, D 1140, D 2216, D 2487, D 4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits

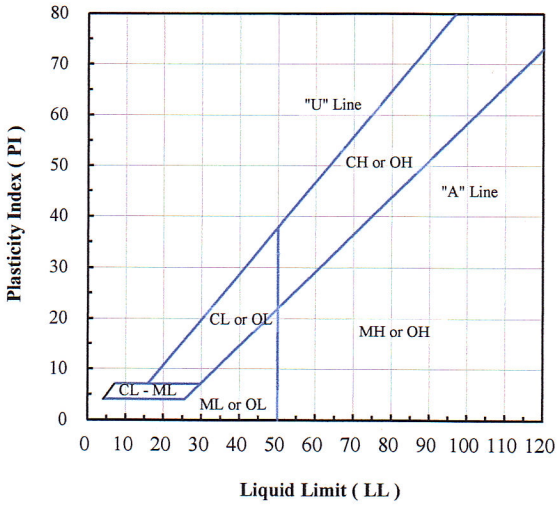


Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	94.1
3/4"	19	75.0
1/2"	12.7	17.1
3/8"	9.5	4.7
#4	4.75	0.2
#8	2.00	0.1
#16	0.850	0.1
#30	0.425	
#50	0.250	
#100	0.150	
#200	0.075	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	99.8
Sand (%):	0.2
Fines (%):	
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	1.5
Coeff. Curv. (Cc):	1.0



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
#57 Stone	15D129						GP - Poorly graded gravel

Note(s):

5-OCT-15 NSR

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953 Forrest Street, Roswell, Georgia 30075
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RIGID WALL PERMEABILITY TEST [1]

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	#57 Stone
Lab Sample Number:	15D129
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	5/05/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic [5] Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content [3] (%)		(-)	(cm/s)
1	R	29.6	23.0	101.3	0.0	DTW	0.004 - 0.013	1.4E+1

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 5 layers, each approximately 6.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water
5. Burette readings are commonly unstable for high permeability materials and the permeability measurements are some what inaccurate.

* Deviations:

Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.
The entire sample was used (i.e., particles larger than 3/4 in. Seive, if any, were not removed).

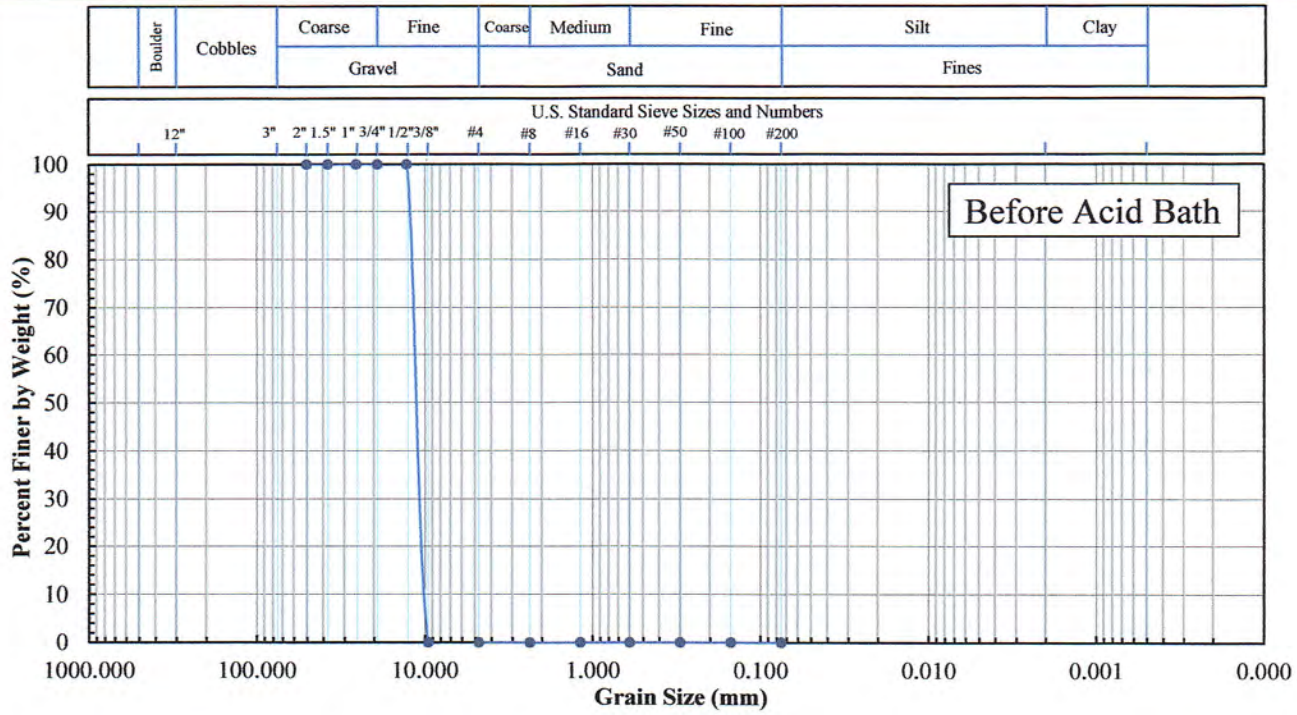
5-07-15
NSR

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11
Project No:	686
Client Sample ID	#57 Stone
Lab Sample No:	15D129

ASTM D 3042

INSOLUBLE RESIDUE IN CARBONATE AGGREGATES

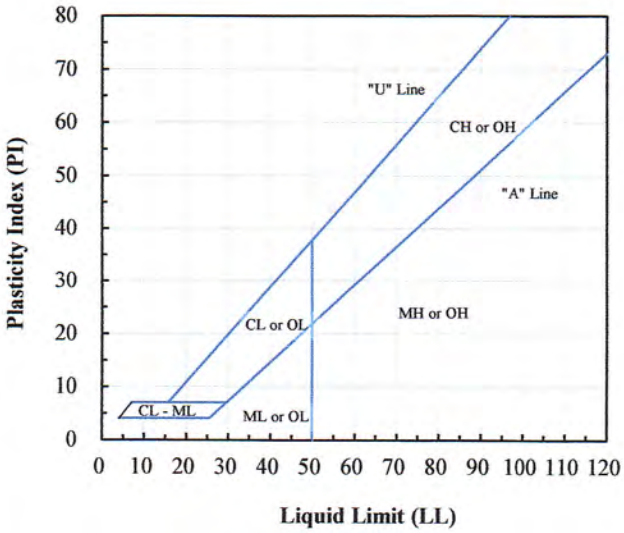


Sieve No.	Size (mm)	% Finer
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.7	100.0
3/8"	9.50	
#4	4.75	
#8	2.00	
#16	0.850	
#30	0.425	
#50	0.250	
#100	0.150	
#200	0.075	

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	100.0
Sand (%):	
Fines (%):	
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
#57 Stone	15D129						

Note(s): Only particles passed through 1/2 inch Sieve and washed over 3/8 inch Sieve were used.

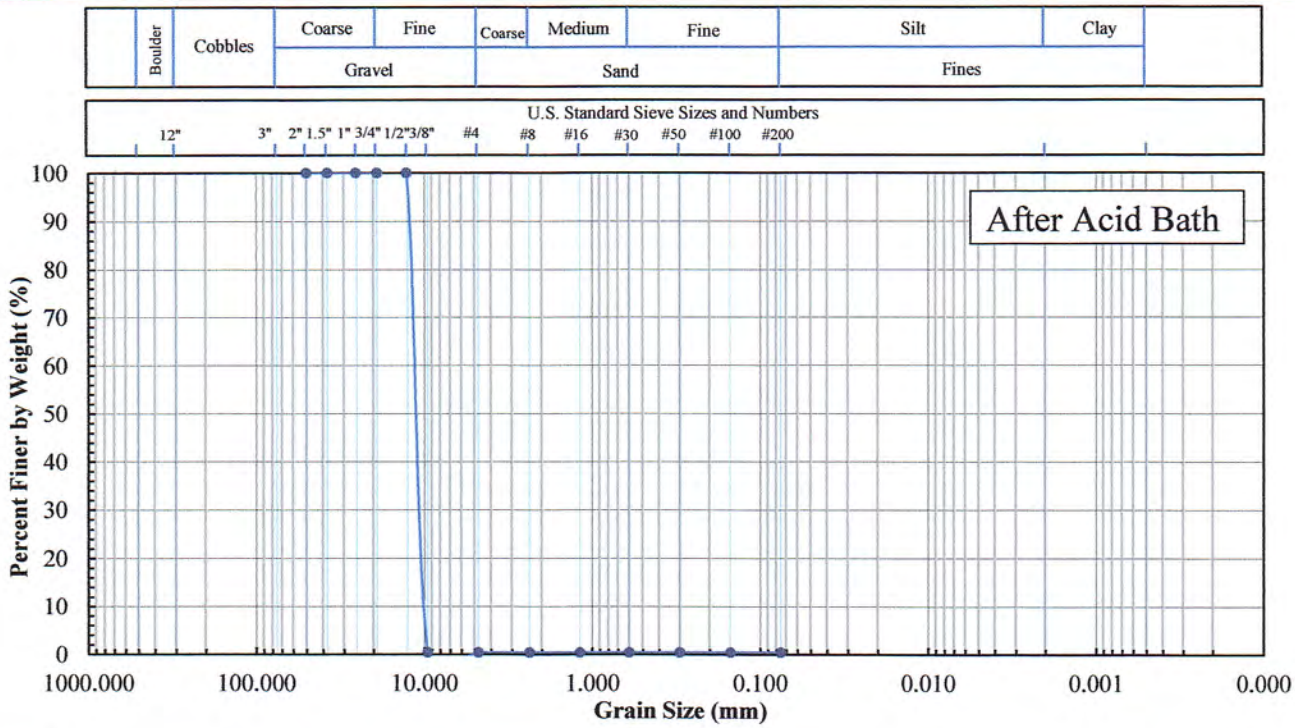
6-13-15
MSM

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11
Project No:	686
Client Sample ID	#57 Stone
Lab Sample No:	15D129

ASTM D 3042

INSOLUBLE RESIDUE IN CARBONATE AGGREGATES

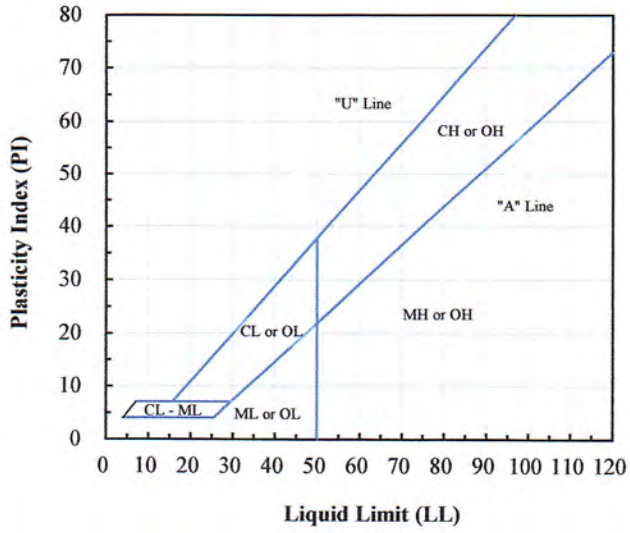


Sieve No.	Size (mm)	% Finer
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.7	100.0
3/8"	9.50	0.5
#4	4.75	0.5
#8	2.00	0.5
#16	0.850	0.5
#30	0.425	0.5
#50	0.250	0.5
#100	0.150	0.5
#200	0.075	0.5

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	99.5
Sand (%):	
Fines (%):	0.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	**Total Insoluble Residue** (%)
#57 Stone	15D129		0.5				99.5

Note(s): Only particles passed through 1/2 inch Sieve and washed over 3/8 inch Sieve were used.

6-13-15 NSR

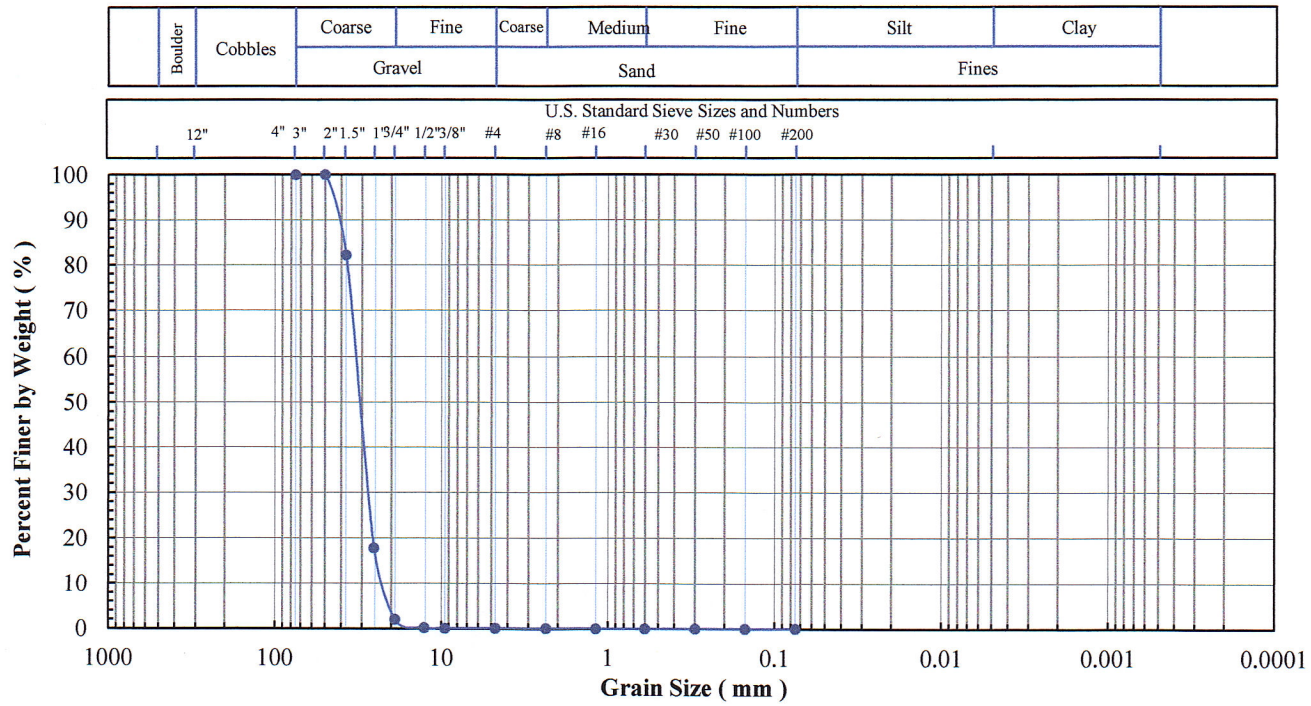
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11
Project No:	686
Client Sample ID:	#4 Stone
Lab Sample No:	15D128

ASTM C 136, D 422, D 854, D 1140, D 2216, D 2487, D 4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits

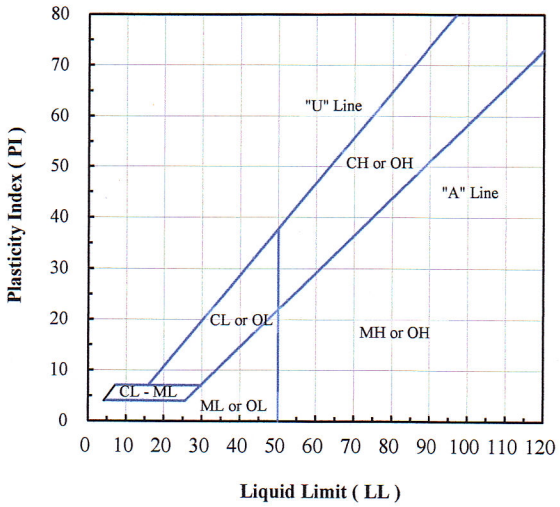


Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	82.2
1"	25	17.9
3/4"	19	2.0
1/2"	12.7	0.2
3/8"	9.5	0.1
#4	4.75	0.1
#8	2.00	
#16	0.850	
#30	0.425	
#50	0.250	
#100	0.150	
#200	0.075	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	99.9
Sand (%):	0.1
Fines (%):	
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	1.4
Coeff. Curv. (Cc):	1.0



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
#4 Stone	15D128						GP - Poorly graded gravel

Note(s):

5-07-15 NJK

Excel Geotechnical Testing, Inc.
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953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

RIGID WALL PERMEABILITY TEST (1)

ASTM D 2434 *

Project Name:	JED Cell 11
Project Number:	686
Client Name:	Brantley Engineering
Site Sample ID:	#4 Stone
Lab Sample Number:	15D128
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	5/05/2015

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic (5) Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)		(-)	(cm/s)
1	R	29.2	23.0	97.8	0.0	DTW	0.002 - 0.007	2.8E+1

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 5 layers, each approximately 6.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water
5. Burette readings are commonly unstable for high permeability materials and the permeability measurements are some what inaccurate.

* Deviations:

Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.
The entire sample was used (i.e., particles larger than 3/4 in. Seive, if any, were not removed).

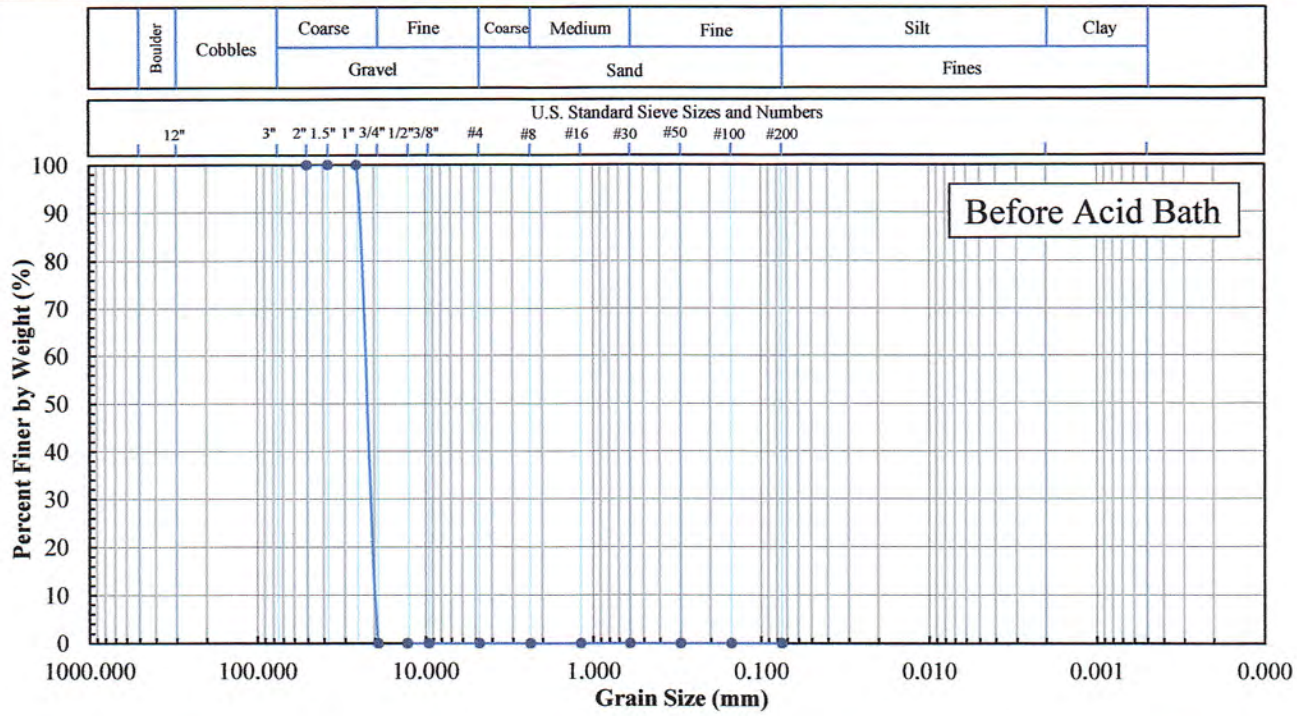
5-07-15
NSR

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11
Project No:	686
Client Sample ID	#4 Stone
Lab Sample No:	15D128

ASTM D 3042

INSOLUBLE RESIDUE IN CARBONATE AGGREGATES

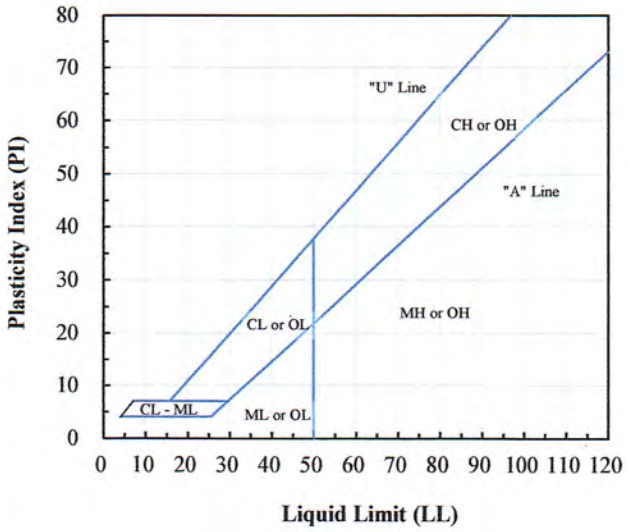


Sieve No.	Size (mm)	% Finer
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	
1/2"	12.7	
3/8"	9.50	
#4	4.75	
#8	2.00	
#16	0.850	
#30	0.425	
#50	0.250	
#100	0.150	
#200	0.075	

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	100.0
Sand (%):	
Fines (%):	
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
#4 Stone	15D128						

Note(s): Only particles passed through 1.0 inch Sieve and washed over 3/4 inch Sieve were used.

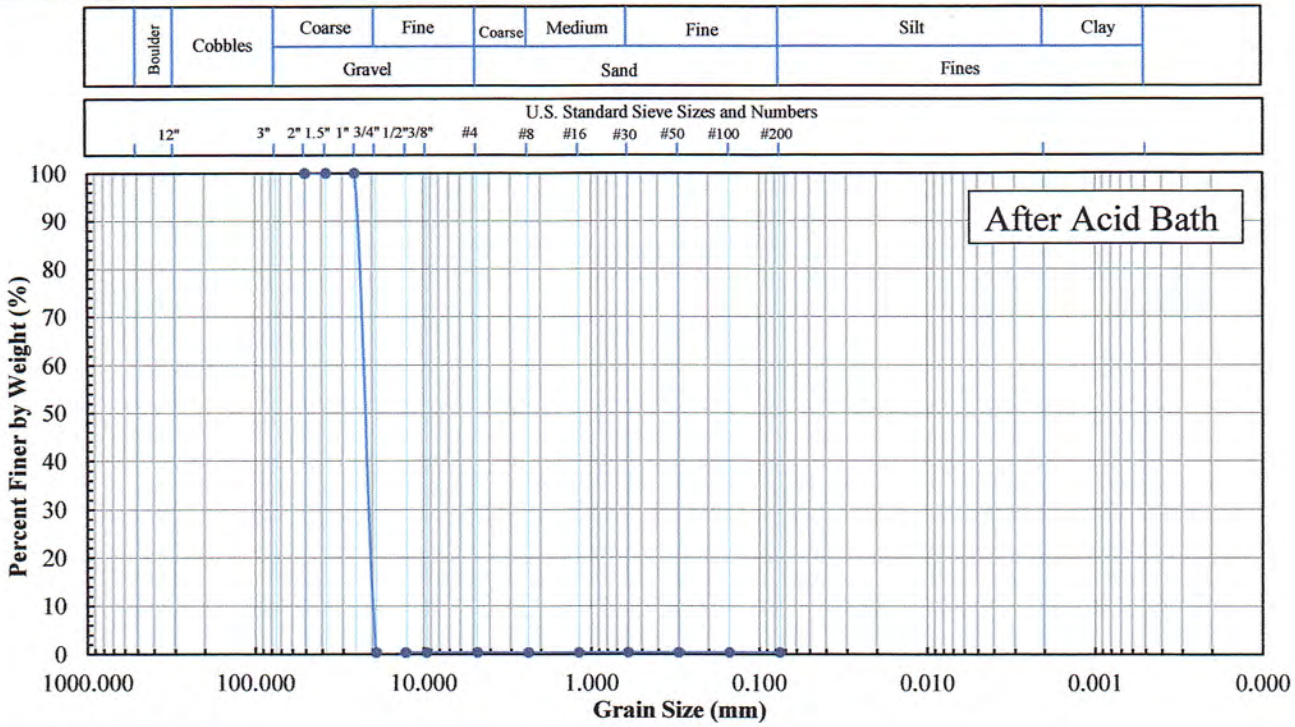
6-13-15
NSR

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	JED Cell 11
Project No:	686
Client Sample ID	#4 Stone
Lab Sample No:	15D128

ASTM D 3042

INSOLUBLE RESIDUE IN CARBONATE AGGREGATES

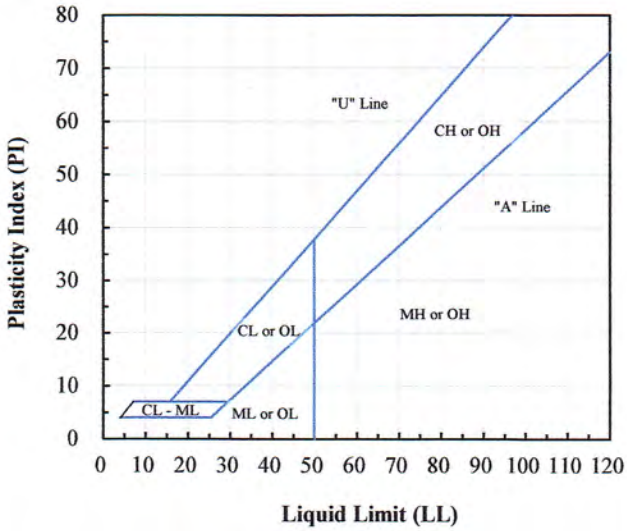


Sieve No.	Size (mm)	% Finer
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	0.4
1/2"	12.7	0.4
3/8"	9.50	0.4
#4	4.75	0.4
#8	2.00	0.4
#16	0.850	0.4
#30	0.425	0.4
#50	0.250	0.4
#100	0.150	0.4
#200	0.075	0.4

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	99.6
Sand (%):	
Fines (%):	0.4
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	**Total Insoluble Residue** (%)
#4 Stone	15D128		0.4				99.6

Note(s): Only particles passed through 1.0 inch Sieve and washed over 3/4 inch Sieve were used.

6-13-15

APPENDIX C
Soils Field Testing Results

Section 1
General Fill Density Summary and Field Tests

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/12/15 TO 03/14/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
1	03/12/15	Lift 1	93.8	19.5	SF-3	101.1	16.2	92.8	3.3	F	Density/Wet
2	03/12/15	Lift 1	95.4	19.6	SF-3	101.1	16.2	94.4	3.4	F	Density/Wet
3	03/12/15	Lift 1	95.3	19.8	SF-3	101.1	16.2	94.3	3.6	F	Density
4	03/12/15	Lift 1	94.6	20.1	SF-3	101.1	16.2	93.6	3.9	F	Density/Wet
5	03/14/15	Lift 1	97.1	18.1	SF-3	101.1	16.2	96.0	1.9	P	
6	03/14/15	Lift 1	97.9	17.6	SF-3	101.1	16.2	96.8	1.4	P	
7	03/14/15	Lift 1	97.7	16.5	SF-3	101.1	16.2	96.6	0.3	P	
8	03/14/15	Lift 1	98.3	17.2	SF-2	102.9	16.5	95.5	0.7	P	
9	03/14/15	Lift 1	97.8	17.3	SF-3	101.1	16.2	96.7	1.1	P	
10	03/14/15	Lift 1	98.4	17.5	SF-2	102.9	16.5	95.6	1.0	P	
11	03/14/15	Lift 1	97.3	16.2	SF-3	101.1	16.2	96.2	0.0	P	
12	03/14/15	Lift 1	98.0	17.0	SF-3	101.1	16.2	96.9	0.8	P	
13	03/14/15	Lift 1	98.4	17.2	SF-2	102.9	16.5	95.6	0.7	P	
14	03/14/15	Lift 1	98.1	16.9	SF-3	101.1	16.2	97.0	0.7	P	
15	03/14/15	Lift 1	97.2	17.3	SF-3	101.1	16.2	96.1	1.1	P	
16	03/14/15	Lift 1	96.8	18.2	SF-3	101.1	16.2	95.7	2.0	P	Retest 1
17	03/14/15	Lift 1	97.3	16.9	SF-3	101.1	16.2	96.2	0.7	P	Retest 2
18	03/14/15	Lift 1	102.5	17.3	SF-2	102.9	16.5	99.6	0.8	P	Retest 3
19	03/14/15	Lift 1	99.2	16.8	SF-2	102.9	16.5	96.4	0.3	P	Retest 4
20	03/14/15	Lift 1	100.7	17.2	SF-2	102.9	16.5	97.9	0.7	P	

Kevin Lesley
PREPARED BY

03/14/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/16/15 TO 03/16/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
21	03/16/15	Lift 1	98.6	18.0	SF-2	102.9	16.5	95.8	1.5	P	
22	03/16/15	Lift 1	97.8	17.4	SF-2	102.9	16.5	95.0	0.9	P	
23	03/16/15	Lift 1	97.9	18.0	SF-2	102.9	16.5	95.1	1.5	P	
24	03/16/15	Lift 1	98.2	17.9	SF-2	102.9	16.5	95.4	1.4	P	
25	03/16/15	Lift 1	98.3	18.5	SF-2	102.9	16.5	95.5	2.0	P	
26	03/16/15	Lift 1	97.9	18.2	SF-2	102.9	16.5	95.1	1.7	P	
27	03/16/15	Lift 1	98.1	18.0	SF-2	102.9	16.5	95.3	1.5	P	
28	03/16/15	Lift 1	98.0	17.9	SF-2	102.9	16.5	95.2	1.4	P	
29	03/16/15	Lift 1	97.9	18.5	SF-2	102.9	16.5	95.1	2.0	P	
30	03/16/15	Lift 1	98.6	18.4	SF-2	102.9	16.5	95.8	1.9	P	
31	03/16/15	Lift 1	99.0	18.5	SF-2	102.9	16.5	96.2	2.0	P	
32	03/16/15	Lift 1	98.6	18.4	SF-2	102.9	16.5	95.8	1.9	P	
33	03/16/15	Lift 1	98.5	18.0	SF-2	102.9	16.5	95.7	1.5	P	
34	03/16/15	Lift 1	98.0	17.9	SF-2	102.9	16.5	95.2	1.4	P	
35	03/16/15	Lift 1	98.1	17.8	SF-2	102.9	16.5	95.3	1.3	P	
36	03/16/15	Lift 1	97.9	18.2	SF-2	102.9	16.5	95.1	1.7	P	
37	03/16/15	Lift 1	98.0	18.2	SF-2	102.9	16.5	95.2	1.7	P	
38	03/16/15	Lift 1	98.6	18.3	SF-2	102.9	16.5	95.8	1.8	P	
39	03/16/15	Lift 1	98.3	18.0	SF-2	102.9	16.5	95.5	1.5	P	
40	03/16/15	Lift 1	98.0	18.0	SF-2	102.9	16.5	95.2	1.5	P	

Kevin Lesley
PREPARED BY

03/16/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/16/15 TO 03/17/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
41	03/16/15	Lift 1	98.5	17.9	SF-2	102.9	16.5	95.7	1.4	P	
42	03/16/15	Lift 1	98.5	17.9	SF-2	102.9	16.5	95.7	1.4	P	
43	03/16/15	Lift 1	98.3	18.0	SF-2	102.9	16.5	95.5	1.5	P	
44	03/16/15	Lift 1	98.2	18.2	SF-2	102.9	16.5	95.4	1.7	P	
45	03/16/15	Lift 1	97.9	18.3	SF-2	102.9	16.5	95.1	1.8	P	
46	03/16/15	Lift 1	97.9	18.1	SF-2	102.9	16.5	95.1	1.6	P	
47	03/16/15	Lift 1	97.8	18.3	SF-2	102.9	16.5	95.0	1.8	P	
48	03/16/15	Lift 1	97.8	18.0	SF-2	102.9	16.5	95.0	1.5	P	
49	03/17/15	Lift 2	97.9	18.4	SF-2	102.9	16.5	95.1	1.9	P	
50	03/17/15	Lift 2	97.8	18.3	SF-2	102.9	16.5	95.0	1.8	P	
51	03/17/15	Lift 2	98.0	18.1	SF-2	102.9	16.5	95.2	1.6	P	
52	03/17/15	Lift 2	98.0	17.9	SF-2	102.9	16.5	95.2	1.4	P	
53	03/17/15	Lift 2	98.3	18.2	SF-2	102.9	16.5	95.5	1.7	P	
54	03/17/15	Lift 2	98.0	18.3	SF-2	102.9	16.5	95.2	1.8	P	
55	03/17/15	Lift 2	98.3	18.3	SF-2	102.9	16.5	95.5	1.8	P	
56	03/17/15	Lift 2	98.4	18.1	SF-2	102.9	16.5	95.6	1.6	P	
57	03/17/15	Lift 2	98.4	18.2	SF-2	102.9	16.5	95.6	1.7	P	
58	03/17/15	Lift 2	98.6	18.3	SF-2	102.9	16.5	95.8	1.8	P	
59	03/17/15	Lift 2	98.6	18.1	SF-2	102.9	16.5	95.8	1.6	P	
60	03/17/15	Lift 2	97.9	18.0	SF-2	102.9	16.5	95.1	1.5	P	

Kevin Lesley
PREPARED BY

03/17/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/17/15 TO 03/18/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
61	03/17/15	Lift 2	98.3	17.6	SF-2	102.9	16.5	95.5	1.1	P	
62	03/17/15	Lift 2	98.5	17.5	SF-2	102.9	16.5	95.7	1.0	P	
63	03/17/15	Lift 2	98.6	17.8	SF-2	102.9	16.5	95.8	1.3	P	
64	03/17/15	Lift 2	98.3	17.9	SF-2	102.9	16.5	95.5	1.4	P	
65	03/17/15	Lift 2	98.7	17.2	SF-2	102.9	16.5	95.9	0.7	P	
66	03/17/15	Lift 2	98.4	17.2	SF-2	102.9	16.5	95.6	0.7	P	
67	03/17/15	Lift 2	98.6	17.6	SF-2	102.9	16.5	95.8	1.1	P	
68	03/17/15	Lift 2	98.5	17.9	SF-2	102.9	16.5	95.7	1.4	P	
69	03/17/15	Lift 2	98.8	17.2	SF-2	102.9	16.5	96.0	0.7	P	
70	03/17/15	Lift 2	98.9	17.0	SF-2	102.9	16.5	96.1	0.5	P	
71	03/17/15	Lift 2	98.9	17.6	SF-2	102.9	16.5	96.1	1.1	P	
72	03/17/15	Lift 2	99.0	17.6	SF-2	102.9	16.5	96.2	1.1	P	
73	03/18/15	Lift 2	98.9	17.6	SF-2	102.9	16.5	96.1	1.1	P	
74	03/18/15	Lift 2	99.1	17.7	SF-2	102.9	16.5	96.3	1.2	P	
75	03/18/15	Lift 2	98.6	17.6	SF-2	102.9	16.5	95.8	1.1	P	
76	03/18/15	Lift 2	98.3	17.8	SF-2	102.9	16.5	95.5	1.3	P	
77	03/18/15	Lift 2	99.5	17.2	SF-2	102.9	16.5	96.7	0.7	P	
78	03/18/15	Lift 2	99.1	17.0	SF-2	102.9	16.5	96.3	0.5	P	
79	03/18/15	Lift 2	99.0	17.9	SF-2	102.9	16.5	96.2	1.4	P	
80	03/18/15	Lift 2	99.2	17.6	SF-2	102.9	16.5	96.4	1.1	P	

Kevin Lesley
PREPARED BY

03/18/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/18/15 TO 03/18/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
81	03/18/15	Lift 2	98.6	16.9	SF-2	102.9	16.5	95.8	0.4	P	
82	03/18/15	Lift 2	98.5	16.3	SF-2	102.9	16.5	95.7	-0.2	P	
83	03/18/15	Lift 2	98.4	17.5	SF-2	102.9	16.5	95.6	1.0	P	
84	03/18/15	Lift 2	98.6	17.6	SF-2	102.9	16.5	95.8	1.1	P	
85	03/18/15	Lift 2	98.2	17.9	SF-2	102.9	16.5	95.4	1.4	P	
86	03/18/15	Lift 2	98.3	17.3	SF-2	102.9	16.5	95.5	0.8	P	
87	03/18/15	Lift 2	98.0	16.9	SF-2	102.9	16.5	95.2	0.4	P	
88	03/18/15	Lift 2	98.9	16.9	SF-2	102.9	16.5	96.1	0.4	P	
89	03/18/15	Lift 2	98.6	17.5	SF-2	102.9	16.5	95.8	1.0	P	
90	03/18/15	Lift 2	99.0	17.7	SF-2	102.9	16.5	96.2	1.2	P	
91	03/18/15	Lift 2	98.6	17.3	SF-2	102.9	16.5	95.8	0.8	P	
92	03/18/15	Lift 2	99.0	17.8	SF-2	102.9	16.5	96.2	1.3	P	
93	03/18/15	Lift 2	98.9	17.9	SF-2	102.9	16.5	96.1	1.4	P	
94	03/18/15	Lift 2	98.6	17.2	SF-2	102.9	16.5	95.8	0.7	P	
95	03/18/15	Lift 2	98.3	16.9	SF-2	102.9	16.5	95.5	0.4	P	
96	03/18/15	Lift 2	98.0	16.7	SF-2	102.9	16.5	95.2	0.2	P	
97	03/18/15	Lift 2	99.0	17.2	SF-2	102.9	16.5	96.2	0.7	P	
98	03/18/15	Lift 2	98.3	17.6	SF-2	102.9	16.5	95.5	1.1	P	
99	03/18/15	Lift 2	97.9	17.5	SF-2	102.9	16.5	95.1	1.0	P	
100	03/18/15	Lift 2	99.1	17.2	SF-2	102.9	16.5	96.3	0.7	P	

Kevin Lesley
PREPARED BY

03/18/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/20/15 TO 03/20/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
101	03/20/15	Lift 3	97.8	17.2	SF-3	101.1	16.2	96.7	1.0	P	
102	03/20/15	Lift 3	97.9	17.5	SF-3	101.1	16.2	96.8	1.3	P	
103	03/20/15	Lift 3	98.0	17.2	SF-3	101.1	16.2	96.9	1.0	P	
104	03/20/15	Lift 3	97.5	17.0	SF-3	101.1	16.2	96.4	0.8	P	
105	03/20/15	Lift 3	97.9	17.6	SF-3	101.1	16.2	96.8	1.4	P	
106	03/20/15	Lift 3	97.6	17.9	SF-3	101.1	16.2	96.5	1.7	P	
107	03/20/15	Lift 3	97.8	17.6	SF-2	102.9	16.5	95.0	1.1	P	
108	03/20/15	Lift 3	97.5	18.2	SF-2	102.9	16.5	94.8	1.7	F	Density
109	03/20/15	Lift 3	97.6	18.5	SF-2	102.9	16.5	94.8	2.0	F	Density
110	03/20/15	Lift 3	97.9	17.7	SF-2	102.9	16.5	95.1	1.2	P	
111	03/20/15	Lift 3	98.0	17.7	SF-2	102.9	16.5	95.2	1.2	P	
112	03/20/15	Lift 3	98.0	17.5	SF-2	102.9	16.5	95.2	1.0	P	
113	03/20/15	Lift 3	98.2	17.6	SF-2	102.9	16.5	95.4	1.1	P	
114	03/20/15	Lift 3	98.3	17.3	SF-2	102.9	16.5	95.5	0.8	P	Retest 108
115	03/20/15	Lift 3	98.2	17.2	SF-2	102.9	16.5	95.4	0.7	P	Retest 109
116	03/20/15	Lift 3	97.6	17.6	SF-3	101.1	16.2	96.5	1.4	P	
117	03/20/15	Lift 3	98.0	17.5	SF-3	101.1	16.2	96.9	1.3	P	
118	03/20/15	Lift 3	96.9	17.9	SF-3	101.1	16.2	95.8	1.7	P	
119	03/20/15	Lift 3	97.6	17.9	SF-3	101.1	16.2	96.5	1.7	P	
120	03/20/15	Lift 3	97.8	17.9	SF-2	102.9	16.5	95.0	1.4	P	

Kevin Lesley
PREPARED BY

03/20/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/20/15 TO 03/20/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
121	03/20/15	Lift 3	98.2	16.9	SF-2	102.9	16.5	95.4	0.4	P	
122	03/20/15	Lift 3	98.3	16.5	SF-2	102.9	16.5	95.5	0.0	P	
123	03/20/15	Lift 3	98.1	16.9	SF-2	102.9	16.5	95.3	0.4	P	
124	03/20/15	Lift 3	98.3	17.2	SF-2	102.9	16.5	95.5	0.7	P	
125	03/20/15	Lift 3	97.9	17.6	SF-2	102.9	16.5	95.1	1.1	P	
126	03/20/15	Lift 3	98.5	17.6	SF-2	102.9	16.5	95.7	1.1	P	
127	03/20/15	Lift 3	98.6	17.2	SF-2	102.9	16.5	95.8	0.7	P	
128	03/20/15	Lift 3	98.9	16.9	SF-2	102.9	16.5	96.1	0.4	P	
129	03/20/15	Lift 3	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	
130	03/20/15	Lift 3	98.4	16.2	SF-2	102.9	16.5	95.6	-0.3	P	
131	03/20/15	Lift 3	98.9	15.9	SF-2	102.9	16.5	96.1	-0.6	P	
132	03/20/15	Lift 3	98.0	16.0	SF-2	102.9	16.5	95.2	-0.5	P	
133	03/20/15	Lift 3	98.9	16.3	SF-2	102.9	16.5	96.1	-0.2	P	
134	03/20/15	Lift 3	99.0	17.1	SF-2	102.9	16.5	96.2	0.6	P	
135	03/20/15	Lift 3	98.9	17.2	SF-2	102.9	16.5	96.1	0.7	P	
136	03/20/15	Lift 3	99.0	17.0	SF-2	102.9	16.5	96.2	0.5	P	
137	03/20/15	Lift 3	99.1	16.3	SF-2	102.9	16.5	96.3	-0.2	P	
138	03/20/15	Lift 3	99.6	16.4	SF-2	102.9	16.5	96.8	-0.1	P	
139	03/20/15	Lift 3	99.1	16.4	SF-2	102.9	16.5	96.3	-0.1	P	
140	03/20/15	Lift 3	98.6	17.0	SF-2	102.9	16.5	95.8	0.5	P	

Kevin Lesley
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03/20/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/20/15 TO 03/23/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
141	03/20/15	Lift 4	97.9	16.0	SF-2	102.9	16.5	95.1	-0.5	P	
142	03/20/15	Lift 4	97.8	16.3	SF-2	102.9	16.5	95.0	-0.2	P	
143	03/20/15	Lift 4	97.9	16.6	SF-2	102.9	16.5	95.1	0.1	P	
144	03/20/15	Lift 4	98.2	16.9	SF-2	102.9	16.5	95.4	0.4	P	
145	03/20/15	Lift 4	98.3	16.6	SF-2	102.9	16.5	95.5	0.1	P	
146	03/23/15	Lift 4	98.6	16.6	SF-2	102.9	16.5	95.8	0.1	P	
147	03/23/15	Lift 4	98.4	16.3	SF-2	102.9	16.5	95.6	-0.2	P	
148	03/23/15	Lift 4	98.2	16.5	SF-2	102.9	16.5	95.4	0.0	P	
149	03/23/15	Lift 4	98.4	16.4	SF-2	102.9	16.5	95.6	-0.1	P	
150	03/23/15	Lift 4	98.3	16.2	SF-2	102.9	16.5	95.5	-0.3	P	
151	03/23/15	Lift 4	97.9	16.2	SF-2	102.9	16.5	95.1	-0.3	P	
152	03/23/15	Lift 4	98.2	16.3	SF-2	102.9	16.5	95.4	-0.2	P	
153	03/23/15	Lift 4	98.3	16.0	SF-2	102.9	16.5	95.5	-0.5	P	
154	03/23/15	Lift 4	98.4	16.9	SF-2	102.9	16.5	95.6	0.4	P	
155	03/23/15	Lift 4	98.7	17.0	SF-2	102.9	16.5	95.9	0.5	P	
156	03/23/15	Lift 4	98.4	17.1	SF-2	102.9	16.5	95.6	0.6	P	
157	03/23/15	Lift 4	98.1	16.9	SF-2	102.9	16.5	95.3	0.4	P	
158	03/23/15	Lift 4	98.0	16.5	SF-2	102.9	16.5	95.2	0.0	P	
159	03/23/15	Lift 4	98.9	16.4	SF-2	102.9	16.5	96.1	-0.1	P	
160	03/23/15	Lift 4	98.5	16.7	SF-2	102.9	16.5	95.7	0.2	P	

Kevin Lesley
PREPARED BY

03/23/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/24/15 TO 03/27/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
161	03/24/15	Lift 4	98.0	15.9	SF-2	102.9	16.5	95.2	-0.6	P	
162	03/24/15	Lift 4	98.1	15.9	SF-2	102.9	16.5	95.3	-0.6	P	
163	03/24/15	Lift 4	98.2	15.9	SF-2	102.9	16.5	95.4	-0.6	P	
164	03/24/15	Lift 4	98.3	16.3	SF-2	102.9	16.5	95.5	-0.2	P	
165	03/24/15	Lift 4	98.0	16.5	SF-2	102.9	16.5	95.2	0.0	P	
166	03/24/15	Lift 4	98.1	16.9	SF-2	102.9	16.5	95.3	0.4	P	
167	03/24/15	Lift 4	97.9	16.9	SF-2	102.9	16.5	95.1	0.4	P	
168	03/24/15	Lift 4	97.8	16.4	SF-2	102.9	16.5	95.0	-0.1	P	
169	03/24/15	Lift 4	98.5	16.5	SF-2	102.9	16.5	95.7	0.0	P	
170	03/24/15	Lift 3	97.9	16.4	SF-2	102.9	16.5	95.1	-0.1	P	
171	03/24/15	Lift 3	98.2	16.0	SF-2	102.9	16.5	95.4	-0.5	P	
172	03/24/15	Lift 3	98.5	16.0	SF-2	102.9	16.5	95.7	-0.5	P	
173	03/24/15	Lift 3	98.6	16.6	SF-2	102.9	16.5	95.8	0.1	P	
174	03/24/15	Lift 3	98.8	16.6	SF-2	102.9	16.5	96.0	0.1	P	
175	03/24/15	Lift 4	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	
176	03/27/15	Lift 4	98.4	17.1	SF-2	102.9	16.5	95.6	0.6	P	
177	03/27/15	Lift 4	98.9	17.2	SF-2	102.9	16.5	96.1	0.7	P	
178	03/27/15	Lift 4	98.6	17.2	SF-2	102.9	16.5	95.8	0.7	P	
179	03/27/15	Lift 4	98.6	17.0	SF-2	102.9	16.5	95.8	0.5	P	
180	03/27/15	Lift 4	98.7	17.6	SF-2	102.9	16.5	95.9	1.1	P	

Kevin Lesley
PREPARED BY

03/27/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/27/15 TO 03/30/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
181	03/27/15	Lift 4	98.5	16.0	SF-2	102.9	16.5	95.7	-0.5	P	
182	03/27/15	Lift 4	98.6	16.3	SF-2	102.9	16.5	95.8	-0.2	P	
183	03/27/15	Lift 4	98.9	15.9	SF-2	102.9	16.5	96.1	-0.6	P	
184	03/27/15	Lift 4	98.8	15.9	SF-2	102.9	16.5	96.0	-0.6	P	
185	03/27/15	Lift 4	98.7	16.5	SF-2	102.9	16.5	95.9	0.0	P	
186	03/27/15	Lift 4	98.6	16.4	SF-2	102.9	16.5	95.8	-0.1	P	
187	03/27/15	Lift 4	98.3	16.4	SF-2	102.9	16.5	95.5	-0.1	P	
188	03/27/15	Lift 4	98.4	16.8	SF-2	102.9	16.5	95.6	0.3	P	
189	03/27/15	Lift 4	98.0	16.9	SF-2	102.9	16.5	95.2	0.4	P	
190	03/30/15	Lift 5	98.2	16.6	SF-3	101.1	16.2	97.1	0.4	P	
191	03/30/15	Lift 5	98.3	16.2	SF-3	101.1	16.2	97.2	0.0	P	
192	03/30/15	Lift 5	98.4	16.2	SF-3	101.1	16.2	97.3	0.0	P	
193	03/30/15	Lift 5	98.1	16.3	SF-3	101.1	16.2	97.0	0.1	P	
194	03/30/15	Lift 5	98.4	16.5	SF-3	101.1	16.2	97.3	0.3	P	
195	03/30/15	Lift 5	98.5	16.9	SF-3	101.1	16.2	97.4	0.7	P	
196	03/30/15	Lift 5	98.7	16.4	SF-3	101.1	16.2	97.6	0.2	P	
197	03/30/15	Lift 5	98.0	16.7	SF-3	101.1	16.2	96.9	0.5	P	
198	03/30/15	Lift 5	97.9	16.6	SF-3	101.1	16.2	96.8	0.4	P	
199	03/30/15	Lift 5	97.6	16.3	SF-3	101.1	16.2	96.5	0.1	P	
200	03/30/15	Lift 5	97.8	16.5	SF-3	101.1	16.2	96.7	0.3	P	

Kevin Lesley
PREPARED BY

03/30/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/30/15 TO 03/30/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
201	03/30/15	Lift 5	97.8	16.5	SF-3	101.1	16.2	96.7	0.3	P	
202	03/30/15	Lift 5	97.6	16.4	SF-3	101.1	16.2	96.5	0.2	P	
203	03/30/15	Lift 5	97.5	16.8	SF-3	101.1	16.2	96.4	0.6	P	
204	03/30/15	Lift 5	97.5	16.9	SF-3	101.1	16.2	96.4	0.7	P	
205	03/30/15	Lift 5	97.8	16.7	SF-3	101.1	16.2	96.7	0.5	P	
206	03/30/15	Lift 5	98.0	16.5	SF-3	101.1	16.2	96.9	0.3	P	
207	03/30/15	Lift 5	97.6	16.3	SF-3	101.1	16.2	96.5	0.1	P	
208	03/30/15	Lift 5	97.2	16.2	SF-3	101.1	16.2	96.1	0.0	P	
209	03/30/15	Lift 5	97.3	16.4	SF-3	101.1	16.2	96.2	0.2	P	
210	03/30/15	Lift 5	97.6	16.0	SF-3	101.1	16.2	96.5	-0.2	P	
211	03/30/15	Lift 5	97.5	15.9	SF-3	101.1	16.2	96.4	-0.3	P	
212	03/30/15	Lift 5	97.4	15.6	SF-3	101.1	16.2	96.3	-0.6	P	
213	03/30/15	Lift 5	97.0	15.4	SF-3	101.1	16.2	95.9	-0.8	P	
214	03/30/15	Lift 5	97.1	15.3	SF-3	101.1	16.2	96.0	-0.9	P	
215	03/30/15	Lift 5	97.2	15.6	SF-3	101.1	16.2	96.1	-0.6	P	
216	03/30/15	Lift 5	97.6	15.7	SF-3	101.1	16.2	96.5	-0.5	P	
217	03/30/15	Lift 5	97.8	15.8	SF-3	101.1	16.2	96.7	-0.4	P	
218	03/30/15	Lift 5	97.6	15.3	SF-3	101.1	16.2	96.5	-0.9	P	
219	03/30/15	Lift 5	97.5	16.0	SF-3	101.1	16.2	96.4	-0.2	P	
220	03/30/15	Lift 5	97.4	16.2	SF-3	101.1	16.2	96.3	0.0	P	

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03/30/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/30/15 TO 03/30/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
221	03/30/15	Lift 5	95.6	16.5	SF-3	101.1	16.2	94.6	0.3	F	Density/Wet
222	03/30/15	Lift 5	97.5	16.3	SF-3	101.1	16.2	96.4	0.1	P	
223	03/30/15	Lift 5	97.6	16.5	SF-3	101.1	16.2	96.5	0.3	P	
224	03/30/15	Lift 5	97.8	16.4	SF-3	101.1	16.2	96.7	0.2	P	
225	03/30/15	Lift 5	98.0	15.6	SF-3	101.1	16.2	96.9	-0.6	P	
226	03/30/15	Lift 5	98.1	15.9	SF-3	101.1	16.2	97.0	-0.3	P	
227	03/30/15	Lift 5	98.0	15.6	SF-3	101.1	16.2	96.9	-0.6	P	
228	03/30/15	Lift 5	98.2	16.2	SF-3	101.1	16.2	97.1	0.0	P	
229	03/30/15	Lift 5	98.0	16.4	SF-3	101.1	16.2	96.9	0.2	P	Retest 221
230	03/30/15	Lift 6	97.6	16.5	SF-3	101.1	16.2	96.5	0.3	P	
231	03/30/15	Lift 6	97.6	15.8	SF-3	101.1	16.2	96.5	-0.4	P	
232	03/30/15	Lift 6	97.8	15.9	SF-3	101.1	16.2	96.7	-0.3	P	
233	03/30/15	Lift 6	97.9	15.8	SF-3	101.1	16.2	96.8	-0.4	P	
234	03/30/15	Lift 6	98.0	15.6	SF-3	101.1	16.2	96.9	-0.6	P	
235	03/30/15	Lift 6	98.2	15.8	SF-3	101.1	16.2	97.1	-0.4	P	
236	03/30/15	Lift 6	98.2	15.9	SF-3	101.1	16.2	97.1	-0.3	P	
237	03/30/15	Lift 6	98.3	16.3	SF-3	101.1	16.2	97.2	0.1	P	
238	03/30/15	Lift 6	98.1	16.2	SF-3	101.1	16.2	97.0	0.0	P	
239	03/30/15	Lift 6	98.0	16.2	SF-3	101.1	16.2	96.9	0.0	P	
240	03/30/15	Lift 6	97.8	16.5	SF-3	101.1	16.2	96.7	0.3	P	

Kevin Lesley
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03/30/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/31/15 TO 04/01/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
241	03/31/15	Lift 6	96.6	17.0	SF-3	101.1	16.2	95.5	0.8	P	
242	03/31/15	Lift 6	96.9	17.2	SF-3	101.1	16.2	95.8	1.0	P	
243	03/31/15	Lift 6	96.8	17.0	SF-3	101.1	16.2	95.7	0.8	P	
244	03/31/15	Lift 6	97.0	17.1	SF-3	101.1	16.2	95.9	0.9	P	
245	03/31/15	Lift 6	96.9	16.6	SF-3	101.1	16.2	95.8	0.4	P	
246	03/31/15	Lift 6	97.2	16.5	SF-3	101.1	16.2	96.1	0.3	P	
247	03/31/15	Lift 6	97.2	16.6	SF-3	101.1	16.2	96.1	0.4	P	
248	03/31/15	Lift 6	97.3	16.3	SF-3	101.1	16.2	96.2	0.1	P	
249	03/31/15	Lift 6	97.6	16.2	SF-3	101.1	16.2	96.5	0.0	P	
250	03/31/15	Lift 6	97.2	16.9	SF-3	101.1	16.2	96.1	0.7	P	
251	03/31/15	Lift 6	97.2	16.9	SF-3	101.1	16.2	96.1	0.7	P	
252	03/31/15	Lift 6	97.6	16.5	SF-3	101.1	16.2	96.5	0.3	P	
253	03/31/15	Lift 6	97.4	16.2	SF-3	101.1	16.2	96.3	0.0	P	
254	03/31/15	Lift 6	97.1	16.1	SF-3	101.1	16.2	96.0	-0.1	P	
255	03/31/15	Lift 6	97.0	16.2	SF-3	101.1	16.2	95.9	0.0	P	
256	03/31/15	Lift 6	97.2	16.4	SF-3	101.1	16.2	96.1	0.2	P	
257	04/01/15	Lift 6	97.3	16.4	SF-3	101.1	16.2	96.2	0.2	P	
258	04/01/15	Lift 6	96.9	16.7	SF-3	101.1	16.2	95.8	0.5	P	
259	04/01/15	Lift 6	96.8	16.4	SF-3	101.1	16.2	95.7	0.2	P	
260	04/01/15	Lift 6	96.9	16.5	SF-3	101.1	16.2	95.8	0.3	P	

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04/01/15
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Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/01/15 TO 04/01/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
261	04/01/15	Lift 6	95.9	15.0	SF-3	101.1	16.2	94.9	-1.2	F	Density/Dry
262	04/01/15	Lift 6	95.6	14.8	SF-3	101.1	16.2	94.6	-1.4	F	Density/Dry
263	04/01/15	Lift 6	95.8	14.6	SF-3	101.1	16.2	94.8	-1.6	F	Density/Dry
264	04/01/15	Lift 6	95.7	14.3	SF-3	101.1	16.2	94.7	-1.9	F	Density/Dry
265	04/01/15	Lift 6	96.2	15.2	SF-3	101.1	16.2	95.2	-1.0	P	
266	04/01/15	Lift 6	96.1	15.2	SF-3	101.1	16.2	95.1	-1.0	P	
267	04/01/15	Lift 6	96.5	15.6	SF-3	101.1	16.2	95.5	-0.6	P	
268	04/01/15	Lift 6	96.3	15.4	SF-3	101.1	16.2	95.3	-0.8	P	
269	04/01/15	Lift 6	96.2	15.4	SF-3	101.1	16.2	95.2	-0.8	P	
270	04/01/15	Lift 6	96.5	15.2	SF-3	101.1	16.2	95.5	-1.0	P	
271	04/01/15	Lift 6	96.8	15.6	SF-3	101.1	16.2	95.7	-0.6	P	
272	04/01/15	Lift 6	96.4	15.0	SF-3	101.1	16.2	95.4	-1.2	P	
273	04/01/15	Lift 6	96.4	15.2	SF-3	101.1	16.2	95.4	-1.0	P	
274	04/01/15	Lift 6	96.7	15.0	SF-3	101.1	16.2	95.6	-1.2	P	
275	04/01/15	Lift 6	96.8	15.3	SF-3	101.1	16.2	95.7	-0.9	P	
276	04/01/15	Lift 6	97.6	15.1	SF-3	101.1	16.2	96.5	-1.1	P	
277	04/01/15	Lift 6	96.9	15.6	SF-3	101.1	16.2	95.8	-0.6	P	Retest 261
278	04/01/15	Lift 6	97.0	15.8	SF-3	101.1	16.2	95.9	-0.4	P	Retest 262
279	04/01/15	Lift 6	97.1	15.8	SF-3	101.1	16.2	96.0	-0.4	P	Retest 263
280	04/01/15	Lift 6	96.9	15.9	SF-3	101.1	16.2	95.8	-0.3	P	Retest 264

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SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/01/15 TO 04/03/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
281	04/01/15	Lift 7	96.5	15.6	SF-3	101.1	16.2	95.5	-0.6	P	
282	04/01/15	Lift 7	96.3	15.9	SF-3	101.1	16.2	95.3	-0.3	P	
283	04/01/15	Lift 7	96.2	15.6	SF-3	101.1	16.2	95.2	-0.6	P	
284	04/01/15	Lift 7	96.1	15.9	SF-3	101.1	16.2	95.1	-0.3	P	
285	04/01/15	Lift 7	96.3	15.8	SF-3	101.1	16.2	95.3	-0.4	P	
286	04/01/15	Lift 7	96.7	16.0	SF-3	101.1	16.2	95.6	-0.2	P	
287	04/01/15	Lift 7	96.6	15.6	SF-3	101.1	16.2	95.5	-0.6	P	
288	04/02/15	Lift 7	96.9	15.9	SF-3	101.1	16.2	95.8	-0.3	P	
289	04/02/15	Lift 7	96.8	15.7	SF-3	101.1	16.2	95.7	-0.5	P	
290	04/02/15	Lift 7	96.9	16.2	SF-3	101.1	16.2	95.8	0.0	P	
291	04/02/15	Lift 7	97.0	16.3	SF-3	101.1	16.2	95.9	0.1	P	
292	04/02/15	Lift 7	97.1	16.3	SF-3	101.1	16.2	96.0	0.1	P	
293	04/02/15	Lift 7	96.3	16.5	SF-3	101.1	16.2	95.3	0.3	P	
294	04/02/15	Lift 7	96.5	16.0	SF-3	101.1	16.2	95.5	-0.2	P	
295	04/03/15	Lift 7	96.4	16.1	SF-3	101.1	16.2	95.4	-0.1	P	
296	04/03/15	Lift 7	96.9	16.1	SF-3	101.1	16.2	95.8	-0.1	P	
297	04/03/15	Lift 5	96.9	16.2	SF-3	101.1	16.2	95.8	0.0	P	
298	04/03/15	Lift 5	96.8	16.3	SF-3	101.1	16.2	95.7	0.1	P	
299	04/03/15	Lift 5	97.2	15.8	SF-3	101.1	16.2	96.1	-0.4	P	
300	04/03/15	Lift 5	97.1	15.9	SF-3	101.1	16.2	96.0	-0.3	P	

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04/03/15
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Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/03/15 TO 04/06/15 PAGE 16

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
301	04/03/15	Lift 7	97.8	15.6	SF-2	102.9	16.5	95.0	-0.9	P	
302	04/03/15	Lift 7	98.2	16.5	SF-2	102.9	16.5	95.4	0.0	P	
303	04/03/15	Lift 7	98.3	16.9	SF-2	102.9	16.5	95.5	0.4	P	
304	04/03/15	Lift 7	98.6	16.3	SF-2	102.9	16.5	95.8	-0.2	P	
305	04/03/15	Lift 7	98.4	16.5	SF-2	102.9	16.5	95.6	0.0	P	
306	04/03/15	Lift 7	98.5	16.5	SF-2	102.9	16.5	95.7	0.0	P	
307	04/03/15	Lift 7	98.2	16.8	SF-2	102.9	16.5	95.4	0.3	P	
308	04/03/15	Lift 7	98.3	16.7	SF-2	102.9	16.5	95.5	0.2	P	
309	04/03/15	Lift 7	98.2	16.4	SF-2	102.9	16.5	95.4	-0.1	P	
310	04/03/15	Lift 7	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	
311	04/03/15	Lift 7	98.9	16.9	SF-2	102.9	16.5	96.1	0.4	P	
312	04/03/15	Lift 7	98.0	16.3	SF-2	102.9	16.5	95.2	-0.2	P	
313	04/03/15	Lift 7	98.6	16.6	SF-2	102.9	16.5	95.8	0.1	P	
314	04/03/15	Lift 7	98.7	16.6	SF-2	102.9	16.5	95.9	0.1	P	
315	04/03/15	Lift 7	98.2	16.4	SF-2	102.9	16.5	95.4	-0.1	P	
316	04/06/15	Lift 7	98.0	16.5	SF-3	101.1	16.2	96.9	0.3	P	
317	04/06/15	Lift 7	97.9	16.2	SF-3	101.1	16.2	96.8	0.0	P	
318	04/06/15	Lift 6	96.4	16.0	SF-3	101.1	16.2	95.3	-0.2	P	
319	04/06/15	Lift 6	96.8	16.1	SF-3	101.1	16.2	95.7	-0.1	P	
320	04/06/15	Lift 6	96.3	15.9	SF-3	101.1	16.2	95.3	-0.3	P	

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04/06/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/06/15 TO 04/08/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
321	04/06/15	Lift 7	98.1	15.9	SF-2	102.9	16.5	95.3	-0.6	P	
322	04/06/15	Lift 7	98.2	15.6	SF-2	102.9	16.5	95.4	-0.9	P	
323	04/06/15	Lift 7	98.3	15.3	SF-2	102.9	16.5	95.5	-1.2	P	
324	04/07/15	Lift 8	98.0	15.2	SF-2	102.9	16.5	95.2	-1.3	P	
325	04/07/15	Lift 8	98.4	15.2	SF-2	102.9	16.5	95.6	-1.3	P	
326	04/07/15	Lift 8	98.5	15.0	SF-2	102.9	16.5	95.7	-1.5	P	
327	04/07/15	Lift 8	98.6	15.2	SF-2	102.9	16.5	95.8	-1.3	P	
328	04/07/15	Lift 8	98.9	15.0	SF-2	102.9	16.5	96.1	-1.5	P	
329	04/07/15	Lift 8	99.0	15.4	SF-2	102.9	16.5	96.2	-1.1	P	
330	04/07/15	Lift 8	98.9	15.6	SF-2	102.9	16.5	96.1	-0.9	P	
331	04/08/15	Lift 8	99.0	15.4	SF-2	102.9	16.5	96.2	-1.1	P	
332	04/08/15	Lift 8	98.5	15.8	SF-2	102.9	16.5	95.7	-0.7	P	
333	04/08/15	Lift 8	98.6	15.9	SF-2	102.9	16.5	95.8	-0.6	P	
334	04/08/15	Lift 8	98.6	15.6	SF-2	102.9	16.5	95.8	-0.9	P	
335	04/08/15	Lift 8	98.6	15.8	SF-2	102.9	16.5	95.8	-0.7	P	
336	04/08/15	Lift 8	98.9	15.7	SF-2	102.9	16.5	96.1	-0.8	P	
337	04/08/15	Lift 8	99.1	15.7	SF-2	102.9	16.5	96.3	-0.8	P	
338	04/08/15	Lift 8	99.2	15.7	SF-2	102.9	16.5	96.4	-0.8	P	
339	04/08/15	Lift 8	99.0	15.2	SF-2	102.9	16.5	96.2	-1.3	P	
340	04/08/15	Lift 8	99.1	15.4	SF-2	102.9	16.5	96.3	-1.1	P	

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04/08/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/09/15 TO 04/10/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
341	04/09/15	Lift 8	97.5	15.2	SF-2	102.9	16.5	94.8	-1.3	F	Density
342	04/09/15	Lift 8	97.9	15.8	SF-2	102.9	16.5	95.1	-0.7	P	
343	04/09/15	Lift 8	97.9	15.6	SF-2	102.9	16.5	95.1	-0.9	P	
344	04/09/15	Lift 8	98.1	15.6	SF-2	102.9	16.5	95.3	-0.9	P	
345	04/09/15	Lift 8	98.1	15.6	SF-2	102.9	16.5	95.3	-0.9	P	
346	04/09/15	Lift 8	98.3	15.2	SF-2	102.9	16.5	95.5	-1.3	P	
347	04/09/15	Lift 8	98.1	15.3	SF-2	102.9	16.5	95.3	-1.2	P	
348	04/09/15	Lift 8	98.6	15.8	SF-2	102.9	16.5	95.8	-0.7	P	
349	04/09/15	Lift 8	98.5	15.9	SF-2	102.9	16.5	95.7	-0.6	P	
350	04/09/15	Lift 8	98.4	16.0	SF-2	102.9	16.5	95.6	-0.5	P	
351	04/09/15	Lift 8	98.5	16.0	SF-2	102.9	16.5	95.7	-0.5	P	
352	04/09/15	Lift 8	98.9	15.2	SF-2	102.9	16.5	96.1	-1.3	P	
353	04/10/15	Lift 8	98.7	15.4	SF-2	102.9	16.5	95.9	-1.1	P	
354	04/10/15	Lift 8	97.4	15.4	SF-2	102.9	16.5	94.7	-1.1	F	Density
355	04/10/15	Lift 8	97.9	15.8	SF-2	102.9	16.5	95.1	-0.7	P	
356	04/10/15	Lift 8	97.8	15.7	SF-2	102.9	16.5	95.0	-0.8	P	
357	04/10/15	Lift 8	97.8	15.6	SF-2	102.9	16.5	95.0	-0.9	P	
358	04/10/15	Lift 8	98.5	15.4	SF-2	102.9	16.5	95.7	-1.1	P	
359	04/10/15	Lift 8	98.3	16.4	SF-2	102.9	16.5	95.5	-0.1	P	Retest 341
360	04/10/15	Lift 8	98.1	16.8	SF-2	102.9	16.5	95.3	0.3	P	Retest 354

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04/10/15
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Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/10/15 TO 04/13/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
361	04/10/15	Lift 8	97.9	16.2	SF-2	102.9	16.5	95.1	-0.3	P	
362	04/10/15	Lift 8	98.2	16.8	SF-2	102.9	16.5	95.4	0.3	P	
363	04/10/15	Lift 8	98.3	16.5	SF-2	102.9	16.5	95.5	0.0	P	
364	04/13/15	Lift 8	98.5	16.4	SF-2	102.9	16.5	95.7	-0.1	P	
365	04/13/15	Lift 8	98.2	16.5	SF-2	102.9	16.5	95.4	0.0	P	
366	04/13/15	Lift 8	98.6	16.7	SF-2	102.9	16.5	95.8	0.2	P	
367	04/13/15	Lift 9	98.6	16.8	SF-2	102.9	16.5	95.8	0.3	P	
368	04/13/15	Lift 9	98.9	16.4	SF-2	102.9	16.5	96.1	-0.1	P	
369	04/13/15	Lift 9	98.7	16.5	SF-2	102.9	16.5	95.9	0.0	P	
370	04/13/15	Lift 9	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	
371	04/13/15	Lift 9	98.9	16.4	SF-2	102.9	16.5	96.1	-0.1	P	
372	04/13/15	Lift 9	98.1	16.9	SF-2	102.9	16.5	95.3	0.4	P	
373	04/13/15	Lift 9	98.4	16.3	SF-2	102.9	16.5	95.6	-0.2	P	
374	04/13/15	Lift 9	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	
375	04/13/15	Lift 9	98.9	16.0	SF-2	102.9	16.5	96.1	-0.5	P	
376	04/13/15	Lift 9	99.0	16.2	SF-2	102.9	16.5	96.2	-0.3	P	
377	04/13/15	Lift 9	99.0	16.3	SF-2	102.9	16.5	96.2	-0.2	P	
378	04/13/15	Lift 9	99.1	16.5	SF-2	102.9	16.5	96.3	0.0	P	
379	04/13/15	Lift 9	98.9	16.4	SF-2	102.9	16.5	96.1	-0.1	P	
380	04/13/15	Lift 9	98.6	16.6	SF-2	102.9	16.5	95.8	0.1	P	

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04/13/15
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Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/14/15 TO 04/14/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
381	04/14/15	Lift 9	98.1	16.5	SF-2	102.9	16.5	95.3	0.0	P	
382	04/14/15	Lift 9	98.2	16.8	SF-2	102.9	16.5	95.4	0.3	P	
383	04/14/15	Lift 9	98.0	16.9	SF-2	102.9	16.5	95.2	0.4	P	
384	04/14/15	Lift 9	98.1	16.5	SF-2	102.9	16.5	95.3	0.0	P	
385	04/14/15	Lift 9	98.6	16.7	SF-2	102.9	16.5	95.8	0.2	P	
386	04/14/15	Lift 9	97.9	16.3	SF-2	102.9	16.5	95.1	-0.2	P	
387	04/14/15	Lift 9	98.6	16.8	SF-2	102.9	16.5	95.8	0.3	P	
388	04/14/15	Lift 9	97.9	16.3	SF-2	102.9	16.5	95.1	-0.2	P	
389	04/14/15	Lift 9	98.6	16.9	SF-2	102.9	16.5	95.8	0.4	P	
390	04/14/15	Lift 9	98.6	16.7	SF-2	102.9	16.5	95.8	0.2	P	
391	04/14/15	Lift 9	98.8	16.8	SF-2	102.9	16.5	96.0	0.3	P	
392	04/14/15	Lift 9	98.9	16.5	SF-2	102.9	16.5	96.1	0.0	P	
393	04/14/15	Lift 9	99.0	16.9	SF-2	102.9	16.5	96.2	0.4	P	
394	04/14/15	Lift 9	99.1	17.2	SF-2	102.9	16.5	96.3	0.7	P	
395	04/14/15	Lift 9	98.6	17.2	SF-2	102.9	16.5	95.8	0.7	P	
396	04/14/15	Lift 10	98.1	17.0	SF-2	102.9	16.5	95.3	0.5	P	
397	04/14/15	Lift 10	99.2	16.9	SF-2	102.9	16.5	96.4	0.4	P	
398	04/14/15	Lift 10	98.2	16.8	SF-2	102.9	16.5	95.4	0.3	P	
399	04/14/15	Lift 10	98.6	17.0	SF-2	102.9	16.5	95.8	0.5	P	
400	04/14/15	Lift 10	98.9	17.2	SF-2	102.9	16.5	96.1	0.7	P	

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Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/14/15 TO 04/14/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
401	04/14/15	Lift 10	98.5	15.9	SF-2	102.9	16.5	95.7	-0.6	P	
402	04/14/15	Lift 10	98.6	15.6	SF-2	102.9	16.5	95.8	-0.9	P	
403	04/14/15	Lift 10	99.0	15.9	SF-2	102.9	16.5	96.2	-0.6	P	
404	04/14/15	Lift 10	99.1	16.2	SF-2	102.9	16.5	96.3	-0.3	P	
405	04/14/15	Lift 10	98.6	16.3	SF-2	102.9	16.5	95.8	-0.2	P	
406	04/14/15	Lift 10	98.9	16.4	SF-2	102.9	16.5	96.1	-0.1	P	
407	04/14/15	Lift 10	98.7	16.5	SF-2	102.9	16.5	95.9	0.0	P	
408	04/14/15	Lift 10	98.5	16.4	SF-2	102.9	16.5	95.7	-0.1	P	
409	04/14/15	Lift 10	98.6	16.7	SF-2	102.9	16.5	95.8	0.2	P	
410	04/14/15	Lift 10	98.5	16.8	SF-2	102.9	16.5	95.7	0.3	P	
411	04/14/15	Lift 10	98.9	16.9	SF-2	102.9	16.5	96.1	0.4	P	
412	04/14/15	Lift 10	99.2	16.5	SF-2	102.9	16.5	96.4	0.0	P	
413	04/14/15	Lift 10	99.0	16.5	SF-2	102.9	16.5	96.2	0.0	P	
414	04/14/15	Lift 10	99.1	16.3	SF-2	102.9	16.5	96.3	-0.2	P	
415	04/14/15	Lift 11	99.2	16.2	SF-2	102.9	16.5	96.4	-0.3	P	
416	04/14/15	Lift 11	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	
417	04/14/15	Lift 11	98.6	16.2	SF-2	102.9	16.5	95.8	-0.3	P	
418	04/14/15	Lift 11	99.3	15.9	SF-2	102.9	16.5	96.5	-0.6	P	
419	04/14/15	Lift 11	99.2	15.9	SF-2	102.9	16.5	96.4	-0.6	P	
420	04/14/15	Lift 11	99.0	16.6	SF-2	102.9	16.5	96.2	0.1	P	

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Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/14/15 TO 04/14/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
421	04/14/15	Lift 11	97.9	16.2	SF-2	102.9	16.5	95.1	-0.3	P	
422	04/14/15	Lift 11	98.2	16.3	SF-2	102.9	16.5	95.4	-0.2	P	
423	04/14/15	Lift 11	98.3	16.4	SF-2	102.9	16.5	95.5	-0.1	P	
424	04/14/15	Lift 11	98.6	16.4	SF-2	102.9	16.5	95.8	-0.1	P	
425	04/14/15	Lift 11	98.0	16.2	SF-2	102.9	16.5	95.2	-0.3	P	
426	04/14/15	Lift 12	97.9	16.5	SF-2	102.9	16.5	95.1	0.0	P	
427	04/14/15	Lift 12	97.8	16.6	SF-2	102.9	16.5	95.0	0.1	P	
428	04/14/15	Lift 12	98.1	16.8	SF-2	102.9	16.5	95.3	0.3	P	
429	04/14/15	Lift 12	98.5	16.9	SF-2	102.9	16.5	95.7	0.4	P	
430	04/14/15	Lift 12	98.3	17.0	SF-2	102.9	16.5	95.5	0.5	P	
431	04/14/15	Lift 12	98.3	15.9	SF-2	102.9	16.5	95.5	-0.6	P	
432	04/14/15	Lift 12	98.4	15.9	SF-2	102.9	16.5	95.6	-0.6	P	
433	04/14/15	Lift 12	98.2	16.0	SF-2	102.9	16.5	95.4	-0.5	P	
434	04/14/15	Lift 12	98.6	16.3	SF-2	102.9	16.5	95.8	-0.2	P	
435	04/14/15	Lift 12	98.7	16.7	SF-2	102.9	16.5	95.9	0.2	P	
436	04/14/15	Lift 13	98.5	16.5	SF-2	102.9	16.5	95.7	0.0	P	
437	04/14/15	Lift 13	98.2	17.0	SF-2	102.9	16.5	95.4	0.5	P	
438	04/14/15	Lift 13	97.9	16.9	SF-2	102.9	16.5	95.1	0.4	P	
439	04/14/15	Lift 13	97.9	16.8	SF-2	102.9	16.5	95.1	0.3	P	
440	04/14/15	Lift 13	98.0	16.5	SF-2	102.9	16.5	95.2	0.0	P	

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Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/14/15 TO 04/15/15 PAGE 23

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
441	04/14/15	Lift 13	98.3	16.8	SF-2	102.9	16.5	95.5	0.3	P	
442	04/15/15	Lift 14	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	
443	04/15/15	Lift 14	98.5	16.6	SF-2	102.9	16.5	95.7	0.1	P	
444	04/15/15	Lift 14	98.6	16.4	SF-2	102.9	16.5	95.8	-0.1	P	
445	04/15/15	Lift 14	98.7	16.5	SF-2	102.9	16.5	95.9	0.0	P	
446	04/15/15	Lift 14	98.8	16.3	SF-2	102.9	16.5	96.0	-0.2	P	
447	04/15/15	Lift 14	98.2	16.8	SF-2	102.9	16.5	95.4	0.3	P	
448	04/15/15	Lift 15	98.3	16.5	SF-2	102.9	16.5	95.5	0.0	P	
449	04/15/15	Lift 15	99.0	16.5	SF-2	102.9	16.5	96.2	0.0	P	
450	04/15/15	Lift 15	99.1	16.9	SF-2	102.9	16.5	96.3	0.4	P	
451	04/15/15	Lift 15	99.2	16.9	SF-2	102.9	16.5	96.4	0.4	P	
452	04/15/15	Lift 15	99.0	17.0	SF-2	102.9	16.5	96.2	0.5	P	
453	04/15/15	Lift 15	98.9	17.1	SF-2	102.9	16.5	96.1	0.6	P	
454	04/15/15	Lift 15	98.6	16.9	SF-2	102.9	16.5	95.8	0.4	P	
455	04/15/15	Lift 16	98.7	17.0	SF-2	102.9	16.5	95.9	0.5	P	
456	04/15/15	Lift 16	99.2	17.0	SF-2	102.9	16.5	96.4	0.5	P	
457	04/15/15	Lift 16	99.1	17.2	SF-2	102.9	16.5	96.3	0.7	P	
458	04/15/15	Lift 16	99.0	17.2	SF-2	102.9	16.5	96.2	0.7	P	
459	04/15/15	Lift 16	99.1	17.3	SF-2	102.9	16.5	96.3	0.8	P	
460	04/15/15	Lift 16	99.0	16.9	SF-2	102.9	16.5	96.2	0.4	P	

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04/15/15
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Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/15/15 TO 04/15/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
461	04/15/15	Lift 17	99.0	16.0	SF-2	102.9	16.5	96.2	-0.5	P	
462	04/15/15	Lift 17	99.1	16.5	SF-2	102.9	16.5	96.3	0.0	P	
463	04/15/15	Lift 17	98.9	16.9	SF-2	102.9	16.5	96.1	0.4	P	
464	04/15/15	Lift 17	98.7	16.8	SF-2	102.9	16.5	95.9	0.3	P	
465	04/15/15	Lift 17	98.9	17.2	SF-2	102.9	16.5	96.1	0.7	P	
466	04/15/15	Lift 17	99.0	17.1	SF-2	102.9	16.5	96.2	0.6	P	
467	04/15/15	Lift 17	99.0	17.6	SF-2	102.9	16.5	96.2	1.1	P	
468	04/15/15	Lift 18	99.1	17.5	SF-2	102.9	16.5	96.3	1.0	P	
469	04/15/15	Lift 18	98.9	17.4	SF-2	102.9	16.5	96.1	0.9	P	
470	04/15/15	Lift 18	98.5	17.6	SF-2	102.9	16.5	95.7	1.1	P	
471	04/15/15	Lift 18	98.6	17.8	SF-2	102.9	16.5	95.8	1.3	P	
472	04/15/15	Lift 18	98.9	17.5	SF-2	102.9	16.5	96.1	1.0	P	
473	04/15/15	Lift 18	98.9	17.6	SF-2	102.9	16.5	96.1	1.1	P	
474	04/15/15	Lift 19	98.8	17.2	SF-2	102.9	16.5	96.0	0.7	P	
475	04/15/15	Lift 19	98.7	17.3	SF-2	102.9	16.5	95.9	0.8	P	
476	04/15/15	Lift 19	98.9	17.4	SF-2	102.9	16.5	96.1	0.9	P	
477	04/15/15	Lift 19	99.0	17.6	SF-2	102.9	16.5	96.2	1.1	P	
478	04/15/15	Lift 19	99.1	17.2	SF-2	102.9	16.5	96.3	0.7	P	
479	04/15/15	Lift 19	98.9	16.9	SF-2	102.9	16.5	96.1	0.4	P	
480	04/15/15	Lift 19	99.3	17.2	SF-2	102.9	16.5	96.5	0.7	P	

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04/15/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/16/15 TO 04/16/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
481	04/16/15	Lift 20	97.5	15.5	SF-2	102.9	16.5	94.8	-1.0	F	Density
482	04/16/15	Lift 20	98.0	16.0	SF-2	102.9	16.5	95.2	-0.5	P	
483	04/16/15	Lift 20	97.9	16.9	SF-2	102.9	16.5	95.1	0.4	P	
484	04/16/15	Lift 20	98.3	16.9	SF-2	102.9	16.5	95.5	0.4	P	
485	04/16/15	Lift 20	98.5	17.5	SF-2	102.9	16.5	95.7	1.0	P	
486	04/16/15	Lift 20	98.6	17.2	SF-2	102.9	16.5	95.8	0.7	P	Retest 481
487	04/16/15	Lift 20	98.4	17.4	SF-2	102.9	16.5	95.6	0.9	P	
488	04/16/15	Lift 21	98.5	17.3	SF-2	102.9	16.5	95.7	0.8	P	
489	04/16/15	Lift 21	98.6	17.6	SF-2	102.9	16.5	95.8	1.1	P	
490	04/16/15	Lift 21	99.0	17.7	SF-2	102.9	16.5	96.2	1.2	P	
491	04/16/15	Lift 21	99.2	17.0	SF-2	102.9	16.5	96.4	0.5	P	
492	04/16/15	Lift 21	98.9	17.2	SF-2	102.9	16.5	96.1	0.7	P	
493	04/16/15	Lift 21	99.3	16.9	SF-2	102.9	16.5	96.5	0.4	P	
494	04/16/15	Lift 21	99.3	16.8	SF-2	102.9	16.5	96.5	0.3	P	
495	04/16/15	Lift 22	99.4	16.9	SF-2	102.9	16.5	96.6	0.4	P	
496	04/16/15	Lift 22	99.5	17.2	SF-2	102.9	16.5	96.7	0.7	P	
497	04/16/15	Lift 22	99.2	17.5	SF-2	102.9	16.5	96.4	1.0	P	
498	04/16/15	Lift 22	98.9	17.4	SF-2	102.9	16.5	96.1	0.9	P	
499	04/16/15	Lift 22	98.7	17.6	SF-2	102.9	16.5	95.9	1.1	P	
500	04/16/15	Lift 22	98.9	17.5	SF-2	102.9	16.5	96.1	1.0	P	

Kevin Lesley
PREPARED BY

04/16/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 06/29/15 TO 07/01/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
501	06/29/15	Lift 14	99.2	16.5	SF-2	102.9	16.5	96.4	0.0	P	
502	06/29/15	Lift 14	99.6	16.9	SF-2	102.9	16.5	96.8	0.4	P	
503	06/29/15	Lift 14	99.2	16.7	SF-2	102.9	16.5	96.4	0.2	P	
504	06/29/15	Lift 15	99.1	16.8	SF-2	102.9	16.5	96.3	0.3	P	
505	06/29/15	Lift 15	99.0	16.9	SF-2	102.9	16.5	96.2	0.4	P	
506	06/29/15	Lift 15	99.4	16.8	SF-2	102.9	16.5	96.6	0.3	P	
507	06/29/15	Lift 16	99.0	17.2	SF-2	102.9	16.5	96.2	0.7	P	
508	06/29/15	Lift 16	98.9	17.2	SF-2	102.9	16.5	96.1	0.7	P	
509	06/29/15	Lift 16	98.7	17.4	SF-2	102.9	16.5	95.9	0.9	P	
510	06/30/15	Lift 17	98.6	17.0	SF-2	102.9	16.5	95.8	0.5	P	
511	06/30/15	Lift 17	98.5	17.1	SF-2	102.9	16.5	95.7	0.6	P	
512	06/30/15	Lift 17	99.1	16.9	SF-2	102.9	16.5	96.3	0.4	P	
513	06/30/15	Lift 18	99.0	17.2	SF-2	102.9	16.5	96.2	0.7	P	
514	06/30/15	Lift 18	99.2	17.1	SF-2	102.9	16.5	96.4	0.6	P	
515	06/30/15	Lift 18	99.3	17.5	SF-2	102.9	16.5	96.5	1.0	P	
516	06/30/15	Lift 19	99.0	17.3	SF-2	102.9	16.5	96.2	0.8	P	
517	06/30/15	Lift 19	98.6	17.0	SF-2	102.9	16.5	95.8	0.5	P	
518	06/30/15	Lift 19	98.5	16.9	SF-2	102.9	16.5	95.7	0.4	P	
519	07/01/15	Lift 20	99.2	17.0	SF-2	102.9	16.5	96.4	0.5	P	
520	07/01/15	Lift 20	99.1	16.8	SF-2	102.9	16.5	96.3	0.3	P	

Kevin Lesley
PREPARED BY

07/01/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 07/01/15 TO 07/01/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
521	07/01/15	Lift 21	99.5	16.5	SF-2	102.9	16.5	96.7	0.0	P	
522	07/01/15	Lift 21	99.2	16.2	SF-2	102.9	16.5	96.4	-0.3	P	
523	07/01/15	Lift 21	99.3	16.8	SF-2	102.9	16.5	96.5	0.3	P	
524	07/01/15	Lift 22	99.0	16.9	SF-2	102.9	16.5	96.2	0.4	P	
525	07/01/15	Lift 22	99.2	16.9	SF-2	102.9	16.5	96.4	0.4	P	
526	07/01/15	Lift 22	99.5	17.2	SF-2	102.9	16.5	96.7	0.7	P	

Kevin Lesley
PREPARED BY

07/01/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS
(Drive Ring and Check Plug)

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/12/15 TO 03/24/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
DR-1	03/12/15	Lift 1	94.0	20.0	SF-3	101.1	16.2	93.0	3.8	F	Test 1
CP	03/12/15		101.3	16.5	SF-3	101.1	16.2				
DR-2	03/14/15	Lift 1	96.9	18.4	SF-3	101.1	16.2	95.8	2.2	P	Test 5
CP	03/14/15		101.0	16.3	SF-3	101.1	16.2				
DR-3	03/14/15	Lift 1	97.0	18.1	SF-3	101.1	16.2	95.9	1.9	P	Test 16
DR-4	03/16/15	Lift 1	97.8	18.0	SF-2	102.9	16.5	95.0	1.5	P	Test 21
CP	03/16/15		102.5	16.3	SF-2	102.9	16.5				
DR-5	03/16/15	Lift 1	98.0	17.8	SF-2	102.9	16.5	95.2	1.3	P	Test 46
DR-6	03/17/15	Lift 2	98.1	18.0	SF-2	102.9	16.5	95.3	1.5	P	Test 49
CP	03/17/15		102.7	16.5	SF-2	102.9	16.5				
DR-7	03/18/15	Lift 2	99.1	17.8	SF-2	102.9	16.5	96.3	1.3	P	Test 73
CP	03/18/15		102.7	16.3	SF-2	102.9	16.5				
DR-8	03/18/15	Lift 2	98.4	17.8	SF-2	102.9	16.5	95.6	1.3	P	Test 98
DR-9	03/20/15	Lift 3	97.9	17.5	SF-3	101.1	16.2	96.8	1.3	P	Test 101
CP	03/20/15		101.0	16.3	SF-3	101.1	16.2				
DR-10	03/20/15	Lift 3	98.7	17.4	SF-2	102.9	16.5	95.9	0.9	P	Test 126
DR-11	03/23/15	Lift 4	98.7	16.4	SF-2	102.9	16.5	95.9	-0.1	P	Test 146
CP	03/23/15		102.7	16.3	SF-2	102.9	16.5				
DR-12	03/24/15	Lift 4	97.9	15.4	SF-2	102.9	16.5	95.1	-1.1	P	Test 161
CP	03/24/15		102.7	16.3	SF-2	102.9	16.5				

Kevin Lesley
PREPARED BY

03/24/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS
(Drive Ring and Check Plug)

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 03/27/15 TO 04/08/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
DR-13	03/27/15	Lift 4	98.6	17.2	SF-2	102.9	16.5	95.8	0.7	P	Test 176
CP	03/27/15		102.5	16.2	SF-2	102.9	16.5				
DR-14	03/30/15	Lift 5	98.4	16.6	SF-3	101.1	16.2	97.3	0.4	P	Test 190
CP	03/30/15		101.3	16.4	SF-3	101.1	16.2				
DR-15	03/30/15	Lift 5	97.5	15.8	SF-3	101.1	16.2	96.4	-0.4	P	Test 215
DR-16	03/31/15	Lift 6	96.8	17.3	SF-3	101.1	16.2	95.7	1.1	P	Test 241
CP	03/31/15		101.3	16.4	SF-3	101.1	16.2				
DR-17	04/01/15	Lift 6	97.5	16.4	SF-3	101.1	16.2	96.4	0.2	P	Test 257
CP	04/01/15		101.2	16.3	SF-3	101.1	16.2				
DR-18	04/01/15	Lift 7	96.4	16.2	SF-3	101.1	16.2	95.4	0.0	P	Test 282
DR-19	04/02/15	Lift 7	97.2	16.2	SF-3	101.1	16.2	96.1	0.0	P	Test 288
CP	04/02/15		100.9	15.9	SF-3	101.1	16.2				
DR-20	04/03/15	Lift 7	96.5	16.3	SF-3	101.1	16.2	95.5	0.1	P	Test 295
CP	04/03/15		101.2	16.5	SF-3	101.1	16.2				
DR-21	04/06/15	Lift 7	98.2	16.8	SF-3	101.1	16.2	97.1	0.6	P	Test 316
CP	04/06/15		101.5	16.5	SF-3	101.1	16.2				
DR-22	04/07/15	Lift 8	98.0	15.6	SF-2	102.9	16.5	95.2	-0.9	P	Test 324
CP	04/07/15		102.6	16.8	SF-2	102.9	16.5				
DR-23	04/08/15	Lift 8	99.3	15.6	SF-2	102.9	16.5	96.5	-0.9	P	Test 331
CP	04/08/15		102.6	16.5	SF-2	102.9	16.5				

Kevin Lesley
PREPARED BY

04/08/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS
(Drive Ring and Check Plug)

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 04/09/15 TO 06/30/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
DR-24	04/09/15	Lift 8	97.6	15.3	SF-2	102.9	16.5	94.8	-1.2	F	Test 341
CP	04/09/15		102.8	16.4	SF-2	102.9	16.5				
DR-25	04/10/15	Lift 8	98.5	15.4	SF-2	102.9	16.5	95.7	-1.1	P	Test 353
DR-26	04/10/15	Lift 8	98.4	16.7	SF-2	102.9	16.5	95.6	0.2	P	Test 359
CP	04/10/15		102.8	16.8	SF-2	102.9	16.5				
DR-27	04/13/15	Lift 8	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	Test 364
CP	04/13/15		102.7	16.8	SF-2	102.9	16.5				
DR-28	04/14/15	Lift 9	98.3	16.8	SF-2	102.9	16.5	95.5	0.3	P	Test 381
CP	04/14/15		102.8	16.4	SF-2	102.9	16.5				
DR-29	04/14/15	Lift 10	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	Test 406
DR-30	04/14/15	Lift 12	98.6	16.5	SF-2	102.9	16.5	95.8	0.0	P	Test 432
DR-31	04/15/15	Lift 14	98.5	16.6	SF-2	102.9	16.5	95.7	0.1	P	Test 442
CP	04/15/15		103.1	16.7	SF-2	102.9	16.5				
DR-32	04/15/15	Lift 17	99.1	17.4	SF-2	102.9	16.5	96.3	0.9	P	Test 467
DR-33	04/16/15	Lift 20	97.6	15.8	SF-2	102.9	16.5	94.8	-0.7	F	Test 481
CP	04/16/15		102.8	16.3	SF-2	102.9	16.5				
DR-34	04/16/15	Lift 20	98.5	17.2	SF-2	102.9	16.5	95.7	0.7	P	Test 486
DR-35	06/29/15	Lift 14	99.5	16.8	SF-2	102.9	16.5	96.7	0.3	P	Test 501
CP	06/29/15		102.8	16.6	SF-2	102.9	16.5				
DR-36	06/30/15	Lift 17	98.5	17.2	SF-2	102.9	16.5	95.7	0.7	P	Test 510
CP	06/30/15	Lift 17	102.9	16.8	SF-2	102.9	16.5				

Kevin Lesley
PREPARED BY

06/30/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS
(Drive Ring and Check Plug)

Cell 11
Fill

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 07/01/15 TO 07/01/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
DR-37	07/01/15	Lift 20	99.1	16.9	SF-2	102.9	16.5	96.3	0.4	P	Test 519
CP	07/01/15		102.8	16.4	SF-2	102.9	16.5				

Kevin Lesley
PREPARED BY

07/01/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Anchor Trench

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 07/16/15 TO 07/17/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
CP	07/16/15	-	101.2	16.5	SF-3	101.1	16.2				
DR-1	07/16/15	Lift 1	96.5	16.4	SF-3	101.1	16.2	95.5	0.2	P	
1	07/16/15	Lift 1	96.8	16.5	SF-3	101.1	16.2	95.7	0.3	P	
2	07/16/15	Lift 1	96.3	16.9	SF-3	101.1	16.2	95.3	0.7	P	
3	07/16/15	Lift 1	96.4	17.0	SF-3	101.1	16.2	95.4	0.8	P	
4	07/16/15	Lift 1	96.8	17.2	SF-3	101.1	16.2	95.7	1.0	P	
5	07/16/15	Lift 1	97.0	17.3	SF-3	101.1	16.2	95.9	1.1	P	
6	07/16/15	Lift 1	96.9	17.1	SF-3	101.1	16.2	95.8	0.9	P	
7	07/16/15	Lift 1	96.9	17.2	SF-3	101.1	16.2	95.8	1.0	P	
8	07/16/15	Lift 1	96.3	16.9	SF-3	101.1	16.2	95.3	0.7	P	
9	07/16/15	Lift 1	96.5	17.5	SF-3	101.1	16.2	95.5	1.3	P	
CP	07/17/15	-	100.9	16.5	SF-3	101.1	16.2				
DR-2	07/17/15	Lift 2	96.8	16.4	SF-3	101.1	16.2	95.7	0.2	P	
10	07/17/15	Lift 2	96.7	16.9	SF-3	101.1	16.2	95.6	0.7	P	
11	07/17/15	Lift 2	96.3	17.2	SF-3	101.1	16.2	95.3	1.0	P	
12	07/17/15	Lift 2	96.6	17.2	SF-3	101.1	16.2	95.5	1.0	P	
13	07/17/15	Lift 2	96.6	17.0	SF-3	101.1	16.2	95.5	0.8	P	
14	07/17/15	Lift 2	96.5	16.9	SF-3	101.1	16.2	95.5	0.7	P	
15	07/17/15	Lift 2	97.0	17.3	SF-3	101.1	16.2	95.9	1.1	P	
16	07/17/15	Lift 2	97.1	17.2	SF-3	101.1	16.2	96.0	1.0	P	

Kevin Lesley
PREPARED BY

07/17/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Anchor Trench

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 07/17/15 TO 07/18/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
17	07/17/15	Lift 2	96.5	17.5	SF-3	101.1	16.2	95.5	1.3	P	
18	07/17/15	Lift 2	96.8	17.4	SF-3	101.1	16.2	95.7	1.2	P	
19	07/17/15	Lift 1	96.5	17.6	SF-3	101.1	16.2	95.5	1.4	P	
20	07/17/15	Lift 1	96.9	17.2	SF-3	101.1	16.2	95.8	1.0	P	
21	07/17/15	Lift 1	96.9	17.3	SF-3	101.1	16.2	95.8	1.1	P	
22	07/17/15	Lift 1	97.0	16.9	SF-3	101.1	16.2	95.9	0.7	P	
23	07/17/15	Lift 2	96.5	16.9	SF-3	101.1	16.2	95.5	0.7	P	
24	07/17/15	Lift 2	96.3	17.1	SF-3	101.1	16.2	95.3	0.9	P	
25	07/17/15	Lift 2	96.8	17.2	SF-3	101.1	16.2	95.7	1.0	P	
26	07/17/15	Lift 2	96.7	16.9	SF-3	101.1	16.2	95.6	0.7	P	
27	07/17/15	Lift 3	96.9	16.8	SF-3	101.1	16.2	95.8	0.6	P	
CP	07/18/15	-	101.3	16.4	SF-3	101.1	16.2				
DR-3	07/18/15	Lift 3	97.0	16.5	SF-3	101.1	16.2	95.9	0.3	P	
28	07/18/15	Lift 3	96.9	16.6	SF-3	101.1	16.2	95.8	0.4	P	
29	07/18/15	Lift 3	96.8	16.9	SF-3	101.1	16.2	95.7	0.7	P	
30	07/18/15	Lift 3	96.8	16.9	SF-3	101.1	16.2	95.7	0.7	P	
31	07/18/15	Lift 3	96.5	16.5	SF-3	101.1	16.2	95.5	0.3	P	
32	07/18/15	Lift 3	96.9	17.0	SF-3	101.1	16.2	95.8	0.8	P	
33	07/18/15	Lift 3	96.7	17.2	SF-3	101.1	16.2	95.6	1.0	P	
34	07/18/15	Lift 3	96.5	17.2	SF-3	101.1	16.2	95.5	1.0	P	
35	07/18/15	Lift 3	97.0	17.2	SF-3	101.1	16.2	95.9	1.0	P	
36	07/18/15	Lift 3	96.6	16.5	SF-3	101.1	16.2	95.5	0.3	P	

Kevin Lesley
PREPARED BY

07/18/15
DATE

Brantley Engineering, LLC

SUMMARY OF FIELD DENSITY TESTING RESULTS

Cell 11
Anchor Trench

PROJECT NUMBER: 2015-101

OWNER/ENGINEER: Omni Waste of Osceola, LLC

PROJECT TITLE: JED Cell 11 Construction

CONTRACTOR: RCS Excavation

DATES: FROM 07/18/15 TO 07/18/15

TEST NUMBER	TEST DATE	LOCATION OF SAMPLE	IN PLACE DETERMINATION		MATCHING PROTOR			TEST RESULTS			REMARK
			DRY DENSITY (pcf)	MOISTURE CONTENT (%)	CURVE NUMBER	MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)	PERCENT COMP (%)	DIFFER FROM OPT MOISTURE (%)	PASS/ FAIL	
37	07/18/15	Lift 3	97.0	16.9	SF-3	101.1	16.2	95.9	0.7	P	
38	07/18/15	Lift 3	97.2	16.5	SF-3	101.1	16.2	96.1	0.3	P	
39	07/18/15	Lift 3	97.1	16.5	SF-3	101.1	16.2	96.0	0.3	P	
40	07/18/15	Lift 1	97.0	16.4	SF-3	101.1	16.2	95.9	0.2	P	
41	07/18/15	Lift 1	96.9	16.3	SF-3	101.1	16.2	95.8	0.1	P	
42	07/18/15	Lift 2	96.5	16.2	SF-3	101.1	16.2	95.5	0.0	P	
43	07/18/15	Lift 2	96.9	16.0	SF-3	101.1	16.2	95.8	-0.2	P	
44	07/18/15	Lift 3	97.0	16.5	SF-3	101.1	16.2	95.9	0.3	P	
45	07/18/15	Lift 3	97.1	16.4	SF-3	101.1	16.2	96.0	0.2	P	

Kevin Lesley
PREPARED BY

07/18/15
DATE

APPENDIX D
Inventory Log

Section 1
GCL

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/11/2015

DATE OF INVENTORY: 3/12/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed ABRAHAM STERN

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265814

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	213	150	15	2810	2250	N	
2		214	150	15	2760	2250	N	
3		215	150	15	2745	2250	N	
4		216	150	15	2755	2250	N	
5								
6								
7								
8								
9								
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12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			600					
TOTAL AREA (sq. ft.)			9000					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/11/2015

DATE OF INVENTORY: 3/11/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Land Star

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265814

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	220	150	15	2870	2250	N	
2		221	150	15	2870	2250	N	
3		222	150	15	2890	2250	N	
4		224	150	15	2930	2250	N	
5		230	150	15	2935	2250	N	
6		235	150	15	2940	2250	N	
7		236	150	15	2940	2250	N	
8		237	150	15	2945	2250	N	
9		240	150	15	2905	2250	N	
10		244	150	15	2930	2250	N	
11		255	150	15	2855	2250	N	
12		259	150	15	2890	2250	N	
13		261	150	15	2870	2250	N	
14		273	150	15	2865	2250	N	
15		277	150	15	2905	2250	N	
16		278	150	15	2905	2250	N	
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2400					
TOTAL AREA (sq. ft.)			36000					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/8/2015

DATE OF INVENTORY: 3/8/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed RED MOUNTAIN

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265808

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	227	150	15	2955	2250	N	
2		228	150	15	2940	2250	N	
3		229	150	15	2940	2250	N	
4		243	150	15	2920	2250	N	
5		250	150	15	2855	2250	N	
6		251	150	15	2880	2250	N	
7		252	150	15	2900	2250	N	
8		253	150	15	2880	2250	N	
9		254	150	15	2880	2250	N	
10		256	150	15	2870	2250	N	
11		260	150	15	2870	2250	N	
12		267	150	15	2900	2250	N	
13		269	150	15	2875	2250	N	
14		272	150	15	2905	2250	N	
15		307	150	15	2885	2250	N	
16		333	150	15	2885	2250	N	
17		362	150	15	2885	2250	N	
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2550					
TOTAL AREA (sq. ft.)			38250					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/9/2015

DATE OF INVENTORY: 3/9/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed RED MOUNTAIN

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265811

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	219	150	15	2890	2250	N	
2		257	150	15	2855	2250	N	
3		282	150	15	2940	2250	N	
4		287	150	15	2915	2250	N	
5		294	150	15	2915	2250	N	
6		302	150	15	2895	2250	N	
7		303	150	15	2895	2250	N	
8		304	150	15	2900	2250	N	
9		305	150	15	2890	2250	N	
10		306	150	15	2890	2250	N	
11		316	150	15	2835	2250	N	
12		317	150	15	2880	2250	N	
13		318	150	15	2845	2250	N	
14		324	150	15	2880	2250	N	
15		326	150	15	2860	2250	N	
16		327	150	15	2910	2250	N	
17		332	150	15	2880	2250	N	
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2550					
TOTAL AREA (sq. ft.)			38250					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, L

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/7/2015

DATE OF INVENTORY: 3/7/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Global

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265815

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	205	150	15	2715	2250	Y	
2		206	150	15	2710	2250	N	
3		207	150	15	2760	2250	N	
4		208	150	15	2760	2250	N	
5		211	150	15	2800	2250	N	
6		212	150	15	2800	2250	N	
7		223	150	15	2930	2250	N	
8		231	150	15	2975	2250	N	
9		233	150	15	2920	2250	N	
10		234	150	15	2925	2250	N	
11		239	150	15	2905	2250	N	
12		258	150	15	2890	2250	N	
13		265	150	15	2890	2250	N	
14		314	150	15	2820	2250	N	
15		323	150	15	2850	2250	N	
16		331	150	15	2855	2250	N	
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2400					
TOTAL AREA (sq. ft.)			36000					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/6/2015

DATE OF INVENTORY: 3/6/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Evora

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265812

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	225	150	15	2920	2250	N	
2		226	150	15	2920	2250	N	
3		238	150	15	3920	2250	N	
4		241	150	15	2930	2250	N	
5		242	150	15	2920	2250	N	
6		245	150	15	2905	2250	N	
7		246	150	15	2910	2250	N	
8		247	150	15	2850	2250	N	
9		249	150	15	2890	2250	N	
10		262	150	15	2900	2250	N	
11		263	150	15	2900	2250	N	
12		264	150	15	2890	2250	N	
13		268	150	15	2900	2250	N	
14		279	150	15	2905	2250	N	
15		280	150	15	2910	2250	N	
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2250					
TOTAL AREA (sq. ft.)			33750					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/2/2015

DATE OF INVENTORY: 3/2/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Shick

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265801

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	379	150	15	2825	2250	N	
2		386	150	15	2850	2250	N	
3		388	150	15	2855	2250	N	
4		389	150	15	2845	2250	N	
5		398	150	15	2855	2250	N	
6		399	150	15	2855	2250	N	
7		400	150	15	2790	2250	N	
8		401	150	15	2765	2250	N	
9		402	150	15	2820	2250	N	
10		423	150	15	2875	2250	N	
11		432	150	15	2865	2250	N	
12		433	150	15	2865	2250	N	
13		447	150	15	2760	2250	N	
14		448	150	15	2805	2250	N	
15		449	150	15	2770	2250	N	
16		454	150	15	2775	2250	N	
17								
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19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2400					
TOTAL AREA (sq. ft.)			36000					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/6/2015

DATE OF INVENTORY: 3/6/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Shick

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265813

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	209	150	15	2775	2250	N	
2		217	150	15	2755	2250	N	
3		232	150	15	2950	2250	N	
4		248	150	15	2910	2250	N	
5		266	150	15	2900	2250	N	
6		275	150	15	2880	2250	N	
7		281	150	15	2900	2250	N	
8		283	150	15	2890	2250	N	
9		289	150	15	2960	2250	N	
10		290	150	15	2930	2250	N	
11		291	150	15	2935	2250	N	
12		292	150	15	2935	2250	N	
13		293	150	15	2915	2250	Y	
14		295	150	15	2900	2250	N	
15		301	150	15	2875	2250	N	
16		315	150	15	2855	2250	N	
17								
18								
19								
20								
21								
22								
23								
23								
25								
26								
27								
TOTAL LENGTH (ft.)			2400					
TOTAL AREA (sq. ft.)			36000					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL 3/5/2015

DATE OF INVENTORY: 3/5/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Williams

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265804

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	270	150	15	2910	2250	N	
2		271	150	15	2905	2250	N	
3		276	150	15	2880	2250	N	
4		285	150	15	2920	2250	N	
5		286	150	15	2890	2250	N	
6		288	150	15	2935	2250	N	
7		298	150	15	2890	2250	N	
8		299	150	15	2940	2250	N	
9		300	150	15	2880	2250	N	
10		310	150	15	2870	2250	N	
11		321	150	15	2835	2250	N	
12		322	150	15	2820	2250	N	
13		329	150	15	2890	2250	N	
14		330	150	15	2850	2250	N	
15		341	150	15	2820	2250	N	
16		342	150	15	2810	2250	N	
17		346	150	15	2815	2250	N	
18								
19								
20								
21								
22								
23								
23								
25								
26								
27								
TOTAL LENGTH (ft.)			2550					
TOTAL AREA (sq. ft.)			38250					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/4/2015

DATE OF INVENTORY: 3/4/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Williams

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265805

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	274	150	15	2890	2250	N	
2		284	150	15	2910	2250	N	
3		296	150	15	2900	2250	N	
4		297	150	15	2905	2250	N	
5		308	150	15	2895	2250	N	
6		309	150	15	2875	2250	N	
7		312	150	15	2850	2250	N	
8		313	150	15	2870	2250	N	
9		319	150	15	2845	2250	N	
10		320	150	15	2855	2250	N	
11		328	150	15	2880	2250	N	
12		334	150	15	2885	2250	N	
13		335	150	15	2875	2250	N	
14		338	150	15	2840	2250	N	
15		340	150	15	2820	2250	N	
16		353	150	15	2875	2250	N	
17		378	150	15	2850	2250	N	
18								
19								
20								
21								
22								
23								
23								
25								
26								
27								
TOTAL LENGTH (ft.)			2550					
TOTAL AREA (sq. ft.)			38250					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/4/2015

DATE OF INVENTORY: 3/4/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed P and S

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265809

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	204	150	15	2740	2250	N	
2		311	150	15	2875	2250	N	
3		325	150	15	2880	2250	N	
4		337	150	15	2840	2250	N	
5		339	150	15	2840	2250	N	
6		343	150	15	2810	2250	N	
7		345	150	15	2815	2250	N	
8		349	150	15	2775	2250	N	
9		350	150	15	2785	2250	N	
10		351	150	15	2815	2250	N	
11		352	150	15	2930	2250	N	
12		354	150	15	2975	2250	N	
13		355	150	15	2960	2250	N	
14		356	150	15	2950	2250	N	
15		357	150	15	2975	2250	N	
16		359	150	15	2965	2250	N	
17		360	150	15	2890	2250	N	
18								
19								
20								
21								
22								
23								
23								
25								
26								
27								
TOTAL LENGTH (ft.)			2550					
TOTAL AREA (sq. ft.)			38250					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/4/2015

DATE OF INVENTORY: 3/4/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Gooch

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265803

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	210	150	15	2795	2250	N	
2		358	150	15	2950	2250	N	
3		361	150	15	2910	2250	N	
4		364	150	15	2910	2250	N	
5		365	150	15	2905	2250	N	
6		369	150	15	2880	2250	N	
7		376	150	15	2840	2250	N	
8		377	150	15	2840	2250	N	
9		382	150	15	2860	2250	N	
10		383	150	15	2850	2250	N	
11		384	150	15	2815	2250	N	
12		390	150	15	2820	2250	N	
13		391	150	15	2820	2250	N	
14		392	150	15	2845	2250	N	
15		394	150	15	2870	2250	N	
16		395	150	15	3870	2250	N	
17								
18								
19								
20								
21								
22								
23								
23								
25								
26								
27								
TOTAL LENGTH (ft.)			2400					
TOTAL AREA (sq. ft.)			36000					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/4/2015

DATE OF INVENTORY: 3/4/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Watkins

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265802

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	336	150	15	2870	2250	N	
2		344	150	15	2820	2250	N	
3		347	150	15	2760	2250	N	
4		348	150	15	2775	2250	N	
5		363	150	15	2845	2250	N	
6		366	150	15	2880	2250	N	
7		367	150	15	2885	2250	N	
8		368	150	15	2905	2250	N	
9		370	150	15	2840	2250	N	
10		371	150	15	2880	2250	N	
11		372	150	15	2835	2250	N	
12		373	150	15	2820	2250	N	
13		374	150	15	2840	2250	N	
14		375	150	15	2835	2250	N	
15		380	150	15	2855	2250	N	
16		381	150	15	2850	2250	Y/N	
17								
18								
19								
20								
21								
22								
23								
23								
25								
26								
27								
TOTAL LENGTH (ft.)			2400					
TOTAL AREA (sq. ft.)			36000					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LL

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/3/201

DATE OF INVENTORY: 3/3/2015

MATERIAL MANUFACTURER: Cetc

QA MONITOR: KL

TRUCK TYPE: FLATBED CRANE Trans

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	385	150	15	2840	2250	N	
2		387	150	15	2850	2250	N	
3		393	150	15	2845	2250	N	
4		397	150	15	2865	2250	N	
5		407	150	15	2820	2250	N	
6		411	150	15	2755	2250	N	
7		413	150	15	2780	2250	N	
8		414	150	15	2780	2250	N	
9		422	150	15	2875	2250	N	
10		424	150	15	2805	2250	N	
11		425	150	15	2770	2250	N	
12		435	150	15	2810	2250	N	
13		436	150	15	2830	2250	N	
14		437	150	15	2810	2250	N	
15		438	150	15	2810	2250	N	
16		446	150	15	2745	2250	N	
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2400					
TOTAL AREA (sq. ft.)			36000					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/3/2015

DATE OF INVENTORY: 3/3/2015

MATERIAL MANUFACTURER: Cetc

QA MONITOR: KL

TRUCK TYPE: Flatbed Babcocl

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265806

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	410	150	15	2775	2250	N	
2		415	150	15	2810	2250	N	
3		416	150	15	2820	2250	N	
4		417	150	15	2810	2250	N	
5		418	150	15	2855	2250	N	
6		426	150	15	2830	2250	N	
7		427	150	15	2820	2250	N	
8		428	150	15	2815	2250	N	
9		429	150	15	2795	2250	N	
10		430	150	15	2860	2250	N	
11		439	150	15	2820	2250	N	
12		440	150	15	2820	2250	N	
13		443	150	15	2710	2250	N	
14		444	150	15	2720	2250	N	
15		450	150	15	2770	2250	N	
16		452	150	15	2780	2250	N	
17		453	150	15	2775	2250	N	
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2550					
TOTAL AREA (sq. ft.)			38250					

BRANTLEY ENGINEERING, LLC.

Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GCL

DATE OF ARRIVAL: 3/2/2015

DATE OF INVENTORY: 3/2/2015

MATERIAL MANUFACTURER: Cetco

QA MONITOR: KL

TRUCK TYPE: Flatbed Galvin National

CONDITION IN TRUCK: Good

UNLOADING METHOD: Front Loader

Order # 31265807

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSION			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	201509	396	150	15	2865	2250	N	
2		403	150	15	2795	2250	N	
3		404	150	15	2820	2250	N	
4		405	150	15	2800	2250	N	
5		406	150	15	2820	2250	N	
6		408	150	15	2800	2250	N	
7		409	150	15	2800	2250	N	
8		412	150	15	2845	2250	N	
9		419	150	15	2850	2250	N	
10		420	150	15	2815	2250	N	
11		421	150	15	2820	2250	N	
12		431	150	15	2865	2250	N	
13		434	150	15	2795	2250	N	
14		441	150	15	2820	2250	N	
15		442	150	15	2740	2250	N	
16		445	150	15	2775	2250	N	
17		451	150	15	2810	2250	N	
18								
19								
20								
21								
22								
23								
24								
25								
26								
TOTAL LENGTH (ft.)			2550					
TOTAL AREA (sq. ft.)			38250					

Section 2
HDPE Geomembrane

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/16/2015

DATE OF INVENTORY: 3/16/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HEN820500	G15F083036	505	23	60	11615			
2	HEN820500	G15F083037	505	23	60	11615	Y		
3	HEN820500	G15F084041	505	23	60	11615			
4	HEN820500	G15F084042	505	23	60	11615			
5	HFA820810	G15F084051	505	23	60	11615			
6	HFA820810	G15F085052	505	23	60	11615			
7	HFA820810	G15F085060	505	23	60	11615			
8	HFA820810	G15F085061	505	23	60	11615			
9	HFA820810	G15F086071	505	23	60	11615			
10	HFA820810	G15F086075	505	23	60	11615			
11	HFA820810	G15F086076	505	23	60	11615			
12	HFA820590	G15F087080	505	23	60	11615	Y		
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
TOTAL LENGTH (ft)			6060						
TOTAL AREA (ft)			139380						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/16/2015

DATE OF INVENTORY: 3/16/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HEN820500	F083035	505	23	60	11615			
2	HEN820500	F084040	505	23	60	11615			
3	HEN820500	F084049	505	23	60	11615			
4	HEN820500	F084050	505	23	60	11615			
5	HFA820810	F085053	505	23	60	11615			
6	HFA820810	F085054	505	23	60	11615			
7	HFA820810	F085062	505	23	60	11615			
8	HFA820810	F085063	505	23	60	11615	Y		
9	HFA820810	F086069	505	23	60	11615			
10	HFA820810	F086070	505	23	60	11615			
11	HFA820590	F086077	505	23	60	11615			
12	HFA820590	F087078	505	23	60	11615			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
TOTAL LENGTH (ft)			6060						
TOTAL AREA (ft)			139380						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/17/2015

DATE OF INVENTORY: 3/17/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HEN820500	F083032	505	23	60	11615			
2	HEN820500	F083033	505	23	60	11615			
3	HEN820500	F083038	505	23	60	11615			
4	HEN820500	F084045	505	23	60	11615			
5	HEN820500	F084046	505	23	60	11615	Y		
6	HEN820500	F084047	505	23	60	11615			
7	HFA820810	F085057	505	23	60	11615			
8	HFA820810	F086066	505	23	60	11615			
9	HFA820810	F086067	505	23	60	11615			
10	HFA820590	F091011	505	23	60	11615			
11	HFA820590	F091012	505	23	60	11615			
12	HFA820590	F091013	505	23	60	11615			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
TOTAL LENGTH (ft)			6060						
TOTAL AREA (ft)			139380						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/17/2015

DATE OF INVENTORY: 3/17/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HEN820500	F083034	505	23	60	11615			
2	HEN820500	F084039	505	23	60	11615			
3	HEN820500	F084043	505	23	60	11615			
4	HFA820590	F087079	505	23	60	11615			
5	HFA820590	F087082	505	23	60	11615			
6	HFA820590	F087087	505	23	60	11615			
7	HFA820590	F087090	505	23	60	11615	Y		
8	HFA820590	F087091	505	23	60	11615			
9	HFA820590	F091001	505	23	60	11615			
10	HFA820590	F091004	505	23	60	11615			
11	HFA820590	F091005	505	23	60	11615			
12	HFA820590	F091010	505	23	60	11615			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
27									
TOTAL LENGTH (ft)			6060						
TOTAL AREA (ft)			139380						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LI

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/17/2015

DATE OF INVENTORY: 3/17/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HEN820500	F082022	505	23	60	11615			
2	HEN820500	F082023	505	23	60	11615			
3	HEN820500	F082024	505	23	60	11615			
4	HEN820500	F083029	505	23	60	11615	Y		
5	HEN820500	F083030	505	23	60	11615			
6	HEN820500	F084048	505	23	60	11615			
7	HFA820810	F085055	505	23	60	11615	Y		
8	HFA820810	F085056	505	23	60	11615			
9	HFA820810	F085064	505	23	60	11615			
10	HFA820810	F086068	505	23	60	11615			
11	HFA820590	F087086	505	23	60	11615			
12	HFA820590	F087089	505	23	60	11615			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
27									
TOTAL LENGTH (ft)			6060						
TOTAL AREA (ft)			139380						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LI

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/18/2015

DATE OF INVENTORY: 3/18/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HFA820810	F086072	505	23	60	11615	Y		
2	HFA820810	F086073	505	23	60	11615			
3	HFA820810	F086074	505	23	60	11615			
4	HFA820590	F087084	505	23	60	11615			
5	HFA820590	F087085	505	23	60	11615			
6	HFA820590	F087088	505	23	60	11615			
7	HFA820590	F091002	505	23	60	11615			
8	HFA820590	F091006	505	23	60	11615			
9	HFA820590	F092015	505	23	60	11615			
10	HFA820590	F092016	505	23	60	11615	Y		
11	HFA820590	F092017	505	23	60	11615			
12	HFA820590	F092018	505	23	60	11615			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
27									
TOTAL LENGTH (ft)			6060						
TOTAL AREA (ft)			139380						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LI

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/18/2015

DATE OF INVENTORY: 3/18/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HEN820500	F081010	505	23	60	11615	Y		
2	HEN820500	F081012	505	23	60	11615			
3	HEN820500	F081013	505	23	60	11615			
4	HEN820500	F082014	505	23	60	11615			
5	HFA820590	F087081	505	23	60	11615			
6	H7140955	G14A347078	710	23	40	16330		cut in 1/3 40 mil	
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
27									
TOTAL LENGTH (ft)			3235						
TOTAL AREA (ft)			74405						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LI

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/18/2015

DATE OF INVENTORY: 3/18/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HEN820500	F081011	505	23	60	11615			
2	HEN820500	F082015	505	23	60	11615			
3	HEN820500	F082016	505	23	60	11615			
4	HEN820500	F082017	505	23	60	11615			
5	HEN820500	F082018	505	23	60	11615	Y		
6	HEN820500	F082019	505	23	60	11615			
7	HEN820500	F082020	505	23	60	11615			
8	HEN820500	F082021	505	23	60	11615			
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
27									
TOTAL LENGTH (ft)			4040						
TOTAL AREA (ft)			92920						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11

OWNER: Omni Waste of Osceola County, LI

MATERIAL TYPE: Geomembrane

DATE OF ARRIVAL: 3/27/2015

DATE OF INVENTORY: 3/27/2015

MATERIAL MANUFACTURER: Agru

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	HEN820500	F083027	505	23	60	11615			
2	HEN820500	F083028	505	23	60	11615			
3	HEN820500	F083031	505	23	60	11615			
4	HEN820500	F084044	505	23	60	11615			
5	HFA820810	F085058	505	23	60	11615			
6	HFA820810	F085059	505	23	60	11615			
7	HFA820810	F086065	505	23	60	11615			
8	HFA820590	F091003	505	23	60	11615			
9	HFA820590	F091007	505	23	60	11615			
10	HFA820590	F091008	505	23	60	11615	Y		
11	HFA820590	F091009	505	23	60	11615			
12	HFA820590	F091014	505	23	60	11615			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
27									
TOTAL LENGTH (ft)			6060						
TOTAL AREA (ft)			139380						

Section 3
Drainage Geocomposite

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 270 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/16/2015

DATE OF INVENTORY: 3/16/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	EQUX 641086	63241010165	200	14	270	2800			
2	EQUX 641086	63241010166	200	14	270	2800			
3	EQUX 641086	63241010167	200	14	270	2800			
4	EQUX 641086	63241010168	200	14	270	2800			
5	EQUX 641086	63241010169	200	14	270	2800			
6	EQUX 641086	63241010172	200	14	270	2800			
7	EQUX 641086	63241010173	200	14	270	2800			
8	EQUX 641086	63241010174	200	14	270	2800			
9	EQUX 641086	63241010175	200	14	270	2800			
10	EQUX 641086	63241010176	200	14	270	2800			
11	EQUX 641086	63241010177	200	14	270	2800			
12	EQUX 641086	63241010180	200	14	270	2800			
13	EQUX 641086	63241010181	180	14	270	2520			
14	EQUX 641086	63241010182	200	14	270	2800			
15	EQUX 641086	63241010183	200	14	270	2800			
16	EQUX 641086	63241010184	200	14	270	2800			
17	EQUX 641086	63241010188	200	14	270	2800			
18	EQUX 641086	63241010189	200	14	270	2800			
19	EQUX 641086	63241010190	200	14	270	2800			
20	EQUX 641086	63241010191	200	14	270	2800			
21	EQUX 641086	63241010194	200	14	270	2800			
22	EQUX 641086	63241010195	200	14	270	2800			
23	EQUX 641086	63241010196	200	14	270	2800			
24	EQUX 641086	63241010197	200	14	270	2800			
25	EQUX 641086	63241010200	200	14	270	2800			
26	EQUX 641086	63241010201	200	14	270	2800			
27	EQUX 641086	63241010165	200	14	270	2800			
TOTAL LENGTH (ft.)			5380						
TOTAL AREA (sq. ft.)			75320						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LL(

MATERIAL TYPE: 270 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/16/2015

DATE OF INVENTORY: 3/16/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSION			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	EQUX 641086	63241010084	200	14	270	2800			
2	EQUX 641086	63241010092	200	14	270	2800			
3	EQUX 641086	63241010093	220	14	270	3080			
4	EQUX 641086	63241010094	200	14	270	2800			
5	EQUX 641086	63241010102	150	14	270	2100			
6	EQUX 641086	63241010103	200	14	270	2800			
7	EQUX 641086	63241010105	200	14	270	2800			
8	EQUX 641086	63241010106	200	14	270	2800			
9	EQUX 641086	63241010114	200	14	270	2800			
10	EQUX 641086	63241010115	200	14	270	2800			
11	EQUX 641086	63241010123	200	14	270	2800			
12	EQUX 641086	63241010126	200	14	270	2800			
13	EQUX 641086	63241010130	200	14	270	2800			
14	EQUX 641086	63241010131	200	14	270	2800			
15	EQUX 641086	63241010134	200	14	270	2800			
16	EQUX 641086	63241010135	200	14	270	2800			
17	EQUX 641086	63241010137	230	14	270	3220			
18	EQUX 641086	63241010138	200	14	270	2800			
19	EQUX 641086	63241010139	200	14	270	2800			
20	EQUX 641086	63241010140	200	14	270	2800			
21	EQUX 641086	63241010141	200	14	270	2800			
22	EQUX 641086	63241010142	200	14	270	2800			
23	EQUX 641086	63241010143	200	14	270	2800			
24	EQUX 641086	63241010144	200	14	270	2800	Y		
25	EQUX 641086	63241010145	210	14	270	2940			
26	EQUX 641086	63241010146	200	14	270	2800			
27	EQUX 641086	63241010148	200	14	270	2800			
TOTAL LENGTH (ft.)			5410						
TOTAL AREA (sq. ft.)			75740						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 270 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/16/2015

DATE OF INVENTORY: 3/16/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	EQUX 641086	63241010147	200	14	270	2800			
2	EQUX 641086	63241010149	200	14	270	2800			
3	EQUX 641086	63241010150	200	14	270	2800			
4	EQUX 641086	63241010151	200	14	270	2800			
5	EQUX 641086	63241010152	200	14	270	2800			
6	EQUX 641086	63241010153	200	14	270	2800			
7	EQUX 641086	63241010154	200	14	270	2800			
8	EQUX 641086	63241010155	200	14	270	2800			
9	EQUX 641086	63241010156	200	14	270	2800			
10	EQUX 641086	63241010157	200	14	270	2800			
11	EQUX 641086	63241010158	200	14	270	2800			
12	EQUX 641086	63241010159	200	14	270	2800			
13	EQUX 641086	63241010160	200	14	270	2800			
14	EQUX 641086	63241010161	200	14	270	2800			
15	EQUX 641086	63241010162	200	14	270	2800			
16	EQUX 641086	63241010163	200	14	270	2800			
17	EQUX 641086	63241010164	200	14	270	2800			
18	EQUX 641086	63241010170	160	14	270	2240			
19	EQUX 641086	63241010171	180	14	270	2520			
20	EQUX 641086	63241010178	200	14	270	2800			
21	EQUX 641086	63241010179	210	14	270	2940			
22	EQUX 641086	63241010186	200	14	270	2800			
23	EQUX 641086	63241010187	200	14	270	2800			
24	EQUX 641086	63241010192	200	14	270	2800			
25	EQUX 641086	63241010193	200	14	270	2800			
26	EQUX 641086	63241010198	200	14	270	2800			
27	EQUX 641086	63241010199	200	14	270	2800			
TOTAL LENGTH (ft.)			5350						
TOTAL AREA (sq. ft.)			74900						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 270 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/16/2015

DATE OF INVENTORY: 3/16/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	EQUX 641086	63241010078	200	14	270	2800			
2	EQUX 641086	63241010080	200	14	270	2800			
3	EQUX 641086	63241010081	200	14	270	2800			
4	EQUX 641086	63241010082	200	14	270	2800			
5	EQUX 641086	63241010083	200	14	270	2800			
6	EQUX 641086	63241010088	200	14	270	2800			
7	EQUX 641086	63241010089	200	14	270	2800			
8	EQUX 641086	63241010090	200	14	270	2800			
9	EQUX 641086	63241010091	200	14	270	2800			
10	EQUX 641086	63241010098	140	14	270	1960			
11	EQUX 641086	63241010099	260	14	270	3640			
12	EQUX 641086	63241010100	200	14	270	2800			
13	EQUX 641086	63241010101	200	14	270	2800			
14	EQUX 641086	63241010110	200	14	270	2800			
15	EQUX 641086	63241010111	200	14	270	2800			
16	EQUX 641086	63241010112	200	14	270	2800			
17	EQUX 641086	63241010113	200	14	270	2800			
18	EQUX 641086	63241010118	200	14	270	2800			
19	EQUX 641086	63241010119	200	14	270	2800			
20	EQUX 641086	63241010120	200	14	270	2800			
21	EQUX 641086	63241010121	210	14	270	2940			
22	EQUX 641086	63241010122	200	14	270	2800			
23	EQUX 641086	63241010127	200	14	270	2800			
24	EQUX 641086	63241010128	200	14	270	2800			
25	EQUX 641086	63241010129	200	14	270	2800			
26	EQUX 641086	63241010132	200	14	270	2800			
27	EQUX 641086	63241010133	200	14	270	2800			
TOTAL LENGTH (ft.)			5410						
TOTAL AREA (sq. ft.)			75740						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 270 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/17/2015

DATE OF INVENTORY: 3/17/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	EQUX 641086	63241010016	200	14	270	2800			
2	EQUX 641086	63241010017	200	14	270	2800			
3	EQUX 641086	63241010030	200	14	270	2800			
4	EQUX 641086	63241010031	210	14	270	2940			
5	EQUX 641086	63241010048	200	14	270	2800			
6	EQUX 641086	63241010049	200	14	270	2800			
7	EQUX 641086	63241010054	200	14	270	2800			
8	EQUX 641086	63241010055	200	14	270	2800			
9	EQUX 641086	63241010065	200	14	270	2800			
10	EQUX 641086	63241010066	200	14	270	2800			
11	EQUX 641086	63241010075	200	14	270	2800			
12	EQUX 641086	63241010076	200	14	270	2800			
13	EQUX 641086	63241010077	180	14	270	2520			
14	EQUX 641086	63241010079	200	14	270	2800			
15	EQUX 641086	63241010085	200	14	270	2800			
16	EQUX 641086	63241010086	200	14	270	2800			
17	EQUX 641086	63241010087	200	14	270	2800			
18	EQUX 641086	63241010095	200	14	270	2800			
19	EQUX 641086	63241010096	200	14	270	2800			
20	EQUX 641086	63241010097	200	14	270	2800			
21	EQUX 641086	63241010104	200	14	270	2800			
22	EQUX 641086	63241010107	200	14	270	2800			
23	EQUX 641086	63241010108	200	14	270	2800			
24	EQUX 641086	63241010116	200	14	270	2800			
25	EQUX 641086	63241010117	200	14	270	2800			
26	EQUX 641086	63241010124	200	14	270	2800			
27	EQUX 641086	63241010125	200	14	270	2800			
TOTAL LENGTH (ft.)			5390						
TOTAL AREA (sq. ft.)			75460						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 270 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/17/2015

DATE OF INVENTORY: 3/17/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	EQUX 641086	63241010008	200	14	270	2800			
2	EQUX 641086	63241010010	200	14	270	2800			
3	EQUX 641086	63241010011	210	14	270	2940			
4	EQUX 641086	63241010012	200	14	270	2800			
5	EQUX 641086	63241010013	200	14	270	2800			
6	EQUX 641086	63241010024	200	14	270	2800			
7	EQUX 641086	63241010025	200	14	270	2800			
8	EQUX 641086	63241010026	200	14	270	2800			
9	EQUX 641086	63241010027	200	14	270	2800			
10	EQUX 641086	63241010040	200	14	270	2800			
11	EQUX 641086	63241010042	200	14	270	2800			
12	EQUX 641086	63241010044	200	14	270	2800			
13	EQUX 641086	63241010045	170	14	270	2380			
14	EQUX 641086	63241010050	200	14	270	2800			
15	EQUX 641086	63241010051	200	14	270	2800			
16	EQUX 641086	63241010052	200	14	270	2800			
17	EQUX 641086	63241010053	200	14	270	2800			
18	EQUX 641086	63241010060	200	14	270	2800			
19	EQUX 641086	63241010061	200	14	270	2800			
20	EQUX 641086	63241010062	200	14	270	2800			
21	EQUX 641086	6324101063	200	14	270	2800			
22	EQUX 641086	63241010164	200	14	270	2800			
23	EQUX 641086	63241010170	200	14	270	2800			
24	EQUX 641086	63241010171	200	14	270	2800			
25	EQUX 641086	63241010172	215	14	270	3010	Y		
26	EQUX 641086	63241010173	200	14	270	2800			
27	EQUX 641086	63241010174	200	14	270	2800			
TOTAL LENGTH (ft.)			5395						
TOTAL AREA (sq. ft.)			75530						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 270 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/17/2015

DATE OF INVENTORY: 3/17/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	EQUX 641086	63241010004	200	14	270	2800			
2	EQUX 641086	63241010005	200	14	270	2800			
3	EQUX 641086	63241010006	200	14	270	2800			
4	EQUX 641086	63241010007	200	14	270	2800			
5	EQUX 641086	63241010009	200	14	270	2800			
6	EQUX 641086	63241010018	200	14	270	2800			
7	EQUX 641086	63241010020	200	14	270	2800			
8	EQUX 641086	63241010021	200	14	270	2800			
9	EQUX 641086	63241010022	200	14	270	2800			
10	EQUX 641086	63241010023	210	14	270	2940			
11	EQUX 641086	63241010032	200	14	270	2800			
12	EQUX 641086	63241010034	200	14	270	2800			
13	EQUX 641086	63241010035	200	14	270	2800			
14	EQUX 641086	63241010036	200	14	270	2800			
15	EQUX 641086	63241010037	200	14	270	2800			
16	EQUX 641086	63241010039	200	14	270	2800			
17	EQUX 641086	63241010041	200	14	270	2800			
18	EQUX 641086	63241010043	200	14	270	2800			
19	EQUX 641086	63241010046	220	14	270	3080			
20	EQUX 641086	63241010047	200	14	270	2800			
21	EQUX 641086	63241010156	200	14	270	2800			
22	EQUX 641086	63241010157	200	14	270	2800			
23	EQUX 641086	63241010158	200	14	270	2800			
24	EQUX 641086	63241010159	200	14	270	2800			
25	EQUX 641086	63241010167	200	14	270	2800			
26	EQUX 641086	63241010168	200	14	270	2800			
27	EQUX 641086	63241010169	200	14	270	2800			
TOTAL LENGTH (ft.)			5430						
TOTAL AREA (sq. ft.)			76020						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County,

MATERIAL TYPE: 270 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/17/2015

DATE OF INVENTORY: 3/17/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	EQUX 641086	63241010001	200	14	270	2800	Y		
2	EQUX 641086	63241010002	200	14	270	2800			
3	EQUX 641086	63241010003	200	14	270	2800			
4	EQUX 641086	63241010014	200	14	270	2800			
5	EQUX 641086	63241010015	200	14	270	2800			
6	EQUX 641086	63241010019	200	14	270	2800			
7	EQUX 641086	63241010028	200	14	270	2800			
8	EQUX 641086	63241010029	180	14	270	2520			
9	EQUX 641086	63241010033	200	14	270	2800			
10	EQUX 641086	63241010038	310	14	270	4340			
11	EQUX 641086	63241010109	115	14	270	1610			
12	EQUX 641086	63241010091	75	14	270	1050			
13	EQUX 641086	63241010136	125	14	270	1750		Last load of 270	
TOTAL LENGTH (ft.)			2405						
TOTAL AREA (sq. ft.)			33670						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County,

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/17/2015

DATE OF INVENTORY: 3/17/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT			
1	GPLX 76990	63241020063	170	14	330	2380		First load of 330
2	GPLX 76990	63241020064	170	14	330	2380		
3	GPLX 76990	63241020065	170	14	330	2380		
4	GPLX 76990	63241020066	170	14	330	2380		
5	GPLX 76990	63241020087	170	14	330	2380		
6	GPLX 76990	63241020088	170	14	330	2380		
7	GPLX 76990	63241020089	170	14	330	2380		
8	GPLX 76990	63241020090	185	14	330	2590		
9	GPLX 76990	63241020099	170	14	330	2380		
10	GPLX 76990	63241020100	170	14	330	2380		
11	GPLX 76990	63241020101	170	14	330	2380		
12	GPLX 76990	63241020159	170	14	330	2380		
13	GPLX 76990	63241020160	170	14	330	2380		
14	GPLX 76990	63241020168	170	14	330	2380		
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
TOTAL LENGTH (ft.)			2395					
TOTAL AREA (sq. ft.)			33530					

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/19/2015

DATE OF INVENTORY: 3/19/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	GPLX 76990	63241020055	170	14	270	2380			
2	GPLX 76990	63241020056	170	14	270	2380			
3	GPLX 76990	63241020057	170	14	270	2380			
4	GPLX 76990	63241020058	170	14	270	2380			
5	GPLX 76990	63241020060	170	14	270	2380			
6	GPLX 76990	63241020091	170	14	270	2380			
7	GPLX 76990	63241020092	170	14	270	2380			
8	GPLX 76990	63241020093	170	14	270	2380			
9	GPLX 76990	63241020094	170	14	270	2380			
10	GPLX 76990	63241020096	170	14	270	2380			
11	GPLX 76990	63241020103	170	14	270	2380			
12	GPLX 76990	63241020113	170	14	270	2380			
13	GPLX 76990	63241020114	170	14	270	2380			
14	GPLX 76990	63241020115	170	14	270	2380			
15	GPLX 76990	63241020116	170	14	270	2380			
16	GPLX 76990	63241020155	205	14	270	2870			
17	GPLX 76990	63241020156	125	14	270	1750			
18	GPLX 76990	63241020157	225	14	270	3150			
19	GPLX 76990	63241020158	170	14	270	2380			
20	GPLX 76990	63241020163	170	14	270	2380			
21	GPLX 76990	63241020164	170	14	270	2380			
22	GPLX 76990	63241020165	170	14	270	2380			
23	GPLX 76990	63241020166	170	14	270	2380			
24	GPLX 76990	63241020173	170	14	270	2380			
25	GPLX 76990	63241020174	170	14	270	2380			
26	GPLX 76990	63241020175	170	14	270	2380			
27	GPLX 76990	63241020176	170	14	270	2380			
TOTAL LENGTH (ft.)			4635						
TOTAL AREA (sq. ft.)			64890						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/19/2015

DATE OF INVENTORY: 3/19/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	GPLX 76990	63241020059	170	14	270	2380			
2	GPLX 76990	63241020061	170	14	270	2380			
3	GPLX 76990	63241020062	170	14	270	2380			
4	GPLX 76990	63241020067	170	14	270	2380			
5	GPLX 76990	63241020095	170	14	270	2380			
6	GPLX 76990	63241020097	170	14	270	2380			
7	GPLX 76990	63241020098	170	14	270	2380			
8	GPLX 76990	63241020102	130	14	270	1820			
9	GPLX 76990	63241020127	170	14	270	2380			
10	GPLX 76990	63241020128	170	14	270	2380			
11	GPLX 76990	63241020137	170	14	270	2380			
12	GPLX 76990	63241020138	170	14	270	2380			
13	GPLX 76990	63241020139	170	14	270	2380			
14	GPLX 76990	63241020140	170	14	270	2380			
15	GPLX 76990	63241020141	170	14	270	2380			
16	GPLX 76990	63241020143	170	14	270	2380			
17	GPLX 76990	63241020144	170	14	270	2380			
18	GPLX 76990	63241020145	170	14	270	2380			
19	GPLX 76990	63241020146	170	14	270	2380			
20	GPLX 76990	63241020153	170	14	270	2380			
21	GPLX 76990	63241020161	170	14	270	2380			
22	GPLX 76990	63241020162	170	14	270	2380			
23	GPLX 76990	63241020167	170	14	270	2380			
24	GPLX 76990	63241020169	170	14	270	2380	Y		
25	GPLX 76990	63241020170	170	14	270	2380			
26	GPLX 76990	63241020171	170	14	270	2380			
27	GPLX 76990	63241020172	170	14	270	2380			
TOTAL LENGTH (ft.)			4550						
TOTAL AREA (sq. ft.)			63700						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/19/2015

DATE OF INVENTORY: 3/19/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	GPLX 76990	63241020033	170	14	270	2380			
2	GPLX 76990	63241020034	170	14	270	2380			
3	GPLX 76990	63241020039	170	14	270	2380			
4	GPLX 76990	63241020040	170	14	270	2380			
5	GPLX 76990	63241020043	170	14	270	2380			
6	GPLX 76990	63241020046	170	14	270	2380			
7	GPLX 76990	63241020047	170	14	270	2380			
8	GPLX 76990	63241020050	170	14	270	2380			
9	GPLX 76990	63241020051	170	14	270	2380			
10	GPLX 76990	63241020052	170	14	270	2380			
11	GPLX 76990	63241020053	170	14	270	2380			
12	GPLX 76990	63241020054	170	14	270	2380			
13	GPLX 76990	63241020068	170	14	270	2380			
14	GPLX 76990	63241020129	170	14	270	2380			
15	GPLX 76990	63241020130	180	14	270	2520			
16	GPLX 76990	63241020131	170	14	270	2380			
17	GPLX 76990	63241020132	170	14	270	2380			
18	GPLX 76990	63241020133	170	14	270	2380			
19	GPLX 76990	63241020134	170	14	270	2380			
20	GPLX 76990	63241020142	170	14	270	2380			
21	GPLX 76990	63241020147	170	14	270	2380			
22	GPLX 76990	63241020148	170	14	270	2380			
23	GPLX 76990	63241020149	170	14	270	2380			
24	GPLX 76990	63241020150	170	14	270	2380			
25	GPLX 76990	63241020151	170	14	270	2380			
26	GPLX 76990	63241020152	170	14	270	2380			
27	GPLX 76990	63241020201	120	14	270	1680			
TOTAL LENGTH (ft.)			4550						
TOTAL AREA (sq. ft.)			63700						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/19/2015

DATE OF INVENTORY: 3/19/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	GPLX 76990	63241020001	180	14	270	2520	Y		
2	GPLX 76990	63241020002	160	14	270	2240			
3	GPLX 76990	63241020003	190	14	270	2660			
4	GPLX 76990	63241020004	200	14	270	2800			
5	GPLX 76990	63241020005	170	14	270	2380			
6	GPLX 76990	63241020008	170	14	270	2380			
7	GPLX 76990	63241020009	170	14	270	2380			
8	GPLX 76990	63241020010	170	14	270	2380			
9	GPLX 76990	63241020011	170	14	270	2380			
10	GPLX 76990	63241020012	170	14	270	2380			
11	GPLX 76990	63241020014	170	14	270	2380			
12	GPLX 76990	63241020069	170	14	270	2380			
13	GPLX 76990	63241020070	170	14	270	2380			
14	GPLX 76990	63241020071	170	14	270	2380			
15	GPLX 76990	63241020072	170	14	270	2380			
16	GPLX 76990	63241020077	170	14	270	2380			
17	GPLX 76990	63241020078	170	14	270	2380			
18	GPLX 76990	63241020079	170	14	270	2380			
19	GPLX 76990	63241020080	170	14	270	2380			
20	GPLX 76990	63241020104	170	14	270	2380			
21	GPLX 76990	63241020105	170	14	270	2380			
22	GPLX 76990	63241020106	170	14	270	2380			
23	GPLX 76990	63241020107	170	14	270	2380			
24	GPLX 76990	63241020121	170	14	270	2380			
25	GPLX 76990	63241020122	170	14	270	2380			
26	GPLX 76990	63241020,23	205	14	270	2870			
27	GPLX 76990	63241020124	135	14	270	1890			
TOTAL LENGTH (ft.)			4640						
TOTAL AREA (sq. ft.)			64960						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/23/2015

DATE OF INVENTORY: 3/23/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	GPLX 76990	63241020015	170	14	330	2380			
2	GPLX 76990	63241020016	170	14	330	2380			
3	GPLX 76990	63241020017	170	14	330	2380			
4	GPLX 76990	63241020020	170	14	330	2380			
5	GPLX 76990	63241020021	170	14	330	2380			
6	GPLX 76990	63241020022	170	14	330	2380			
7	GPLX 76990	63241020023	165	14	330	2310			
8	GPLX 76990	63241020024	170	14	330	2380			
9	GPLX 76990	63241020025	170	14	330	2380			
10	GPLX 76990	63241020026	170	14	330	2380			
11	GPLX 76990	63241020027	170	14	330	2380			
12	GPLX 76990	63241020081	170	14	330	2380			
13	GPLX 76990	63241020082	170	14	330	2380			
14	GPLX 76990	63241020083	170	14	330	2380			
15	GPLX 76990	63241020084	170	14	330	2380			
16	GPLX 76990	63241020108	170	14	330	2380			
17	GPLX 76990	63241020109	170	14	330	2380			
18	GPLX 76990	63241020110	170	14	330	2380			
19	GPLX 76990	63241020111	170	14	330	2380			
20	GPLX 76990	63241020117	170	14	330	2380			
21	GPLX 76990	63241020118	170	14	330	2380			
22	GPLX 76990	63241020125	170	14	330	2380			
23	GPLX 76990	63241020126	170	14	330	2380			
24	GPLX 76990	63241020126	170	14	330	2380			
25	GPLX 76990	63241020135	170	14	330	2380			
26	GPLX 76990	63241020136	170	14	330	2380			
27	GPLX 76990	63241020154	170	14	330	2380			
TOTAL LENGTH (ft.)			4585						
TOTAL AREA (sq. ft.)			64190						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/23/2015

DATE OF INVENTORY: 3/23/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	GPLX 76990	63241020006	170	14	330	2380			
2	GPLX 76990	63241020007	170	14	330	2380			
3	GPLX 76990	63241020013	170	14	330	2380			
4	GPLX 76990	63241020019	170	14	330	2380			
5	GPLX 76990	63241020028	165	14	330	2310			
6	GPLX 76990	63241020029	170	14	330	2380			
7	GPLX 76990	63241020030	170	14	330	2380			
8	GPLX 76990	63241020031	170	14	330	2380			
9	GPLX 76990	63241020032	180	14	330	2520			
10	GPLX 76990	63241020035	170	14	330	2380			
11	GPLX 76990	63241020036	170	14	330	2380			
12	GPLX 76990	63241020037	170	14	330	2380			
13	GPLX 76990	63241020038	170	14	330	2380			
14	GPLX 76990	63241020041	170	14	330	2380			
15	GPLX 76990	63241020042	170	14	330	2380			
16	GPLX 76990	63241020044	170	14	330	2380			
17	GPLX 76990	63241020045	170	14	330	2380			
18	GPLX 76990	63241020048	170	14	330	2380			
19	GPLX 76990	63241020049	170	14	330	2380			
20	GPLX 76990	63241020073	170	14	330	2380			
21	GPLX 76990	63241020074	170	14	330	2380			
22	GPLX 76990	63241020075	170	14	330	2380			
23	GPLX 76990	63241020076	170	14	330	2380			
24	GPLX 76990	63241020085	170	14	330	2380	Y		
25	GPLX 76990	63241020086	170	14	330	2380			
26	GPLX 76990	63241020119	170	14	330	2380			
27	GPLX 76990	63241020120	170	14	330	2380			
TOTAL LENGTH (ft.)			4595						
TOTAL AREA (sq. ft.)			64330						

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/23/2015

DATE OF INVENTORY: 3/23/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	GPLX 76990	63241020112	90	14	330	1260		+2800 sf	20112.1
2	GPLX 76990	63241020177	80	14	330	1120			
3	GPLX 76990	63241020178	170	14	330	2380			
4	GPLX 76990	63241020179	170	14	330	2380			
5	GPLX 76990	63241020180	170	14	330	2380			
6	GPLX 76990	63241020181	170	14	330	2380			
7	GPLX 76990	63241020182	170	14	330	2380			
8	GPLX 76990	63241020183	170	14	330	2380			
9	GPLX 76990	63241020184	60	14	330	840			
10	GPLX 76990	63241020185	170	14	330	2380			
11	GPLX 76990	63241020186	170	14	330	2380			
12	GPLX 76990	63241020187	170	14	330	2380			
13	GPLX 76990	63241020188	170	14	330	2380			
14	GPLX 76990	63241020189	170	14	330	2380			
15	GPLX 76990	63241020190	170	14	330	2380			
16	GPLX 76990	63241020191	170	14	330	2380			
17	GPLX 76990	63241020192	170	14	330	2380			
18	GPLX 76990	63241020193	170	14	330	2380			
19	GPLX 76990	63241020194	170	14	330	2380			
20	GPLX 76990	63241020195	170	14	330	2380			
21	GPLX 76990	63241020196	170	14	330	2380			
22	GPLX 76990	63241020197	170	14	330	2380			
23	GPLX 76990	63241020198	170	14	330	2380			
24	GPLX 76990	63241020199	125	14	330	1750			
25	GPLX 76990	63241020200	120	14	330	1680			
26	GPLX 76990	63241020202	190	14	330	2660			
27	GPLX 76990	63241020203	120	14	330	1680			
TOTAL LENGTH (ft.)			4185						
TOTAL AREA (sq. ft.)			58590	+2800 =		61390			

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: 330 - GEOCOMPOSITE

DATE OF ARRIVAL: 3/25/2015

DATE OF INVENTORY: 3/25/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Loader

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	GPLX 76990	63241020204	170	14	330	2380			
2	GPLX 76990	63241020205	170	14	330	2380			
3	GPLX 76990	63241020206	170	14	330	2380			
4	GPLX 76990	63241020207	170	14	330	2380			
5	GPLX 76990	63241020208	170	14	330	2380			
6	GPLX 76990	63241020209	170	14	330	2380			
7	GPLX 76990	63241020210	170	14	330	2380			
8	GPLX 76990	63241020211	170	14	330	2380			
9	GPLX 76990	63241020212	170	14	330	2380			
10	GPLX 76990	63241020213	170	14	330	2380			
11	GPLX 76990	63241020214	170	14	330	2380			
12	GPLX 76990	63241020215	170	14	330	2380			
13	GPLX 76990	63241020216	170	14	330	2380			
14	GPLX 76990	63241020217	170	14	330	2380			
15	GPLX 76990	63241020218	170	14	330	2380			
16	GPLX 76990	63241020219	170	14	330	2380			
17	GPLX 76990	63241020220	170	14	330	2380			
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
TOTAL LENGTH (ft.)			2890						
TOTAL AREA (sq. ft.)			40460						

Section 4
Geotextile

BRANTLEY ENGINEERING, LLC.
Geosynthetic Inventory Control Log

PROJECT NAME: J.E.D. Cell 11 Construction

OWNER: Omni Waste of Osceola County, LLC

MATERIAL TYPE: GE-180 Geotextile

DATE OF ARRIVAL: 3/25/2015

DATE OF INVENTORY: 3/25/2015

MATERIAL MANUFACTURER: Skaps

QA MONITOR: KL

TRUCK TYPE: Flatbed

CONDITION IN TRUCK: Good

UNLOADING METHOD: Trackhoe

#	RESIN LOT #	ROLL NUMBER	MATERIAL DIMENSIONS			SQ FEET	CONF SAMPLE Y/N	REMARKS	
			LENGTH (Ft)	WIDTH (Ft)	THICKNESS OR WEIGHT				
1	-	37442.01	690	15	8 oz	10350			
2	-	37442.02	690	15	8 oz	10350	Y		
3	-	37442.03	690	15	8 oz	10350			
4	-	37442.04	690	15	8 oz	10350			
5	-	37442.05	690	15	8 oz	10350			
6	-	37442.06	690	15	8 oz	10350			
7	-	37442.07	690	15	8 oz	10350			
8	-	37442.08	690	15	8 oz	10350			
TOTAL LENGTH (ft.)			5520						
TOTAL AREA (sq. ft.)			82800						

APPENDIX E
Manufacturer's Quality Control Certificates

Section 1
GCL

Date: 2/26/2015
Purchase Order: PER MIKE KAISER
ORDER NUMBERS: 00312658A, 031265801, 031265806

Waste Services
Attn: Mike Kaiser
St Cloud, FL 34773
michael.kaiser@progreeivewaste.com; abrantley@brantleyeng.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Waste Services.

The enclosed data package includes results of all the MQC tests required by ASTM D5889, with the exception of index flux/hydraulic conductivity. This test, which is run according to ASTM D5887, is normally performed once per production lot (once per week), unless a higher frequency is required by the project specifications. Because of the GCL's low permeability, this test can take several weeks to complete. The index flux/hydraulic conductivity results associated with this lot of material will be provided under separate cover as soon as they are available.

Although the index flux/hydraulic conductivity test results are not yet available, CETCO accepts responsibility for our GCL should the index flux/hydraulic conductivity tests produce unacceptable results. If, upon delivery and prior to installation, individual rolls of GCL are found to be nonconforming to accepted project specifications, CETCO will replace the nonconforming material at no charge.

Questions regarding this information should be directed to Marat Goldenberg, Technical Support Engineer, at (847) 851-1790.

Sincerely,

Roger B. Wilkerson
Quality Assurance Coordinator
CETCO Lovell Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Jed LF Cell 11
CUSTOMER P.O.: PER MIKE KAISER
ORDER NUMBERS: 00312658A, 031265801, 031265806
PREPARED FOR: Waste Services

CONTENTS:

- Product Certifications
- GCL Order packing list and MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Roger B. Wilkerson
Quality Assurance Coordinator
CETCO
P.O. Box 428
92 Hwy. 37
Lovell, WY 82431
Telephone: 800-322-1149 ext. 413
E-Mail: rwilke@cetco.com

PRODUCT CERTIFICATIONS

PROJECT NAME: Jed LF Cell 11
CUSTOMER P.O.: PER MIKE KAISER
ORDER NUMBERS: 00312658A, 031265801, 031265806
PREPARED FOR: Waste Services

The GCL manufactured for the above-referenced order number(s) is certified to meet the values listed in the tables below:

GCL PROPERTY SPECIFICATIONS FOR BENTOMAT ST

Test Method	Test Method Property	Test Frequency	Certified Value
ASTM D 5891	Bentonite Fluid Loss	1 per 50 Tons	18 ml Max
ASTM D 5993	Bentonite Mass/Area	40,000 sq ft (4000 sq m)	0.75 lb /sq ft Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	30 lbs/in MARV
ASTM D 6243	GCL Hydrated Internal Shear Strength	Periodic	500 psf typ @ 200 psf normal load
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5.0E-9 cm/s Max
ASTM D 5887	GCL Index Flux	Weekly	1.0E-8 m3/m2/s Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	3.5 lbs/in Min

SPECIALLY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 5887	GCL Hydraulic Conductivity	100,000 sqft	5.0E-9 cm/s	Standard
ASTM D 6768	GCL Grab Strength	40,000 sqft	Report	Standard
ASTM D4632*	Grab Strength*modified with 4-inch grips	Standard	Report	Modified
ASTM D 4643	GCL Moisture	Standard	35% Max	Standard
ASTM D4632*	Peel Strength*modified with 4-inch grips	Standard	Report	Modified

Bentonite property tests are performed at a bentonite processing facility before shipment to CETCO's production facility.
All tensile testing is in the machine direction using ASTM D 6768. All peel strength testing is performed using
ASTM D 6496. Upon request tensile and peel results can be reported per modified ASTM D 4632 using 4 inch grips.

NEEDLE DETECTION AND REMOVAL PROCEDURE

CETCO hereby affirms that all Bentomat® geosynthetic clay liner material manufactured for this project is continually passed under a magnet for needle removal and then screened with a metal detection device. CETCO certifies Bentomat® to be essentially free of broken needles and fragments of needles that would negatively effect the performance of the final product.

Roger B. Wilkerson
Quality Assurance Coordinator

GCL PACKING LIST AND MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 000312658

GCL								Geotextiles				Clay
LO-BENTOMAT ST								N/W-WHITE			LO-WOVEN-ST	LO-CG 50
Order	**GCL Lot #**	**GCL Roll #**	**Length**	**Width**	**weight**	**sq ft**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
00312658A	201509LO	204	150	15	2740	2250	204	J20182462			2023627149	021815C
00312658A	201509LO	205	150	15	2715	2250	204	J20182462			2023627149	021815C
00312658A	201509LO	206	150	15	2710	2250	204	J20182462			2023627149	021815C
00312658A	201509LO	207	150	15	2760	2250	204	J20182462			2023627149	021815C
00312658A	201509LO	208	150	15	2760	2250	204	J20182462			2023626303	021815C
00312658A	201509LO	209	150	15	2775	2250	204	J20182462			2023626303	021815C
00312658A	201509LO	210	150	15	2795	2250	204	J20182462			2023626303	021815C
00312658A	201509LO	211	150	15	2800	2250	204	2023734116			2023626303	021815C
00312658A	201509LO	212	150	15	2800	2250	204	2023734116			2023626303	021815C
00312658A	201509LO	213	150	15	2810	2250	204	2023734116			2023626303	021815C
00312658A	201509LO	214	150	15	2760	2250	204	2023734116			2023626303	021815C
00312658A	201509LO	215	150	15	2745	2250	204	2023734116			2023626303	021815C
00312658A	201509LO	216	150	15	2755	2250	204	2023734116			2023626303	021815D
00312658A	201509LO	217	150	15	2755	2250	204	2023734130			2023626303	021815D
00312658A	201509LO	219	150	15	2890	2250	219	2023734130			2023626303	021815D
00312658A	201509LO	220	150	15	2870	2250	219	2023734130			2023626303	021815D
00312658A	201509LO	221	150	15	2870	2250	219	2023734130			2023626303	021815D
00312658A	201509LO	222	150	15	2890	2250	219	2023734130			2023626303	021815D
00312658A	201509LO	223	150	15	2930	2250	219	2023734130			2023626303	021815D
00312658A	201509LO	224	150	15	2930	2250	219	2023734142			2023626303	021815D
00312658A	201509LO	225	150	15	2920	2250	219	2023734142			2023626303	021815D
00312658A	201509LO	226	150	15	2920	2250	219	2023734142			2023626303	021815D
00312658A	201509LO	227	150	15	2955	2250	219	2023734142			2023626303	021815D
00312658A	201509LO	228	150	15	2940	2250	219	2023734142			2023626303	021815D
00312658A	201509LO	229	150	15	2940	2250	219	2023734142			2023626303	021815D
00312658A	201509LO	230	150	15	2935	2250	219	2023734142			2023626303	021815D
00312658A	201509LO	231	150	15	2975	2250	219	2023755778			2023626303	021815D
00312658A	201509LO	232	150	15	2950	2250	219	2023755778			2023626303	021815D
00312658A	201509LO	233	150	15	2920	2250	219	2023755778			2023626303	021815D
00312658A	201509LO	234	150	15	2925	2250	219	2023755778			2023316698	021815D

Order	GCL Lot #	GCL Roll #	Length	Width	weight	sq ft	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
00312658A	201509LO	235	150	15	2940	2250	219	2023755778			2023316698	021815D
00312658A	201509LO	236	150	15	2940	2250	236	2023755778			2023316698	021815D
00312658A	201509LO	237	150	15	2945	2250	236	2023755778			2023316698	021815D
00312658A	201509LO	238	150	15	2920	2250	236	2023734114			2023316698	021815D
00312658A	201509LO	239	150	15	2905	2250	236	2023734114			2023316698	021815D
00312658A	201509LO	240	150	15	2905	2250	236	2023734114			2023316698	021815D
00312658A	201509LO	241	150	15	2930	2250	236	2023734114			2023316698	021815D
00312658A	201509LO	242	150	15	2920	2250	236	2023734114			2023316698	021815D
00312658A	201509LO	243	150	15	2920	2250	236	2023734114			2023316698	021815D
00312658A	201509LO	244	150	15	2930	2250	236	2023734117			2023316698	021815D
00312658A	201509LO	245	150	15	2905	2250	236	2023734117			2023316698	021815D
00312658A	201509LO	246	150	15	2910	2250	236	2023734117			2023316698	021815D
00312658A	201509LO	247	150	15	2850	2250	236	2023734117			2023316698	021815D
00312658A	201509LO	248	150	15	2910	2250	236	2023734117			2023316698	021815D
00312658A	201509LO	249	150	15	2890	2250	236	2023734117			2023316698	021815D
00312658A	201509LO	250	150	15	2855	2250	236	2023734117			2023316698	021815D
00312658A	201509LO	251	150	15	2880	2250	236	2023734103			2023316698	021815D
00312658A	201509LO	252	150	15	2900	2250	236	2023734103			2023316698	021815D
00312658A	201509LO	253	150	15	2880	2250	253	2023734103			2023316698	021815D
00312658A	201509LO	254	150	15	2880	2250	253	2023734103			2023316698	021815D
00312658A	201509LO	255	150	15	2855	2250	253	2023734103			2023316698	021815D
00312658A	201509LO	256	150	15	2870	2250	253	2023734103			2023631669	021815D
00312658A	201509LO	257	150	15	2855	2250	253	2023734103			2023631669	021815D
00312658A	201509LO	258	150	15	2890	2250	253	2023734103			2023631669	021815D
00312658A	201509LO	259	150	15	2890	2250	253	2023734103			2023631669	021815D
00312658A	201509LO	260	150	15	2870	2250	253	2023734103			2023631669	021815D
00312658A	201509LO	261	150	15	2870	2250	253	2023734103			2023631669	021815D
00312658A	201509LO	262	150	15	2900	2250	253	2023734103			2023631669	021815D
00312658A	201509LO	263	150	15	2900	2250	253	2023734103			2023631669	021815D
00312658A	201509LO	264	150	15	2890	2250	253	J20182473			2023631669	021815E
00312658A	201509LO	265	150	15	2890	2250	253	J20182473			2023631669	021815E
00312658A	201509LO	266	150	15	2900	2250	253	J20182473			2023631669	021815E
00312658A	201509LO	267	150	15	2900	2250	253	J20182473			2023631669	021815E
00312658A	201509LO	268	150	15	2900	2250	253	J20182473			2023631669	021815E
00312658A	201509LO	269	150	15	2875	2250	253	J20182473			2023631669	021815E
00312658A	201509LO	270	150	15	2910	2250	270	J20182473			2023631669	021815E
00312658A	201509LO	271	150	15	2905	2250	270	J20182473			2023631669	021815E
00312658A	201509LO	272	150	15	2905	2250	270	J20182473			2023631669	021815E

00312658A	201509LO	273	150	15	2865	2250	270	2023734118			2023631669	021815E
Order	**GCL Lot #**	**GCL Roll #**	**Length**	**Width**	**weight**	**sq ft**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
00312658A	201509LO	274	150	15	2890	2250	270	2023734118			2023631669	021815E
00312658A	201509LO	275	150	15	2880	2250	270	2023734118			2023631669	021815E
00312658A	201509LO	276	150	15	2880	2250	270	2023734118			2023631669	021815E
00312658A	201509LO	277	150	15	2905	2250	270	2023734118			2023631669	021815E
00312658A	201509LO	278	150	15	2905	2250	270	2023734118			2023631669	021815E
00312658A	201509LO	279	150	15	2905	2250	270	2023734118			2023599661	021815E
00312658A	201509LO	280	150	15	2910	2250	270	J20182461			2023599661	021815E
00312658A	201509LO	281	150	15	2900	2250	270	J20182461			2023599661	021815E
00312658A	201509LO	282	150	15	2940	2250	270	J20182461			2023599661	021815E
00312658A	201509LO	283	150	15	2890	2250	270	J20182461			2023599661	021815E
00312658A	201509LO	284	150	15	2910	2250	270	J20182461			2023599661	021815E
00312658A	201509LO	285	150	15	2920	2250	270	J20182461			2023599661	021815E
00312658A	201509LO	286	150	15	2890	2250	270	J20182461			2023599661	021815E
00312658A	201509LO	287	150	15	2915	2250	287	J20182461			2023599661	021815E
00312658A	201509LO	288	150	15	2935	2250	287	J20182461			2023599661	021815E
00312658A	201509LO	289	150	15	2960	2250	287	2023734105			2023599661	021815E
00312658A	201509LO	290	150	15	2930	2250	287	2023734105			2023599661	021815E
00312658A	201509LO	291	150	15	2935	2250	287	2023734105			2023599661	021815E
00312658A	201509LO	292	150	15	2935	2250	287	2023734105			2023599661	021815E
00312658A	201509LO	293	150	15	2915	2250	287	2023734105			2023599661	021815E
00312658A	201509LO	294	150	15	2915	2250	287	2023734105			2023599661	021815E
00312658A	201509LO	295	150	15	2900	2250	287	2023734105			2023599661	021815E
00312658A	201509LO	296	150	15	2900	2250	287	2023734097			2023599661	021815E
00312658A	201509LO	297	150	15	2905	2250	287	2023734097			2023599661	021815E
00312658A	201509LO	298	150	15	2890	2250	287	2023734097			2023599661	021815E
00312658A	201509LO	299	150	15	2940	2250	287	2023734097			2023599661	021815E
00312658A	201509LO	300	150	15	2880	2250	287	2023734097			2023599661	021815E
00312658A	201509LO	301	150	15	2875	2250	287	2023734097			2023599661	021815E
00312658A	201509LO	302	150	15	2895	2250	287	2023734097			2023599661	021815E
00312658A	201509LO	303	150	15	2895	2250	287	2023755779			2023599661	021815E
00312658A	201509LO	304	150	15	2900	2250	304	2023755779			2023599661	021815E
00312658A	201509LO	305	150	15	2890	2250	304	2023755779			2023319306	021815E
00312658A	201509LO	306	150	15	2890	2250	304	2023755779			2023319306	021815E
00312658A	201509LO	307	150	15	2885	2250	304	2023755779			2023319306	021815E
00312658A	201509LO	308	150	15	2895	2250	304	2023755779			2023319306	021815E
00312658A	201509LO	309	150	15	2875	2250	304	2023734106			2023319306	021815F
00312658A	201509LO	310	150	15	2870	2250	304	2023734106			2023319306	021815F

00312658A	201509LO	311	150	15	2875	2250	304	2023734106			2023319306	021815F
00312658A	201509LO	312	150	15	2850	2250	304	2023734106			2023319306	021815F
Order	**GCL Lot #**	**GCL Roll #**	**Length**	**Width**	**weight**	**sq ft**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
00312658A	201509LO	313	150	15	2870	2250	304	2023734106			2023319306	021815F
00312658A	201509LO	314	150	15	2820	2250	304	2023734106			2023319306	021815F
00312658A	201509LO	315	150	15	2855	2250	304	2023734106			2023319306	021815F
00312658A	201509LO	316	150	15	2835	2250	304	2023734127			2023319306	021815F
00312658A	201509LO	317	150	15	2880	2250	304	2023734127			2023319306	021815F
00312658A	201509LO	318	150	15	2845	2250	304	2023734127			2023319306	021815F
00312658A	201509LO	319	150	15	2845	2250	304	2023734127			2023319306	021815F
00312658A	201509LO	320	150	15	2855	2250	304	2023734127			2023319306	021815F
00312658A	201509LO	321	150	15	2835	2250	321	2023734127			2023319306	021815F
00312658A	201509LO	322	150	15	2820	2250	321	2023734127			2023319306	021815F
00312658A	201509LO	323	150	15	2850	2250	321	J20182460			2023319306	021815F
00312658A	201509LO	324	150	15	2880	2250	321	J20182460			2023319306	021815F
00312658A	201509LO	325	150	15	2880	2250	321	J20182460			2023319306	021815F
00312658A	201509LO	326	150	15	2860	2250	321	J20182460			2023319306	021815F
00312658A	201509LO	327	150	15	2910	2250	321	J20182460			2023319306	021815F
00312658A	201509LO	328	150	15	2880	2250	321	J20182460			2023319306	021815F
00312658A	201509LO	329	150	15	2890	2250	321	J20182460			2023610202	021815F
00312658A	201509LO	330	150	15	2850	2250	321	J20182460			2023610202	021815F
00312658A	201509LO	331	150	15	2855	2250	321	J20182460			2023610202	021815F
00312658A	201509LO	332	150	15	2880	2250	321	J20182466			2023610202	021815F
00312658A	201509LO	333	150	15	2885	2250	321	J20182466			2023610202	021815F
00312658A	201509LO	334	150	15	2885	2250	321	J20182466			2023610202	021815F
00312658A	201509LO	335	150	15	2875	2250	321	J20182466			2023610202	021815F
00312658A	201509LO	336	150	15	2870	2250	321	J20182466			2023610202	021815F
00312658A	201509LO	337	150	15	2840	2250	321	J20182466			2023610202	021815F
00312658A	201509LO	338	150	15	2840	2250	338	J20182466			2023610202	021815F
00312658A	201509LO	339	150	15	2840	2250	338	J20182466			2023610202	021815F
00312658A	201509LO	340	150	15	2820	2250	338	J20182466			2023610202	021815F
00312658A	201509LO	341	150	15	2820	2250	338	J20182476			2023610202	021815F
00312658A	201509LO	342	150	15	2810	2250	338	J20182476			2023610202	021815F
00312658A	201509LO	343	150	15	2810	2250	338	J20182476			2023610202	021815F
00312658A	201509LO	344	150	15	2820	2250	338	J20182476			2023610202	021815F
00312658A	201509LO	345	150	15	2815	2250	338	J20182476			2023610202	021815F
00312658A	201509LO	346	150	15	2815	2250	338	J20182476			2023610202	021815F
00312658A	201509LO	347	150	15	2760	2250	347	J20182476			2023610202	021815F
00312658A	201509LO	348	150	15	2775	2250	347	J20182476			2023610202	021815F

00312658A	201509LO	349	150	15	2775	2250	347	J20182476			2023610202	021815F
00312658A	201509LO	350	150	15	2785	2250	347	2023770167			2023610202	021815F
00312658A	201509LO	351	150	15	2815	2250	347	2023770167			2023610202	021815F
Order	**GCL Lot #**	**GCL Roll #**	**Length**	**Width**	**weight**	**sq ft**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
00312658A	201509LO	352	150	15	2830	2250	347	2023770167			2023610202	021815F
00312658A	201509LO	353	150	15	2875	2250	347	2023770167			2023610202	021815F
00312658A	201509LO	354	150	15	2875	2250	347	2023770167			2023610202	022415A
00312658A	201509LO	355	150	15	2960	2250	347	2023770167			2023599677	022415A
00312658A	201509LO	356	150	15	2950	2250	347	2023770167			2023599677	022415A
00312658A	201509LO	357	150	15	2975	2250	347	J20182456			2023599677	022415A
00312658A	201509LO	358	150	15	2950	2250	347	J20182456			2023599677	022415A
00312658A	201509LO	359	150	15	2965	2250	347	J20182456			2023599677	022415A
00312658A	201509LO	360	150	15	2890	2250	347	J20182456			2023599677	022415A
00312658A	201509LO	361	150	15	2910	2250	347	J20182456			2023599677	022415A
00312658A	201509LO	362	150	15	2885	2250	347	J20182456			2023599677	022415A
00312658A	201509LO	363	150	15	2845	2250	347	J20182456			2023599677	022415A
00312658A	201509LO	364	150	15	2910	2250	364	J20182456			2023599677	022415A
00312658A	201509LO	365	150	15	2905	2250	364	J20182456			2023599677	022415A
00312658A	201509LO	366	150	15	2880	2250	364	2023734101			2023599677	022415A
00312658A	201509LO	367	150	15	2885	2250	364	2023734101			2023599677	022415A
00312658A	201509LO	368	150	15	2905	2250	364	2023734101			2023599677	022415A
00312658A	201509LO	369	150	15	2880	2250	364	2023734101			2023599677	022415A
00312658A	201509LO	370	150	15	2840	2250	364	2023734101			2023599677	022415A
00312658A	201509LO	371	150	15	2880	2250	364	2023734101			2023599677	022415A
00312658A	201509LO	372	150	15	2835	2250	364	2023734101			2023599677	022415A
00312658A	201509LO	373	150	15	2820	2250	364	2023734124			2023599677	022415A
00312658A	201509LO	374	150	15	2840	2250	364	2023734124			2023599677	022415A
00312658A	201509LO	375	150	15	2835	2250	364	2023734124			2023599677	022415A
00312658A	201509LO	376	150	15	2840	2250	364	2023734124			2023356392	022415A
00312658A	201509LO	377	150	15	2840	2250	364	2023734124			2023356392	022415A
00312658A	201509LO	378	150	15	2850	2250	364	2023734124			2023356392	022415A
031265801	201509LO	379	150	15	2825	2250	364	2023734124			2023356392	022415A
00312658A	201509LO	380	150	15	2855	2250	364	J20182444			2023356392	022415A
00312658A	201509LO	381	150	15	2850	2250	381	J20182444			2023356392	022415A
00312658A	201509LO	382	150	15	2860	2250	381	J20182444			2023356392	022415A
00312658A	201509LO	383	150	15	2850	2250	381	J20182444			2023356392	022415A
00312658A	201509LO	384	150	15	2815	2250	381	J20182444			2023356392	022415A
00312658A	201509LO	385	150	15	2840	2250	381	J20182444			2023356392	022415A
031265801	201509LO	386	150	15	2850	2250	381	J20182444			2023356392	022415A

00312658A	201509LO	387	150	15	2850	2250	381	J20182444				2023356392	022415A
031265801	201509LO	388	150	15	2855	2250	381	J20182444				2023356392	022415A
031265801	201509LO	389	150	15	2845	2250	381	J20182459				2023356392	022415A
00312658A	201509LO	390	150	15	2820	2250	381	J20182459				2023356392	022415A
Order	**GCL Lot #**	**GCL Roll #**	**Length**	**Width**	**weight**	**sq ft**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**		**Base Roll #**	**Clay Lot #**
00312658A	201509LO	391	150	15	2820	2250	381	J20182459				2023356392	022415A
00312658A	201509LO	392	150	15	2845	2250	381	J20182459				2023356392	022415A
00312658A	201509LO	393	150	15	2845	2250	381	J20182459				2023356392	022415A
00312658A	201509LO	394	150	15	2870	2250	381	J20182459				2023356392	022415A
00312658A	201509LO	395	150	15	2870	2250	381	J20182459				2023356392	022415A
00312658A	201509LO	396	150	15	2865	2250	381	J20182459				2023356392	022415A
00312658A	201509LO	397	150	15	2865	2250	381	J20182459				2023356392	022415A
031265801	201509LO	398	150	15	2855	2250	398	J20182455				2023356392	022415B
031265801	201509LO	399	150	15	2855	2250	398	J20182455				2023356392	022415B
031265801	201509LO	400	150	15	2790	2250	398	J20182455				2023356392	022415B
031265801	201509LO	401	150	15	2765	2250	398	J20182455				2023356392	022415B
031265801	201509LO	402	150	15	2820	2250	398	J20182455				2023356392	022415B
00312658A	201509LO	403	150	15	2795	2250	398	J20182455				2023356392	022415B
00312658A	201509LO	404	150	15	2820	2250	398	J20182455				2023356392	022415B
00312658A	201509LO	405	150	15	2800	2250	398	J20182455				2023627147	022415B
00312658A	201509LO	406	150	15	2820	2250	398	J20182467				2023627147	022415B
00312658A	201509LO	407	150	15	2820	2250	398	J20182467				2023627147	022415B
00312658A	201509LO	408	150	15	2800	2250	398	J20182467				2023627147	022415B
00312658A	201509LO	409	150	15	2800	2250	398	J20182467				2023627147	022415B
031265806	201509LO	410	150	15	2775	2250	398	J20182467				2023627147	022415B
00312658A	201509LO	411	150	15	2755	2250	398	J20182467				2023627147	022415B
00312658A	201509LO	412	150	15	2845	2250	398	J20182467				2023627147	022415B
00312658A	201509LO	413	150	15	2780	2250	398	J20182467				2023627147	022415B
00312658A	201509LO	414	150	15	2780	2250	398	J20182467				2023627147	022415B
031265806	201509LO	415	150	15	2810	2250	415	J20182454				2023627147	022415B
031265806	201509LO	416	150	15	2820	2250	415	J20182454				2023627147	022415B
031265806	201509LO	417	150	15	2810	2250	415	J20182454				2023627147	022415B
031265806	201509LO	418	150	15	2855	2250	415	J20182454				2023627147	022415B
00312658A	201509LO	419	150	15	2850	2250	415	J20182454				2023627147	022415B
00312658A	201509LO	420	150	15	2815	2250	415	J20182454				2023627147	022415B
00312658A	201509LO	421	150	15	2820	2250	415	J20182454				2023627147	022415B
00312658A	201509LO	422	150	15	2875	2250	415	J20182454				2023627147	022415B
031265801	201509LO	423	150	15	2875	2250	415	J20182454				2023627147	022415B
00312658A	201509LO	424	150	15	2805	2250	415	J20182485				2023627147	022415B

00312658A	201509LO	425	150	15	2770	2250	415	J20182485			2023627147	022415B
031265806	201509LO	426	150	15	2830	2250	415	J20182485			2023627147	022415B
031265806	201509LO	427	150	15	2820	2250	415	J20182485			2023627062	022415C
031265806	201509LO	428	150	15	2815	2250	415	J20182485			2023627062	022415C
031265806	201509LO	429	150	15	2795	2250	415	J20182485			2023627062	022415C
Order	**GCL Lot #**	**GCL Roll #**	**Length**	**Width**	**weight**	**sq ft**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
031265806	201509LO	430	150	15	2860	2250	415	J20182485			2023627062	022415C
00312658A	201509LO	431	150	15	2865	2250	415	J20182485			2023627062	022415C
031265801	201509LO	432	150	15	2865	2250	432	J20182485			2023627062	022415C
031265801	201509LO	433	150	15	2865	2250	432	J20182486			2023627062	022415C
00312658A	201509LO	434	150	15	2795	2250	432	J20182486			2023627062	022415C
00312658A	201509LO	435	150	15	2810	2250	432	J20182486			2023627062	022415C
00312658A	201509LO	436	150	15	2830	2250	432	J20182486			2023627062	022415C
00312658A	201509LO	437	150	15	2810	2250	432	J20182486			2023627062	022415C
00312658A	201509LO	438	150	15	2810	2250	432	J20182486			2023627062	022415C
031265806	201509LO	439	150	15	2820	2250	432	J20182486			2023627062	022415C
031265806	201509LO	440	150	15	2820	2250	432	J20182486			2023627062	022415C
00312658A	201509LO	441	150	15	2820	2250	432	J20182486			2023627062	022415C
00312658A	201509LO	442	150	15	2740	2250	442	2023734131			2023627062	022415C
031265806	201509LO	443	150	15	2710	2250	442	2023734131			2023627062	022415C
031265806	201509LO	444	150	15	2720	2250	442	2023734131			2023627062	022415C
00312658A	201509LO	445	150	15	2775	2250	442	2023734131			2023627062	022415C
00312658A	201509LO	446	150	15	2745	2250	442	2023734131			2023627062	022415C
031265801	201509LO	447	150	15	2760	2250	442	2023734131			2023627062	022415C
031265801	201509LO	448	150	15	2805	2250	442	2023734131			2023518030	022415C
031265801	201509LO	449	150	15	2770	2250	442	2023734108			2023518030	022415C
031265806	201509LO	450	150	15	2770	2250	442	2023734108			2023518030	022415C
00312658A	201509LO	451	150	15	2810	2250	442	2023734108			2023518030	022415C
031265806	201509LO	452	150	15	2780	2250	442	2023734108			2023518030	022415C
031265806	201509LO	453	150	15	2775	2250	442	2023734108			2023518030	022415C
031265801	201509LO	454	150	15	2775	2250	442	2023734108			2023518030	022415C
						Total sq ft:	**562500**					
												Total Number of Rolls Certified: **250**

GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 000312658 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength 6496	Grab Strength	Grab 4632 Modified	Moisture	Peel 4632 Modified
		ASTM Test Method:	D 5993	D 6768	D 6496	D 6768	D4632*	D 4643	D4632*
		Required Value:	0.75 lb /sq ft Min	30 lbs/in MARV	3.5 lbs/in Min	Report	Report	35% Max	Report
LO-BENTOMAT ST	201509LO	204	0.83	77.2	5.6	308.9	308.9	30.2	30.4
LO-BENTOMAT ST	201509LO	219	0.83	32.8	6.9	131.3	131.3	30.9	41.5
LO-BENTOMAT ST	201509LO	236	0.91	52.5	5.0	210.1	210.1	29.2	29.4
LO-BENTOMAT ST	201509LO	253	0.91	67.1	6.8	268.4	268.4	30.3	35.7
LO-BENTOMAT ST	201509LO	270	0.90	68.1	8.0	272.2	272.2	29.3	41.8
LO-BENTOMAT ST	201509LO	287	0.94	78.8	7.0	315.2	315.2	27.8	35.9
LO-BENTOMAT ST	201509LO	304	0.90	77.9	8.7	311.4	311.4	28.2	47.4
LO-BENTOMAT ST	201509LO	321	0.93	92.6	10.9	370.2	370.2	29.4	55.7
LO-BENTOMAT ST	201509LO	338	0.89	90.2	7.3	360.7	360.7	29.8	37.7
LO-BENTOMAT ST	201509LO	347	0.88	90.3	7.0	361.0	361.0	29.3	38.0
LO-BENTOMAT ST	201509LO	364	0.94	89.9	5.4	359.7	359.7	27.3	29.7
LO-BENTOMAT ST	201509LO	381	0.93	84.6	6.3	338.4	338.4	28.1	32.4
LO-BENTOMAT ST	201509LO	398	0.94	33.1	4.9	132.5	132.5	26.8	30.4
LO-BENTOMAT ST	201509LO	415	0.88	45.3	6.0	181.4	181.4	29.8	36.3
LO-BENTOMAT ST	201509LO	432	0.91	49.4	6.2	197.6	197.6	28.4	34.7
LO-BENTOMAT ST	201509LO	442	0.88	60.2	10.1	240.7	240.7	27.4	54.6

modified ASTM D 4632 using 4 inch grips.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce package 000312658

has been tested by American Colloid Company and yielded the following test results.

Clay Lot #	Moist	Swell	Fluid Loss
ASTM Test Method:	D 2216	D 5890	D 5891
Required Value:	12% Max	24 ml/2g Min	18 ml Max
021815C	10.30	25.00	16.80
021815D	11.60	24.00	16.80
021815E	10.00	24.00	16.80
021815F	10.80	25.00	16.80
022415A	11.10	24.00	16.80
022415B	10.20	24.00	15.00
022415C	10.60	24.00	15.00

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 000312658 was manufactured with geotextiles which were tested with the following results.

BASE GEOTEXTILE

Material	Roll Number	Mass Area oz/yd2	Grab Strength lbs
PPX 82TEX	2023316698	3.3	152.8
PPX 82TEX	2023319306	3.4	143.1
PPX 82TEX	2023356392	3.4	137.6
PPX 82TEX	2023518030	3.3	163.7
PPX 82TEX	2023599661	3.3	170.3
PPX 82TEX	2023599677	3.3	148.1
PPX 82TEX	2023610202	3.3	171.0
PPX 82TEX	2023626303	3.4	172.5
PPX 82TEX	2023627062	3.4	176.5
PPX 82TEX	2023627147	3.3	158.9
PPX 82TEX	2023627149	3.3	158.9
PPX 82TEX	2023631669	3.2	162.0

COVER GEOTEXTILE

Material	Roll Number	Mass Area oz/yd2	Grab Strength lbs
PPX 650	2023734097	7.1	172.1
PPX 650	2023734101	7.2	195.3
PPX 650	2023734103	7.2	195.3
PPX 650	2023734105	6.9	152.6
PPX 650	2023734106	6.9	152.6
PPX 650	2023734108	6.9	152.6
PPX 650	2023734114	6.5	135.5
PPX 650	2023734116	6.6	145.6
PPX 650	2023734117	6.6	145.6
PPX 650	2023734118	6.6	145.6
PPX 650	2023734124	6.8	141.4
PPX 650	2023734127	7.0	100.4
PPX 650	2023734130	7.2	111.7
PPX 650	2023734131	7.2	111.7
PPX 650	2023734142	6.7	89.6
PPX 650	2023755778	6.2	145.5
PPX 650	2023755779	6.2	145.5
PPX 650	2023770167	6.9	97.4
TENCATE 650	J20182444	7.2	185.2
TENCATE 650	J20182454	6.3	208.0
TENCATE 650	J20182455	6.3	208.0
TENCATE 650	J20182456	6.3	208.0
TENCATE 650	J20182459	6.3	208.0
TENCATE 650	J20182460	6.9	202.4
TENCATE 650	J20182461	6.9	202.4
TENCATE 650	J20182462	6.9	202.4
TENCATE 650	J20182466	6.9	202.4
TENCATE 650	J20182467	6.9	202.4

TENCATE 650	J20182473	6.9	207.6
TENCATE 650	J20182476	6.9	207.6
TENCATE 650	J20182485	6.5	198.8
TENCATE 650	J20182486	6.5	198.8

Certifications from our suppliers are on file at our production facility.

An '*' or 'PT' indicates supplier certifications were unavailable prior to shipping so testing was performed at a CETCO lab.

March 4, 2015

Mail To:

Mr. Marat Goldenberg, P.E.
CETCO
2870 Forbs Avenue
Hoffman Estates, IL 60192

email: marat.goldenberg@cetco.com

Bill To:

<= Same

Dear Mr. Goldenberg

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED MQC**
TRI Job Reference Number:	E2392-45-08
Material(s) Tested:	Two Bentomat ST GCL
Test(s) Requested:	Index Flux (ASTM D5887, modified)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

John M. Allen, P.E.
Division Director
Geosynthetic Services Division
www.GeosyntheticTesting.com

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

GCL TEST RESULTS
TRI Client: CETCO
Project: JED MQC

Material: Bentomat ST GCL
TRI Log #: E2392-45-08

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Index Flux (ASTM D5887)												
Sample Identification: 380 Lot: 201509LO												
Index Flux (m^3/m^2/sec)		2.8E-09									**2.8E-09**	
Hydraulic Conductivity (cm/sec)		2.4E-09									**2.4E-09**	
Index Flux (ASTM D5887)												
Sample Identification: 424 Lot: 201509LO												
Index Flux (m^3/m^2/sec)		3.0E-09									**3.0E-09**	
Hydraulic Conductivity (cm/sec)		2.7E-09									**2.7E-09**	

MD Machine Direction TD Transverse Direction NA Not Available

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

March 3, 2015

Mail To:

Mr. Marat Goldenberg, P.E.
CETCO
2870 Forbs Avenue
Hoffman Estates, IL 60192

email: marat.goldenberg@cetco.com

Bill To:

<= Same

Dear Mr. Goldenberg

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED MQC**
TRI Job Reference Number:	E2392-45-06
Material(s) Tested:	Four Bentomat ST GCL
Test(s) Requested:	Index Flux (ASTM D5887, modified)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

John M. Allen, P.E.
Division Director
Geosynthetic Services Division
www.GeosyntheticTesting.com

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

GCL TEST RESULTS
TRI Client: CETCO
Project: JED MQC

Material: Bentomat 600CL
TRI Log #: E2392-45-06

PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	6	7	8	9	10	MEAN	STD. DEV.
Index Flux (ASTM D5887)												
Sample Identification: 204 Lot: 201509LO												
Index Flux (m^3/m^2/sec)		1.8E-09									1.8E-09	
Hydraulic Conductivity (cm/sec)		1.2E-09									1.2E-09	
Index Flux (ASTM D5887)												
Sample Identification: 248 Lot: 201509LO												
Index Flux (m^3/m^2/sec)		2.0E-09									2.0E-09	
Hydraulic Conductivity (cm/sec)		1.4E-09									1.4E-09	
Index Flux (ASTM D5887)												
Sample Identification: 292 Lot: 201509LO												
Index Flux (m^3/m^2/sec)		3.4E-09									3.4E-09	
Hydraulic Conductivity (cm/sec)		3.3E-09									3.3E-09	
Index Flux (ASTM D5887)												
Sample Identification: 336 Lot: 201509LO												
Index Flux (m^3/m^2/sec)		2.2E-09									2.2E-09	
Hydraulic Conductivity (cm/sec)		1.5E-09									1.5E-09	

MD Machine Direction TD Transverse Direction NA Not Available

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

Section 2
HDPE Geomembrane

agru america quality control dept

cust: IESI
PO#: CELL11 JED lf Cell 11 (Prog Waste)
Dest: St Cloud, FL

doc 27934

1 roll 40 HD micro (710) (cut into 3 pcs)
97 rolls 60 HD micro (505)

English Dimensions

roll #	wid	len	area	check weld rod qty (if ordered)	wgt		resin lot #
				WE WRAP & SEND 100k / lot 1ft conf + 2x 2ft fric TRI CALI UPS Ground 71Y048 (Brantley)			
G14A347078	23	710	16,330	40HD micro 1 (cut into 3 pcs)	3781		H7140955
G15F081010	23	505	11,615	60HD micro 97tot 1	3622	1 ft conf	HEN820500
G15F081011	23	505	11,615	60HD micro 97tot 2	3660	2 x 2ft fric	HEN820500
G15F081012	23	505	11,615	60HD micro 97tot 3	3658		HEN820500
G15F081013	23	505	11,615	60HD micro 97tot 4	3662		HEN820500
G15F082014	23	505	11,615	60HD micro 97tot 5	3760		HEN820500
G15F082015	23	505	11,615	60HD micro 97tot 6	3758		HEN820500
G15F082016	23	505	11,615	60HD micro 97tot 7	3764		HEN820500
G15F082017	23	505	11,615	60HD micro 97tot 8	3768		HEN820500
G15F082018	23	505	11,615	60HD micro 97tot 9	3770	1 ft conf	HEN820500
G15F082019	23	505	11,615	60HD micro 97tot 10	3764		HEN820500
G15F082020	23	505	11,615	60HD micro 97tot 11	3774		HEN820500
G15F082021	23	505	11,615	60HD micro 97tot 12	3764		HEN820500
G15F082022	23	505	11,615	60HD micro 97tot 13	3770		HEN820500
G15F082023	23	505	11,615	60HD micro 97tot 14	3768		HEN820500
G15F082024	23	505	11,615	60HD micro 97tot 15	3772		HEN820500
G15F083027	23	505	11,615	60HD micro 97tot 16	3774		HEN820500
G15F083028	23	505	11,615	60HD micro 97tot 17	3770		HEN820500
G15F083029	23	505	11,615	60HD micro 97tot 18	3774	1 ft conf	HEN820500
G15F083030	23	505	11,615	60HD micro 97tot 19	3715		HEN820500
G15F083031	23	505	11,615	60HD micro 97tot 20	3730		HEN820500
G15F083032	23	505	11,615	60HD micro 97tot 21	3720		HEN820500
G15F083033	23	505	11,615	60HD micro 97tot 22	3710		HEN820500
G15F083034	23	505	11,615	60HD micro 97tot 23	3730		HEN820500
G15F083035	23	505	11,615	60HD micro 97tot 24	3705		HEN820500
G15F083036	23	505	11,615	60HD micro 97tot 25	3700		HEN820500
G15F083037	23	505	11,615	60HD micro 97tot 26	3682	1 ft conf	HEN820500
G15F083038	23	505	11,615	60HD micro 97tot 27	3714		HEN820500
G15F084039	23	505	11,615	60HD micro 97tot 28	3714		HEN820500
G15F084040	23	505	11,615	60HD micro 97tot 29	3716		HEN820500
G15F084041	23	505	11,615	60HD micro 97tot 30	3720		HEN820500
G15F084042	23	505	11,615	60HD micro 97tot 31	3714		HEN820500
G15F084043	23	505	11,615	60HD micro 97tot 32	3724		HEN820500
G15F084044	23	505	11,615	60HD micro 97tot 33	3726		HEN820500
G15F084045	23	505	11,615	60HD micro 97tot 34	3722		HEN820500
G15F084046	23	505	11,615	60HD micro 97tot 35	3712	1 ft conf	HEN820500
G15F084047	23	505	11,615	60HD micro 97tot 36	3716		HEN820500
G15F084048	23	505	11,615	60HD micro 97tot 37	3722		HEN820500
G15F084049	23	505	11,615	60HD micro 97tot 38	3724		HEN820500
G15F084050	23	505	11,615	60HD micro 97tot 39	3726		HEN820500
G15F084051	23	505	11,615	60HD micro 97tot 40	3726		HFA820810
G15F085052	23	505	11,615	60HD micro 97tot 41	3736		HFA820810
G15F085053	23	505	11,615	60HD micro 97tot 42	3730		HFA820810
G15F085054	23	505	11,615	60HD micro 97tot 43	3728		HFA820810
G15F085055	23	505	11,615	60HD micro 97tot 44	3720	1 ft conf	HFA820810
G15F085056	23	505	11,615	60HD micro 97tot 45	3737		HFA820810
G15F085057	23	505	11,615	60HD micro 97tot 46	3730		HFA820810
G15F085058	23	505	11,615	60HD micro 97tot 47	3722		HFA820810
G15F085059	23	505	11,615	60HD micro 97tot 48	3730		HFA820810
G15F085060	23	505	11,615	60HD micro 97tot 49	3718		HFA820810
G15F085061	23	505	11,615	60HD micro 97tot 50	3722		HFA820810
G15F085062	23	505	11,615	60HD micro 97tot 51	3728		HFA820810
G15F085063	23	505	11,615	60HD micro 97tot 52	3680	1 ft conf	HFA820810
G15F085064	23	505	11,615	60HD micro 97tot 53	3684		HFA820810
G15F086065	23	505	11,615	60HD micro 97tot 54	3690		HFA820810
G15F086066	23	505	11,615	60HD micro 97tot 55	3692		HFA820810
G15F086067	23	505	11,615	60HD micro 97tot 56	3692		HFA820810
G15F086068	23	505	11,615	60HD micro 97tot 57	3688		HFA820810
G15F086069	23	505	11,615	60HD micro 97tot 58	3680		HFA820810
G15F086070	23	505	11,615	60HD micro 97tot 59	3684		HFA820810
G15F086071	23	505	11,615	60HD micro 97tot 60	3674		HFA820810

cust: IESI

PO#: CELL11 JED lf Cell 11 (Prog Waste)

Dest: St Cloud, FL

doc 27934

1 roll 40 HD micro (710) (cut into 3 pcs)

97 rolls 60 HD micro (505)

English Dimensions

roll #	wid	len	area	check weld rod qty (if ordered)	wgt		resin lot #
				WE WRAP & SEND 100k / lot 1ft conf + 2x 2ft fric TRI CALI UPS Ground 71Y048 (Brantley)			
G15F086072	23	505	11,615	60HD micro 97tot 61	3666	1 ft conf	HFA820810
G15F086073	23	505	11,615	60HD micro 97tot 62	3668		HFA820810
G15F086074	23	505	11,615	60HD micro 97tot 63	3678		HFA820810
G15F086075	23	505	11,615	60HD micro 97tot 64	3672		HFA820810
G15F086076	23	505	11,615	60HD micro 97tot 65	3678		HFA820810
G15F086077	23	505	11,615	60HD micro 97tot 66	3720		HFA820810
G15F087078	23	505	11,615	60HD micro 97tot 67	3736		HFA820590
G15F087079	23	505	11,615	60HD micro 97tot 68	3738		HFA820590
G15F087080	23	505	11,615	60HD micro 97tot 69	3722	1 ft conf	HFA820590
G15F087081	23	505	11,615	60HD micro 97tot 70	3742		HFA820590
G15F087082	23	505	11,615	60HD micro 97tot 71	3744		HFA820590
G15F087084	23	505	11,615	60HD micro 97tot 72	3754		HFA820590
G15F087085	23	505	11,615	60HD micro 97tot 73	3756		HFA820590
G15F087086	23	505	11,615	60HD micro 97tot 74	3756		HFA820590
G15F087087	23	505	11,615	60HD micro 97tot 75	3756		HFA820590
G15F087088	23	505	11,615	60HD micro 97tot 76	3756		HFA820590
G15F087089	23	505	11,615	60HD micro 97tot 77	3754		HFA820590
G15F087090	23	505	11,615	60HD micro 97tot 78	3742	1 ft conf	HFA820590
G15F087091	23	505	11,615	60HD micro 97tot 79	3744		HFA820590
G15F091001	23	505	11,615	60HD micro 97tot 80	3744		HFA820590
G15F091002	23	505	11,615	60HD micro 97tot 81	3776		HFA820590
G15F091003	23	505	11,615	60HD micro 97tot 82	3754		HFA820590
G15F091004	23	505	11,615	60HD micro 97tot 83	3752		HFA820590
G15F091005	23	505	11,615	60HD micro 97tot 84	3656		HFA820590
G15F091006	23	505	11,615	60HD micro 97tot 85	3638		HFA820590
G15F091007	23	505	11,615	60HD micro 97tot 86	3656		HFA820590
G15F091008	23	505	11,615	60HD micro 97tot 87	3654	1 ft conf	HFA820590
G15F091009	23	505	11,615	60HD micro 97tot 88	3653		HFA820590
G15F091010	23	505	11,615	60HD micro 97tot 89	3657		HFA820590
G15F091011	23	505	11,615	60HD micro 97tot 90	3662		HFA820590
G15F091012	23	505	11,615	60HD micro 97tot 91	3650		HFA820590
G15F091013	23	505	11,615	60HD micro 97tot 92	3640		HFA820590
G15F091014	23	505	11,615	60HD micro 97tot 93	3642		HFA820590
G15F092015	23	505	11,615	60HD micro 97tot 94			HFA820590
G15F092016	23	505	11,615	60HD micro 97tot 95		1 ft conf	HFA820590
G15F092017	23	505	11,615	60HD micro 97tot 96			HFA820590
G15F092018	23	505	11,615	60HD micro 97tot 97			HFA820590

agru america
quality control dept.

quality certificate

ROLL # G14A347078 **LOT #** H7140955 **LINER TYPE** MICROSPIKE HD 40

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**.99** mm	**39** mil	Thickness	**1.02 mm**	**40 mil**
	MAX	**1.15** mm	**45** mil	Length	**216.411** m	**710** feet
	AVE	**1.06** mm	**42** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**185** minutes
Asperity ASTM D7466	Average	Top				**36** mil
		Bottom				**33** mil
Specific Gravity ASTM D792					g/cc	**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.23**
Carbon Black Content ASTM D4218	Range				%	**3.0**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**16** N/mm	**92** ppi		**2293** psi
		TD	**18** N/mm	**101** ppi		**2527** psi
	Average Strength @ Break	MD	**25** N/mm	**141** ppi		**3530** psi
		TD	**20** N/mm	**112** ppi		**2790** psi
Tensile Elongation ASTM D6693 Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**14**
	Average Elongation @Break	MD			%	**387**
		TD			%	**483**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.84**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**160.1** N		**36** lbs
		TD		**142.3** N		**32** lbs
Puncture Resistance FTMS 101 Method 2065 Modified	Average Peak Load					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**458.1** N		**103** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			300 Hrs		**PASS**

Customer IESI
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Destination St Cloud, FL

Date **8/24/2014**

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CoA Date: 08/06/2014

Certificate of Analysis

Shipped To: AGRU AMERICA INC:GEORGETOWN
500 GARRISON RD
GEORGETOWN SC 29440-9688
USA

Recipient: PALMER
Fax:

Delivery #: 88900280
PO #: 8542
Weight: 194500 LB
Ship Date: 08/06/2014
Package: BULK
Mode: Hopper Car
Car #: PSPX002424
Seal No: 324999

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: H7140955

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.23	g/10mi
HLMI Flow Rate	ASTM D1238	22	g/10mi
Density	D1505 or D4883	0.936	g/cm3
Pellet Count	P02.08.03	27	pel/g
Production Date		07/26/2014	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**

Troy Griffin
Quality Systems Coordinator

For CoA questions contact Customer Service Representative at +1-832-813-4806

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ROLL # G15F081010 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.45** mm	**57** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.60** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**137** ppi		**2288** psi
		TD	**27** N/mm	**152** ppi		**2526** psi
	Average Strength @ Break	MD	**35** N/mm	**198** ppi		**3298** psi
		TD	**33** N/mm	**188** ppi		**3130** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**18**
		TD			%	**17**
	Average Elongation @Break	MD			%	**498**
		TD			%	**611**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F081011 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.43** mm	**56** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.58** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.51** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**137** ppi		**2288** psi
		TD	**27** N/mm	**152** ppi		**2526** psi
	Average Strength @ Break	MD	**35** N/mm	**198** ppi		**3298** psi
		TD	**33** N/mm	**188** ppi		**3130** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**18**
		TD			%	**17**
	Average Elongation @Break	MD			%	**498**
		TD			%	**611**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F081012 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**23** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**137** ppi		**2288** psi
		TD	**27** N/mm	**152** ppi		**2526** psi
	Average Strength @ Break	MD	**35** N/mm	**198** ppi		**3298** psi
		TD	**33** N/mm	**188** ppi		**3130** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**18**
		TD			%	**17**
	Average Elongation @Break	MD			%	**498**
		TD			%	**611**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F081013 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**60** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**137** ppi		**2288** psi
		TD	**27** N/mm	**152** ppi		**2526** psi
	Average Strength @ Break	MD	**35** N/mm	**198** ppi		**3298** psi
		TD	**33** N/mm	**188** ppi		**3130** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**18**
		TD			%	**17**
	Average Elongation @Break	MD			%	**498**
		TD			%	**611**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F082014 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.52** mm	**60** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.68** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.59** mm	**63** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**137** ppi		**2288** psi
		TD	**27** N/mm	**152** ppi		**2526** psi
	Average Strength @ Break	MD	**35** N/mm	**198** ppi		**3298** psi
		TD	**33** N/mm	**188** ppi		**3130** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**18**
		TD			%	**17**
	Average Elongation @Break	MD			%	**498**
		TD			%	**611**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F082015 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2631** psi
		TD	**31** N/mm	**178** ppi		**2960** psi
	Average Strength @ Break	MD	**41** N/mm	**234** ppi		**3894** psi
		TD	**36** N/mm	**204** ppi		**3408** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**498**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F082016 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**60** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2631** psi
		TD	**31** N/mm	**178** ppi		**2960** psi
	Average Strength @ Break	MD	**41** N/mm	**234** ppi		**3894** psi
		TD	**36** N/mm	**204** ppi		**3408** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**498**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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Date **2/17/2015**

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ROLL # G15F082017 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.52** mm	**60** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.66** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2631** psi
		TD	**31** N/mm	**178** ppi		**2960** psi
	Average Strength @ Break	MD	**41** N/mm	**234** ppi		**3894** psi
		TD	**36** N/mm	**204** ppi		**3408** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**498**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F082018 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.56** mm	**62** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.69** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.62** mm	**64** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2631** psi
		TD	**31** N/mm	**178** ppi		**2960** psi
	Average Strength @ Break	MD	**41** N/mm	**234** ppi		**3894** psi
		TD	**36** N/mm	**204** ppi		**3408** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**498**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

Customer IESI
PO CELL11 JED lf Cell 11 (Prog Waste)
Destination St Cloud, FL

Date **2/17/2015**

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ROLL # G15F082019 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.61** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**28** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2631** psi
		TD	**31** N/mm	**178** ppi		**2960** psi
	Average Strength @ Break	MD	**41** N/mm	**234** ppi		**3894** psi
		TD	**36** N/mm	**204** ppi		**3408** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**498**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**244.6** N		**55** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F082020 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi		**2432** psi
		TD	**28** N/mm	**158** ppi		**2637** psi
	Average Strength @ Break	MD	**39** N/mm	**220** ppi		**3666** psi
		TD	**33** N/mm	**189** ppi		**3143** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**17**
		TD			%	**14**
	Average Elongation @Break	MD			%	**439**
		TD			%	**603**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**262.4** N		**59** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F082021 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**24** mil
		Bottom			**34** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi	**2432** psi
		TD	**28** N/mm	**158** ppi	**2637** psi
	Average Strength @ Break	MD	**39** N/mm	**220** ppi	**3666** psi
		TD	**33** N/mm	**189** ppi	**3143** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**17**
		TD		%	**14**
	Average Elongation @Break	MD		%	**439**
		TD		%	**603**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**262.4** N		**59** lbs
		TD	**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F082022 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**23** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi		**2432** psi
		TD	**28** N/mm	**158** ppi		**2637** psi
	Average Strength @ Break	MD	**39** N/mm	**220** ppi		**3666** psi
		TD	**33** N/mm	**189** ppi		**3143** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**17**
		TD			%	**14**
	Average Elongation @Break	MD			%	**439**
		TD			%	**603**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**262.4** N		**59** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F082023 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**23** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi		**2432** psi
		TD	**28** N/mm	**158** ppi		**2637** psi
	Average Strength @ Break	MD	**39** N/mm	**220** ppi		**3666** psi
		TD	**33** N/mm	**189** ppi		**3143** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**17**
		TD			%	**14**
	Average Elongation @Break	MD			%	**439**
		TD			%	**603**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**262.4** N		**59** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F082024 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.55** mm	**61** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.70** mm	**67** mil	Length	**153.926** m	**505** feet
	AVE	**1.61** mm	**63** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**23** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi		**2432** psi
		TD	**28** N/mm	**158** ppi		**2637** psi
	Average Strength @ Break	MD	**39** N/mm	**220** ppi		**3666** psi
		TD	**33** N/mm	**189** ppi		**3143** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**17**
		TD			%	**14**
	Average Elongation @Break	MD			%	**439**
		TD			%	**603**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**262.4** N		**59** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083027 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.61** mm	**63** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.80** mm	**71** mil	Length	**153.926** m	**505** feet
	AVE	**1.73** mm	**68** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**137** ppi		**2278** psi
		TD	**28** N/mm	**160** ppi		**2669** psi
	Average Strength @ Break	MD	**35** N/mm	**203** ppi		**3376** psi
		TD	**30** N/mm	**173** ppi		**2883** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**18**
		TD			%	**13**
	Average Elongation @Break	MD			%	**477**
		TD			%	**602**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**262.4** N		**59** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083028 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**23** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**137** ppi		**2278** psi
		TD	**28** N/mm	**160** ppi		**2669** psi
	Average Strength @ Break	MD	**35** N/mm	**203** ppi		**3376** psi
		TD	**30** N/mm	**173** ppi		**2883** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**18**
		TD			%	**13**
	Average Elongation @Break	MD			%	**477**
		TD			%	**602**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**262.4** N		**59** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083029 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.66** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**137** ppi		**2278** psi
		TD	**28** N/mm	**160** ppi		**2669** psi
	Average Strength @ Break	MD	**35** N/mm	**203** ppi		**3376** psi
		TD	**30** N/mm	**173** ppi		**2883** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**18**
		TD			%	**13**
	Average Elongation @Break	MD			%	**477**
		TD			%	**602**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**262.4** N		**59** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083030 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.46** mm	**57** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.57** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.52** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**27** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.3**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**154** ppi	**2562** psi
		TD	**28** N/mm	**159** ppi	**2651** psi
	Average Strength @ Break	MD	**37** N/mm	**209** ppi	**3489** psi
		TD	**34** N/mm	**196** ppi	**3268** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**19**
		TD		%	**17**
	Average Elongation @Break	MD		%	**476**
		TD		%	**588**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**258.0** N		**58** lbs
		TD	**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F083031 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.67** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**28** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**154** ppi		**2562** psi
		TD	**28** N/mm	**159** ppi		**2651** psi
	Average Strength @ Break	MD	**37** N/mm	**209** ppi		**3489** psi
		TD	**34** N/mm	**196** ppi		**3268** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**19**
		TD			%	**17**
	Average Elongation @Break	MD			%	**476**
		TD			%	**588**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083032 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.40** mm	**55** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.59** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.51** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**154** ppi		**2562** psi
		TD	**28** N/mm	**159** ppi		**2651** psi
	Average Strength @ Break	MD	**37** N/mm	**209** ppi		**3489** psi
		TD	**34** N/mm	**196** ppi		**3268** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**19**
		TD			%	**17**
	Average Elongation @Break	MD			%	**476**
		TD			%	**588**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083033 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.46** mm	**57** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.62** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**24** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**154** ppi	**2562** psi
		TD	**28** N/mm	**159** ppi	**2651** psi
	Average Strength @ Break	MD	**37** N/mm	**209** ppi	**3489** psi
		TD	**34** N/mm	**196** ppi	**3268** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**19**
		TD		%	**17**
	Average Elongation @Break	MD		%	**476**
		TD		%	**588**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**258.0** N		**58** lbs
		TD	**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F083034 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.47** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**154** ppi		**2562** psi
		TD	**28** N/mm	**159** ppi		**2651** psi
	Average Strength @ Break	MD	**37** N/mm	**209** ppi		**3489** psi
		TD	**34** N/mm	**196** ppi		**3268** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**19**
		TD			%	**17**
	Average Elongation @Break	MD			%	**476**
		TD			%	**588**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083035 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**150** ppi		**2498** psi
		TD	**29** N/mm	**165** ppi		**2748** psi
	Average Strength @ Break	MD	**36** N/mm	**207** ppi		**3442** psi
		TD	**34** N/mm	**192** ppi		**3195** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**15**
	Average Elongation @Break	MD			%	**439**
		TD			%	**573**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083036 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**150** ppi		**2498** psi
		TD	**29** N/mm	**165** ppi		**2748** psi
	Average Strength @ Break	MD	**36** N/mm	**207** ppi		**3442** psi
		TD	**34** N/mm	**192** ppi		**3195** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**15**
	Average Elongation @Break	MD			%	**439**
		TD			%	**573**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083037 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.57** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**32** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**150** ppi		**2498** psi
		TD	**29** N/mm	**165** ppi		**2748** psi
	Average Strength @ Break	MD	**36** N/mm	**207** ppi		**3442** psi
		TD	**34** N/mm	**192** ppi		**3195** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**15**
	Average Elongation @Break	MD			%	**439**
		TD			%	**573**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F083038 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.57** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.52** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**150** ppi		**2498** psi
		TD	**29** N/mm	**165** ppi		**2748** psi
	Average Strength @ Break	MD	**36** N/mm	**207** ppi		**3442** psi
		TD	**34** N/mm	**192** ppi		**3195** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**15**
	Average Elongation @Break	MD			%	**439**
		TD			%	**573**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**258.0** N		**58** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F084039 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.56** mm	**61** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**25** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.3**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**150** ppi	**2498** psi
		TD	**29** N/mm	**165** ppi	**2748** psi
	Average Strength @ Break	MD	**36** N/mm	**207** ppi	**3442** psi
		TD	**34** N/mm	**192** ppi	**3195** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**21**
		TD		%	**15**
	Average Elongation @Break	MD		%	**439**
		TD		%	**573**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**258.0** N		**58** lbs
		TD	**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**622.7** N		**140** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F084040 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.44** mm	**57** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.56** mm	**61** mil	Length	**153.926** m	**505** feet
	AVE	**1.52** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**25** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi	**2660** psi
		TD	**29** N/mm	**167** ppi	**2791** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi	**3635** psi
		TD	**32** N/mm	**183** ppi	**3045** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**16**
		TD		%	**14**
	Average Elongation @Break	MD		%	**440**
		TD		%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N	**53** lbs
		TD		**249.1** N	**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N	**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs	**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs	**ONGOING**

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ROLL # G15F084041 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.52** mm	**60** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.59** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**26** mil
		Bottom			**34** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi	**2660** psi
		TD	**29** N/mm	**167** ppi	**2791** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi	**3635** psi
		TD	**32** N/mm	**183** ppi	**3045** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**16**
		TD		%	**14**
	Average Elongation @Break	MD		%	**440**
		TD		%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**235.7** N		**53** lbs
		TD	**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F084042 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.55** mm	**61** mil	Length	**153.926** m	**505** feet
	AVE	**1.52** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**25** mil
		Bottom			**33** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi	**2660** psi
		TD	**29** N/mm	**167** ppi	**2791** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi	**3635** psi
		TD	**32** N/mm	**183** ppi	**3045** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**16**
		TD		%	**14**
	Average Elongation @Break	MD		%	**440**
		TD		%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**235.7** N		**53** lbs
		TD	**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F084043 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.60** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**27** mil
		Bottom			**34** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.3**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi	**2660** psi
		TD	**29** N/mm	**167** ppi	**2791** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi	**3635** psi
		TD	**32** N/mm	**183** ppi	**3045** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**16**
		TD		%	**14**
	Average Elongation @Break	MD		%	**440**
		TD		%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**235.7** N		**53** lbs
		TD	**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F084044 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.47** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.60** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**27** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.3**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi	**2660** psi
		TD	**29** N/mm	**167** ppi	**2791** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi	**3635** psi
		TD	**32** N/mm	**183** ppi	**3045** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**16**
		TD		%	**14**
	Average Elongation @Break	MD		%	**440**
		TD		%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**235.7** N		**53** lbs
		TD	**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F084045 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3517** psi
		TD	**31** N/mm	**175** ppi		**2910** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**15**
		TD			%	**15**
	Average Elongation @Break	MD			%	**452**
		TD			%	**534**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F084046 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3517** psi
		TD	**31** N/mm	**175** ppi		**2910** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**15**
		TD			%	**15**
	Average Elongation @Break	MD			%	**452**
		TD			%	**534**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F084047 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.45** mm	**57** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3517** psi
		TD	**31** N/mm	**175** ppi		**2910** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**15**
		TD			%	**15**
	Average Elongation @Break	MD			%	**452**
		TD			%	**534**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F084048 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.69** mm	**67** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3517** psi
		TD	**31** N/mm	**175** ppi		**2910** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**15**
		TD			%	**15**
	Average Elongation @Break	MD			%	**452**
		TD			%	**534**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F084049 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.57** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.54** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**198** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.28**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3517** psi
		TD	**31** N/mm	**175** ppi		**2910** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**15**
		TD			%	**15**
	Average Elongation @Break	MD			%	**452**
		TD			%	**534**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F084050 **LOT #** HEN820500 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.58** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**198** minutes
Asperity ASTM D7466	Average	Top			**24** mil
		Bottom			**33** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.944**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.28**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi	**2664** psi
		TD	**30** N/mm	**174** ppi	**2896** psi
	Average Strength @ Break	MD	**39** N/mm	**223** ppi	**3724** psi
		TD	**35** N/mm	**201** ppi	**3343** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**16**
		TD		%	**14**
	Average Elongation @Break	MD		%	**436**
		TD		%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.61**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N	**53** lbs
		TD		**249.1** N	**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N	**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs	**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs	**ONGOING**

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ROLL # G15F084051 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi		**2664** psi
		TD	**30** N/mm	**174** ppi		**2896** psi
	Average Strength @ Break	MD	**39** N/mm	**223** ppi		**3724** psi
		TD	**35** N/mm	**201** ppi		**3343** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**16**
		TD			%	**14**
	Average Elongation @Break	MD			%	**436**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085052 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.60** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi		**2664** psi
		TD	**30** N/mm	**174** ppi		**2896** psi
	Average Strength @ Break	MD	**39** N/mm	**223** ppi		**3724** psi
		TD	**35** N/mm	**201** ppi		**3343** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**16**
		TD			%	**14**
	Average Elongation @Break	MD			%	**436**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085053 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.61** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**23** mil
		Bottom				**32** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi		**2664** psi
		TD	**30** N/mm	**174** ppi		**2896** psi
	Average Strength @ Break	MD	**39** N/mm	**223** ppi		**3724** psi
		TD	**35** N/mm	**201** ppi		**3343** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**16**
		TD			%	**14**
	Average Elongation @Break	MD			%	**436**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085054 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.47** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**160** ppi		**2664** psi
		TD	**30** N/mm	**174** ppi		**2896** psi
	Average Strength @ Break	MD	**39** N/mm	**223** ppi		**3724** psi
		TD	**35** N/mm	**201** ppi		**3343** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**16**
		TD			%	**14**
	Average Elongation @Break	MD			%	**436**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085055 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.60** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.54** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**177** minutes
Asperity ASTM D7466	Average	Top			**25** mil
		Bottom			**33** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.25**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi	**2551** psi
		TD	**29** N/mm	**166** ppi	**2759** psi
	Average Strength @ Break	MD	**37** N/mm	**212** ppi	**3532** psi
		TD	**34** N/mm	**196** ppi	**3269** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**22**
		TD		%	**16**
	Average Elongation @Break	MD		%	**452**
		TD		%	**571**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**235.7** N		**53** lbs
		TD	**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F085056 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.38** mm	**54** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.70** mm	**67** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**166** ppi		**2759** psi
	Average Strength @ Break	MD	**37** N/mm	**212** ppi		**3532** psi
		TD	**34** N/mm	**196** ppi		**3269** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**452**
		TD			%	**571**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085057 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.62** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.54** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**166** ppi		**2759** psi
	Average Strength @ Break	MD	**37** N/mm	**212** ppi		**3532** psi
		TD	**34** N/mm	**196** ppi		**3269** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**452**
		TD			%	**571**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085058 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.43** mm	**56** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.69** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**32** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**166** ppi		**2759** psi
	Average Strength @ Break	MD	**37** N/mm	**212** ppi		**3532** psi
		TD	**34** N/mm	**196** ppi		**3269** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**452**
		TD			%	**571**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085059 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.68** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**21** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**153** ppi		**2551** psi
		TD	**29** N/mm	**166** ppi		**2759** psi
	Average Strength @ Break	MD	**37** N/mm	**212** ppi		**3532** psi
		TD	**34** N/mm	**196** ppi		**3269** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**452**
		TD			%	**571**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**235.7** N		**53** lbs
		TD		**249.1** N		**56** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**609.4** N		**137** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085060 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.47** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.69** mm	**67** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**22** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**135** ppi		**2249** psi
		TD	**27** N/mm	**154** ppi		**2559** psi
	Average Strength @ Break	MD	**36** N/mm	**205** ppi		**3421** psi
		TD	**33** N/mm	**191** ppi		**3181** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**448**
		TD			%	**596**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**218.0** N		**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N		**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F085061 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**21** mil
		Bottom				**31** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**135** ppi		**2249** psi
		TD	**27** N/mm	**154** ppi		**2559** psi
	Average Strength @ Break	MD	**36** N/mm	**205** ppi		**3421** psi
		TD	**33** N/mm	**191** ppi		**3181** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**448**
		TD			%	**596**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**218.0** N		**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N		**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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Date **2/20/2015**

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ROLL # G15F085062 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**177** minutes
Asperity ASTM D7466	Average	Top			**25** mil
		Bottom			**33** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.25**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**135** ppi	**2249** psi
		TD	**27** N/mm	**154** ppi	**2559** psi
	Average Strength @ Break	MD	**36** N/mm	**205** ppi	**3421** psi
		TD	**33** N/mm	**191** ppi	**3181** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**22**
		TD		%	**16**
	Average Elongation @Break	MD		%	**448**
		TD		%	**596**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N	**57** lbs
		TD		**218.0** N	**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N	**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs	**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs	**ONGOING**

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ROLL # G15F085063 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.52** mm	**60** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.57** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.54** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**177** minutes
Asperity ASTM D7466	Average	Top			**25** mil
		Bottom			**34** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.25**
Carbon Black Content ASTM D4218	Range			%	**2.3**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**135** ppi	**2249** psi
		TD	**27** N/mm	**154** ppi	**2559** psi
	Average Strength @ Break	MD	**36** N/mm	**205** ppi	**3421** psi
		TD	**33** N/mm	**191** ppi	**3181** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**22**
		TD		%	**16**
	Average Elongation @Break	MD		%	**448**
		TD		%	**596**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N	**57** lbs
		TD		**218.0** N	**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N	**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs	**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs	**ONGOING**

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ROLL # G15F085064 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.45** mm	**57** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.59** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**23** mil
		Bottom				**33** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**135** ppi		**2249** psi
		TD	**27** N/mm	**154** ppi		**2559** psi
	Average Strength @ Break	MD	**36** N/mm	**205** ppi		**3421** psi
		TD	**33** N/mm	**191** ppi		**3181** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**448**
		TD			%	**596**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**218.0** N		**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N		**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086065 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.59** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**32** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2629** psi
		TD	**30** N/mm	**171** ppi		**2849** psi
	Average Strength @ Break	MD	**39** N/mm	**221** ppi		**3689** psi
		TD	**34** N/mm	**195** ppi		**3254** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**15**
	Average Elongation @Break	MD			%	**432**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**218.0** N		**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N		**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086066 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.59** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2629** psi
		TD	**30** N/mm	**171** ppi		**2849** psi
	Average Strength @ Break	MD	**39** N/mm	**221** ppi		**3689** psi
		TD	**34** N/mm	**195** ppi		**3254** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**15**
	Average Elongation @Break	MD			%	**432**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**218.0** N		**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N		**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086067 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.58** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2629** psi
		TD	**30** N/mm	**171** ppi		**2849** psi
	Average Strength @ Break	MD	**39** N/mm	**221** ppi		**3689** psi
		TD	**34** N/mm	**195** ppi		**3254** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**15**
	Average Elongation @Break	MD			%	**432**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**218.0** N		**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N		**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086068 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.57** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**32** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi		**2629** psi
		TD	**30** N/mm	**171** ppi		**2849** psi
	Average Strength @ Break	MD	**39** N/mm	**221** ppi		**3689** psi
		TD	**34** N/mm	**195** ppi		**3254** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**15**
	Average Elongation @Break	MD			%	**432**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**218.0** N		**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N		**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086069 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.60** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**177** minutes
Asperity ASTM D7466	Average	Top			**26** mil
		Bottom			**38** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.25**
Carbon Black Content ASTM D4218	Range			%	**2.3**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**28** N/mm	**158** ppi	**2629** psi
		TD	**30** N/mm	**171** ppi	**2849** psi
	Average Strength @ Break	MD	**39** N/mm	**221** ppi	**3689** psi
		TD	**34** N/mm	**195** ppi	**3254** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**22**
		TD		%	**15**
	Average Elongation @Break	MD		%	**432**
		TD		%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**253.5** N		**57** lbs
		TD	**218.0** N		**49** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**604.9** N		**136** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F086070 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.61** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**38** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**148** ppi		**2469** psi
		TD	**28** N/mm	**162** ppi		**2696** psi
	Average Strength @ Break	MD	**39** N/mm	**222** ppi		**3698** psi
		TD	**33** N/mm	**187** ppi		**3109** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**473**
		TD			%	**547**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086071 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**148** ppi		**2469** psi
		TD	**28** N/mm	**162** ppi		**2696** psi
	Average Strength @ Break	MD	**39** N/mm	**222** ppi		**3698** psi
		TD	**33** N/mm	**187** ppi		**3109** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**473**
		TD			%	**547**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086072 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.61** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**148** ppi		**2469** psi
		TD	**28** N/mm	**162** ppi		**2696** psi
	Average Strength @ Break	MD	**39** N/mm	**222** ppi		**3698** psi
		TD	**33** N/mm	**187** ppi		**3109** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**473**
		TD			%	**547**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086073 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.59** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**148** ppi		**2469** psi
		TD	**28** N/mm	**162** ppi		**2696** psi
	Average Strength @ Break	MD	**39** N/mm	**222** ppi		**3698** psi
		TD	**33** N/mm	**187** ppi		**3109** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**473**
		TD			%	**547**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086074 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.62** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**148** ppi		**2469** psi
		TD	**28** N/mm	**162** ppi		**2696** psi
	Average Strength @ Break	MD	**39** N/mm	**222** ppi		**3698** psi
		TD	**33** N/mm	**187** ppi		**3109** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**473**
		TD			%	**547**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086075 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.1**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**23** N/mm	**133** ppi		**2223** psi
		TD	**26** N/mm	**147** ppi		**2456** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi		**3631** psi
		TD	**32** N/mm	**185** ppi		**3090** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**15**
	Average Elongation @Break	MD			%	**472**
		TD			%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086076 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.52** mm	**60** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.58** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**177** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.25**
Carbon Black Content ASTM D4218	Range			%		**2.1**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**23** N/mm	**133** ppi		**2223** psi
		TD	**26** N/mm	**147** ppi		**2456** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi		**3631** psi
		TD	**32** N/mm	**185** ppi		**3090** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**15**
	Average Elongation @Break	MD			%	**472**
		TD			%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F086077 **LOT #** HFA820810 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.57** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**177** minutes
Asperity ASTM D7466	Average	Top			**25** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.945**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.25**
Carbon Black Content ASTM D4218	Range			%	**2.1**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**23** N/mm	**133** ppi	**2223** psi
		TD	**26** N/mm	**147** ppi	**2456** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi	**3631** psi
		TD	**32** N/mm	**185** ppi	**3090** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**22**
		TD		%	**15**
	Average Elongation @Break	MD		%	**472**
		TD		%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.19**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**253.5** N		**57** lbs
		TD	**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F087078 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**23** N/mm	**133** ppi		**2223** psi
		TD	**26** N/mm	**147** ppi		**2456** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi		**3631** psi
		TD	**32** N/mm	**185** ppi		**3090** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**15**
	Average Elongation @Break	MD			%	**472**
		TD			%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087079 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.58** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**23** N/mm	**133** ppi		**2223** psi
		TD	**26** N/mm	**147** ppi		**2456** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi		**3631** psi
		TD	**32** N/mm	**185** ppi		**3090** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**15**
	Average Elongation @Break	MD			%	**472**
		TD			%	**587**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**618.3** N		**139** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087080 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.57** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.54** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**152** ppi		**2535** psi
		TD	**29** N/mm	**166** ppi		**2762** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi		**3639** psi
		TD	**30** N/mm	**174** ppi		**2898** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**458**
		TD			%	**574**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**231.3** N		**52** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087081 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.53** mm	**60** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.58** mm	**62** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**32** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**152** ppi		**2535** psi
		TD	**29** N/mm	**166** ppi		**2762** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi		**3639** psi
		TD	**30** N/mm	**174** ppi		**2898** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**458**
		TD			%	**574**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**231.3** N		**52** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087082 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.46** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**152** ppi		**2535** psi
		TD	**29** N/mm	**166** ppi		**2762** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi		**3639** psi
		TD	**30** N/mm	**174** ppi		**2898** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**20**
		TD			%	**15**
	Average Elongation @Break	MD			%	**458**
		TD			%	**574**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**231.3** N		**52** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087084 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.52** mm	**60** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**184** minutes
Asperity ASTM D7466	Average	Top			**24** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.33**
Carbon Black Content ASTM D4218	Range			%	**2.3**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**27** N/mm	**152** ppi	**2535** psi
		TD	**29** N/mm	**166** ppi	**2762** psi
	Average Strength @ Break	MD	**38** N/mm	**218** ppi	**3639** psi
		TD	**30** N/mm	**174** ppi	**2898** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**20**
		TD		%	**15**
	Average Elongation @Break	MD		%	**458**
		TD		%	**574**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**231.3** N		**52** lbs
		TD	**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F087085 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**60** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.62** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**184** minutes
Asperity ASTM D7466	Average	Top			**26** mil
		Bottom			**36** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.33**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**145** ppi	**2414** psi
		TD	**28** N/mm	**160** ppi	**2661** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi	**3521** psi
		TD	**32** N/mm	**180** ppi	**3003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**19**
		TD		%	**15**
	Average Elongation @Break	MD		%	**491**
		TD		%	**576**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**231.3** N		**52** lbs
		TD	**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F087086 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.51** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**38** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**145** ppi		**2414** psi
		TD	**28** N/mm	**160** ppi		**2661** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3521** psi
		TD	**32** N/mm	**180** ppi		**3003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**19**
		TD			%	**15**
	Average Elongation @Break	MD			%	**491**
		TD			%	**576**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**231.3** N		**52** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087087 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**145** ppi		**2414** psi
		TD	**28** N/mm	**160** ppi		**2661** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3521** psi
		TD	**32** N/mm	**180** ppi		**3003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**19**
		TD			%	**15**
	Average Elongation @Break	MD			%	**491**
		TD			%	**576**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**231.3** N		**52** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087088 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**25** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**145** ppi		**2414** psi
		TD	**28** N/mm	**160** ppi		**2661** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3521** psi
		TD	**32** N/mm	**180** ppi		**3003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**19**
		TD			%	**15**
	Average Elongation @Break	MD			%	**491**
		TD			%	**576**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**231.3** N		**52** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087089 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.54** mm	**61** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.67** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.59** mm	**63** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**145** ppi		**2414** psi
		TD	**28** N/mm	**160** ppi		**2661** psi
	Average Strength @ Break	MD	**37** N/mm	**211** ppi		**3521** psi
		TD	**32** N/mm	**180** ppi		**3003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**19**
		TD			%	**15**
	Average Elongation @Break	MD			%	**491**
		TD			%	**576**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**231.3** N		**52** lbs
		TD		**235.7** N		**53** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**587.1** N		**132** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087090 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.55** mm	**61** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.68** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.61** mm	**63** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**139** ppi		**2320** psi
		TD	**25** N/mm	**142** ppi		**2360** psi
	Average Strength @ Break	MD	**34** N/mm	**196** ppi		**3267** psi
		TD	**30** N/mm	**172** ppi		**2861** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**459**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**244.6** N		**55** lbs
		TD		**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F087091 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.67** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.59** mm	**63** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density				g/cc	**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range				%	**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**139** ppi		**2320** psi
		TD	**25** N/mm	**142** ppi		**2360** psi
	Average Strength @ Break	MD	**34** N/mm	**196** ppi		**3267** psi
		TD	**30** N/mm	**172** ppi		**2861** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**459**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**244.6** N		**55** lbs
		TD		**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091001 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.41** mm	**56** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**28** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**139** ppi		**2320** psi
		TD	**25** N/mm	**142** ppi		**2360** psi
	Average Strength @ Break	MD	**34** N/mm	**196** ppi		**3267** psi
		TD	**30** N/mm	**172** ppi		**2861** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**459**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**244.6** N		**55** lbs
		TD		**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091002 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.66** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**139** ppi		**2320** psi
		TD	**25** N/mm	**142** ppi		**2360** psi
	Average Strength @ Break	MD	**34** N/mm	**196** ppi		**3267** psi
		TD	**30** N/mm	**172** ppi		**2861** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**459**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**244.6** N		**55** lbs
		TD		**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091003 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.67** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.60** mm	**63** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**139** ppi		**2320** psi
		TD	**25** N/mm	**142** ppi		**2360** psi
	Average Strength @ Break	MD	**34** N/mm	**196** ppi		**3267** psi
		TD	**30** N/mm	**172** ppi		**2861** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**22**
		TD			%	**16**
	Average Elongation @Break	MD			%	**459**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**244.6** N		**55** lbs
		TD		**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091004 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi		**2428** psi
		TD	**27** N/mm	**153** ppi		**2557** psi
	Average Strength @ Break	MD	**37** N/mm	**210** ppi		**3504** psi
		TD	**34** N/mm	**192** ppi		**3207** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**15**
	Average Elongation @Break	MD			%	**463**
		TD			%	**589**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**244.6** N		**55** lbs
		TD		**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091005 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.52** mm	**60** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.67** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.60** mm	**63** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi		**2428** psi
		TD	**27** N/mm	**153** ppi		**2557** psi
	Average Strength @ Break	MD	**37** N/mm	**210** ppi		**3504** psi
		TD	**34** N/mm	**192** ppi		**3207** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**15**
	Average Elongation @Break	MD			%	**463**
		TD			%	**589**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**244.6** N		**55** lbs
		TD		**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091006 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.44** mm	**57** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.59** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.52** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi		**2428** psi
		TD	**27** N/mm	**153** ppi		**2557** psi
	Average Strength @ Break	MD	**37** N/mm	**210** ppi		**3504** psi
		TD	**34** N/mm	**192** ppi		**3207** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**15**
	Average Elongation @Break	MD			%	**463**
		TD			%	**589**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**244.6** N		**55** lbs
		TD		**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091007 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.59** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.53** mm	**60** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**184** minutes
Asperity ASTM D7466	Average	Top			**26** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.33**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi	**2428** psi
		TD	**27** N/mm	**153** ppi	**2557** psi
	Average Strength @ Break	MD	**37** N/mm	**210** ppi	**3504** psi
		TD	**34** N/mm	**192** ppi	**3207** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**21**
		TD		%	**15**
	Average Elongation @Break	MD		%	**463**
		TD		%	**589**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**244.6** N		**55** lbs
		TD	**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F091008 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.55** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**184** minutes
Asperity ASTM D7466	Average	Top			**26** mil
		Bottom			**35** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.33**
Carbon Black Content ASTM D4218	Range			%	**2.2**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**26** N/mm	**146** ppi	**2428** psi
		TD	**27** N/mm	**153** ppi	**2557** psi
	Average Strength @ Break	MD	**37** N/mm	**210** ppi	**3504** psi
		TD	**34** N/mm	**192** ppi	**3207** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**21**
		TD		%	**15**
	Average Elongation @Break	MD		%	**463**
		TD		%	**589**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**244.6** N		**55** lbs
		TD	**226.8** N		**51** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**600.5** N		**135** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F091009 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.60** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.54** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**35** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**144** ppi		**2398** psi
		TD	**25** N/mm	**144** ppi		**2404** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi		**3311** psi
		TD	**30** N/mm	**171** ppi		**2846** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**15**
		TD			%	**15**
	Average Elongation @Break	MD			%	**487**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**240.2** N		**54** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091010 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.60** mm	**63** mil	Length	**153.926** m	**505** feet
	AVE	**1.54** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895					**184** minutes
Asperity ASTM D7466	Average	Top			**26** mil
		Bottom			**36** mil
Specific Gravity ASTM D792	Average Density			g/cc	**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min				**.33**
Carbon Black Content ASTM D4218	Range			%	**2.3**
Carbon Black Dispersion ASTM D5596	Category				**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**144** ppi	**2398** psi
		TD	**25** N/mm	**144** ppi	**2404** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi	**3311** psi
		TD	**30** N/mm	**171** ppi	**2846** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**15**
		TD		%	**15**
	Average Elongation @Break	MD		%	**487**
		TD		%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**240.2** N		**54** lbs
		TD	**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

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ROLL # G15F091011 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**144** ppi		**2398** psi
		TD	**25** N/mm	**144** ppi		**2404** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi		**3311** psi
		TD	**30** N/mm	**171** ppi		**2846** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**15**
		TD			%	**15**
	Average Elongation @Break	MD			%	**487**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**240.2** N		**54** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

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ROLL # G15F091012 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.47** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.64** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.54** mm	**61** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895			**184** minutes
Asperity ASTM D7466	Average	Top	**28** mil
		Bottom	**34** mil
Specific Gravity ASTM D792	Average Density	g/cc	**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min		**.33**
Carbon Black Content ASTM D4218	Range	%	**2.3**
Carbon Black Dispersion ASTM D5596	Category		**10 in Category 1**

Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**144** ppi	**2398** psi
		TD	**25** N/mm	**144** ppi	**2404** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi	**3311** psi
		TD	**30** N/mm	**171** ppi	**2846** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD		%	**15**
		TD		%	**15**
	Average Elongation @Break	MD		%	**487**
		TD		%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change			%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD	**240.2** N		**54** lbs
		TD	**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified					**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load		**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures		1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%		500 Hrs		**ONGOING**

Customer IESI
PO CELL11 JED lf Cell 11 (Prog Waste)
Destination St Cloud, FL

Date **2/23/2015**

Signature

Quality Control Department

agru america
quality control dept.

quality certificate

ROLL # G15F091013 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.68** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**25** N/mm	**144** ppi		**2398** psi
		TD	**25** N/mm	**144** ppi		**2404** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi		**3311** psi
		TD	**30** N/mm	**171** ppi		**2846** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**15**
		TD			%	**15**
	Average Elongation @Break	MD			%	**487**
		TD			%	**564**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**240.2** N		**54** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

Customer IESI
PO CELL11 JED lf Cell 11 (Prog Waste)
Destination St Cloud, FL

Date **2/23/2015**

Signature

Quality Control Department

agru america
quality control dept.

quality certificate

ROLL # G15F091014 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.49** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.67** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.58** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**28** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**136** ppi		**2273** psi
		TD	**25** N/mm	**144** ppi		**2392** psi
	Average Strength @ Break	MD	**34** N/mm	**195** ppi		**3243** psi
		TD	**31** N/mm	**175** ppi		**2919** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**17**
	Average Elongation @Break	MD			%	**463**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**240.2** N		**54** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

Customer IESI
PO CELL11 JED lf Cell 11 (Prog Waste)
Destination St Cloud, FL

Date **2/23/2015**

Signature

Quality Control Department

agru america
quality control dept.

quality certificate

ROLL # G15F092015 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.67** mm	**66** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**26** mil
		Bottom				**37** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**136** ppi		**2273** psi
		TD	**25** N/mm	**144** ppi		**2392** psi
	Average Strength @ Break	MD	**34** N/mm	**195** ppi		**3243** psi
		TD	**31** N/mm	**175** ppi		**2919** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**17**
	Average Elongation @Break	MD			%	**463**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**240.2** N		**54** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

Customer IESI
PO CELL11 JED lf Cell 11 (Prog Waste)
Destination St Cloud, FL

Date **2/24/2015**

Signature

Quality Control Department

agru america
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ROLL # G15F092016 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52 mm**	**60 mil**
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.57** mm	**62** mil	Width	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.2**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**136** ppi		**2273** psi
		TD	**25** N/mm	**144** ppi		**2392** psi
	Average Strength @ Break	MD	**34** N/mm	**195** ppi		**3243** psi
		TD	**31** N/mm	**175** ppi		**2919** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**17**
	Average Elongation @Break	MD			%	**463**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**240.2** N		**54** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

Customer IESI
PO CELL11 JED lf Cell 11 (Prog Waste)
Destination St Cloud, FL

Date **2/24/2015**

Signature

Quality Control Department

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quality control dept.

quality certificate

ROLL # G15F092017 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.48** mm	**58** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.65** mm	**65** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**27** mil
		Bottom				**36** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**136** ppi		**2273** psi
		TD	**25** N/mm	**144** ppi		**2392** psi
	Average Strength @ Break	MD	**34** N/mm	**195** ppi		**3243** psi
		TD	**31** N/mm	**175** ppi		**2919** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**17**
	Average Elongation @Break	MD			%	**463**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**240.2** N		**54** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

Customer IESI
PO CELL11 JED lf Cell 11 (Prog Waste)
Destination St Cloud, FL

Date **2/24/2015**

Signature

Quality Control Department

agru america
quality control dept.

quality certificate

ROLL # G15F092018 **LOT #** HFA820590 **LINER TYPE** MICROSPIKE HD 60

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN	**1.50** mm	**59** mil	Thickness	**1.52** mm	**60** mil
	MAX	**1.63** mm	**64** mil	Length	**153.926** m	**505** feet
	AVE	**1.56** mm	**61** mil	Width	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**184** minutes
Asperity ASTM D7466	Average	Top				**24** mil
		Bottom				**34** mil
Specific Gravity ASTM D792	Average Density			g/cc		**.947**
MFI ASTM D1238 COND. E Grade **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.33**
Carbon Black Content ASTM D4218	Range			%		**2.3**
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**136** ppi		**2273** psi
		TD	**25** N/mm	**144** ppi		**2392** psi
	Average Strength @ Break	MD	**34** N/mm	**195** ppi		**3243** psi
		TD	**31** N/mm	**175** ppi		**2919** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			%	**21**
		TD			%	**17**
	Average Elongation @Break	MD			%	**463**
		TD			%	**580**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				%	**-0.74**
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**240.2** N		**54** lbs
		TD		**231.3** N		**52** lbs
Puncture Resistance FTMS 101 Method 2065 Modified						**CERTIFIED**
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**573.8** N		**129** lbs
ESCR ASTM D1693	Minumum Hrs w/o Failures			1500 Hrs		**CERTIFIED**
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs		**ONGOING**

Customer IESI
PO CELL11 JED lf Cell 11 (Prog Waste)
Destination St Cloud, FL

Date **2/24/2015**

Signature

Quality Control Department

CoA Date: 01/16/2015

Certificate of Analysis

Shipped To: AGRU AMERICA INC:GEORGETOWN
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

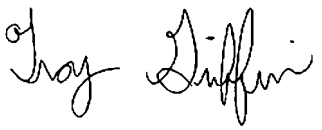
Delivery #: 88988284
PO #: 008968
Weight: 187700 LB
Ship Date: 01/16/2015
Package: BULK
Mode: Hopper Car
Car #: SHPX463937
Seal No: 15574

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: HEN820500

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.22	g/10mi
HLMI Flow Rate	ASTM D1238	19	g/10mi
Density	D1505 or D4883	0.937	g/cm3
Pellet Count	P02.08.03	29	pel/g
Production Date		12/10/2014	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**



Troy Griffin
Quality Systems Coordinator

For CoA questions contact Customer Service Representative at +1-832-813-4806

CoA Date: 02/03/2015

Certificate of Analysis

Shipped To: AGRU AMERICA INC:GEORGETOWN
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

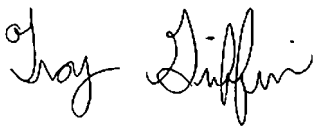
Delivery #: 88997288
PO #: 009053
Weight: 186200 LB
Ship Date: 02/03/2015
Package: BULK
Mode: Hopper Car
Car #: CHVX896877
Seal No: 15267

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: HFA820810

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.25	g/10mi
HLMI Flow Rate	ASTM D1238	20	g/10mi
Density	D1505 or D4883	0.937	g/cm3
Pellet Count	P02.08.03	30	pel/g
Production Date		01/22/2015	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**



Troy Griffin
Quality Systems Coordinator

For CoA questions contact Customer Service Representative at +1-832-813-4806

CoA Date: 02/05/2015

Certificate of Analysis

Shipped To: AGRU AMERICA INC:GEORGETOWN
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

Delivery #: 88998431
PO #: 009053
Weight: 182300 LB
Ship Date: 02/04/2015
Package: BULK
Mode: Hopper Car
Car #: CHVX889344
Seal No: 16108

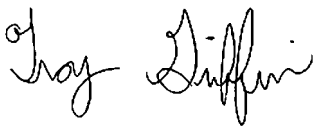
Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: HFA820590

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.33	g/10mi
HLMI Flow Rate	ASTM D1238	29	g/10mi
Density	D1505 or D4883	0.937	g/cm3
Pellet Count	P02.08.03	25	pel/g
Production Date		01/17/2015	

WAIVED BY G. NIEDERMOSER

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**



Troy Griffin
Quality Systems Coordinator

For CoA questions contact Customer Service Representative at +1-832-813-4806

Lili Cui, Ph.D., Geomembrane Technical Service & Applications Development
Room 154 PTC ■ Bartlesville, OK 74004■
918-661-1897 ■ cuil@cpchem.com ■ Fax: 918-662-2220 ■ www.cpchem.com

June 8, 2012

Grant Palmer
Agru America
500 Garrison Road
Georgetown, SC 29440

Dear Grant:

This letter is to report the final results of oven-aging and UV-aging tests (according to GRI-GM13 and GRI-GM17) on Agru America sheet samples that you provided to us in 2011. These tests were performed by CPChem's Materials Evaluation Laboratory in Bartlesville, OK. The tests were completed April 2012.

The GRI-GM13 (HDPE) and GRI-GM17 (LLDPE) durability tests were done according to the following procedures.

Test	Exposure	Method
HP-OIT	150 °C, 500 psi oxygen	D5885
Oven Aging	90 days, 85 °C	D5721
UV Aging	1600 UV hrs (Conditions were 20 hours UVA-340 at 75 °C followed by 4 hrs dark with condensation at 60 °C. Irradiance was 0.72 W/m^2 at 340 nm.)	D7238

Oven-Aging Results

Sample	Initial HP-OIT (min)	HP-OIT Value after Oven Aging (min)	% HP-OIT Retained	GRI-GM13 or GRI-GM17 % Retained Requirement
40 mil LLDPE Roll # 346550-11 from Marlex® 7104 Polyethylene Lot # CBC810430	659	572	**87**	60
60 mil HDPE Roll # 447108-11 from Marlex® K307 Polyethylene Lot # 71-1-1104	1136	994	**88**	80

UV-Aging Results

Sample	Initial HP-OIT (min)	HP-OIT Value after UV Aging (min)	% HP-OIT Retained	GRI-GM13 or GRI-GM17 % Retained Requirement
40 mil LLDPE Roll # 346550-11 from Marlex® 7104 Polyethylene Lot # CBC810430	659	449	**68**	35
60 mil HDPE Roll # 447108-11 from Marlex® K307 Polyethylene Lot # 71-1-1104	1136	924	**81**	50

According to these test results, the durability requirements are met.

If you have any questions, please call me at 918-661-1897.

Sincerely,

Lili Cui, Ph.D.
Geomembrane Technical Service & Applications Development

Any technical advice, recommendations, results, or analysis ("Information") contained herein, including, without limitation, Information as it may relate to the selection of a specific product ("Product") for your use and application, is given ***without warranty or guarantee*** *and is accepted at your sole risk. It is imperative that you test the Information (and Product, if applicable) to determine to your own satisfaction whether the Information (and Product, if applicable) are suitable for your intended use and application.* ***You expressly assume, and release Chevron Phillips Chemical Company, from all risk and liability, whether based in contract, tort or otherwise, in connection with the use of, or results obtained from, such Information (and Product, if applicable).***

Lili Cui, Polyethylene Tech Service and Applications Development
Room 154 PTC ■ Bartlesville, OK 74003■
918-977- 4685 ■ cuill@cpchem.com ■ Fax: 918-977-7599 ■ www.cpchem.com

July 10, 2013

Grant Palmer
Agru America
500 Garrison Road
Georgetown, SC 29440

Dear Grant:

Per your request for this information, there has been no change to the additive formulation specifications of Marlex® 7104 and Marlex® K307 polyethylene resins since GRI-GM13 and GRI-GM17 oven- and UV-aging testing was performed on Agru America sheet from these resins in December 2012.

If you have any questions, please call me at 918-977-4685.

Sincerely,

Lili Cui, Ph.D.
Polyethylene Tech Service and Applications Development

Any technical advice, recommendations, results, or analysis ("Information") contained herein, including, without limitation, Information as it may relate to the selection of a specific product ("Product") for your use and application, is given ***without warranty or guarantee*** *and is accepted at your sole risk. It is imperative that you test the Information (and Product, if applicable) to determine to your own satisfaction whether the Information (and Product, if applicable) are suitable for your intended use and application.* ***You expressly assume, and release Chevron Phillips Chemical Company, from all risk and liability, whether based in contract, tort or otherwise, in connection with the use of, or results obtained from, such Information (and Product, if applicable).***

24 February 2015

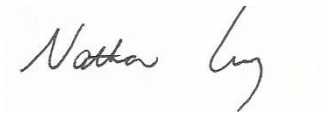
Allan Brantley
Brantley Engineering, LLC.

RE: IESI JED LF Cell 11
CERTIFICATION

Dear Mr. Brantley,

The weld rod supplied by Agru America, Inc. for the above referenced project will be made from the same type of resin as the geomembrane. It is compatible with the geomembrane and meets the project specifications.

Sincerely,



Nathan Ivy
Technical/CSR Coordinator
Agru America

Executive Offices: 500 Garrison Road, Georgetown, SC 29440 • 843 546-0600 • 800 321-1379 •
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Section 3
Drainage Geocomposite

March 10, 2015
IESI/Progressive Waste Solutions
1099 Miller Drive
Altamonte Springs, FL, 32701

Ref. : IESI JED Cell 11, FL
Customer P.O. # JED Cell 11
Product : TN 330-2-8

We certify that the TN 330-2-8 drainage geocomposite, meets the project requirements as stated in the specifications. The properties listed in this section are:

Property	Test Method	Unit	Required Value	Qualifier
Geonet[3]				
Thickness	ASTM D 5199	mil	200	Minimum
Carbon Black	ASTM D 4218	%	2.0 - 3.0	Range
Melt Flow	ASTM D 1238[2]	g/10 min	1.0	Maximum
Density	ASTM D 1505	g/cm^3	0.93	Minimum
Composite				
Ply Adhesion	ASTM D 7005	lb/in	1.0	MAV[6]
Transmissivity[1a]	ASTM D 4716	m^2/sec	7.5×10^{-4}	MAV
Transmissivity[1b]	ASTM D 4716	m^2/sec	1.3×10^{-3}	MAV
Geotextile[3 & 4]				
Fabric Weight	ASTM D 5261	oz/yd^2	8.0	MARV[5]
Grab Strength	ASTM D 4632	lbs	200	MARV
Tear Strength	ASTM D 4533	lbs	75	MARV
CBR Puncture	ASTM D 6241	lbs	500	MARV
Permittivity	ASTM D 4491	sec^{-1}	0.50	MARV
AOS	ASTM D 4751	US Sieve	70	MARV
UV Resistance	ASTM D 4355	%/hrs	70/500	MARV

Notes:

1a Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.015 and a confining pressure of 700 psf between ottawa sand & 60 mil textured HDPE geomembrane after 24 hours.

1b Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.015 and a confining pressure of 15,000 psf between ottawa sand & 60 mil textured HDPE geomembrane after 100 hours.

2 Condition 190/2.16

3 Geotextile and Geonet properties are prior to lamination.

4 Geotextile data is provided by the supplier.

5 MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.

6 Minimum average value.

Sincerely,

Rajesh Patel

Rajesh Patel
QA Manager

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : **TN 330-2-8**
Project : **IESI JED Cell 11, FL**

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
1	63241020001	63241020001 - N	6324.271	6324.220	1.23	3.22	
2	63241020002	63241020002 - N	6324.271	6324.220			
3	63241020003	63241020003 - N	6324.271	6324.220			
4	63241020004	63241020004 - N	6324.271	6324.220			
5	63241020005	63241020005 - N	6324.271	6324.220			
6	63241020006	63241020006 - N	6324.271	6324.220			
7	63241020007	63241020007 - N	6324.255	6324.277			
8	63241020008	63241020008 - N	6324.255	6324.277			
9	63241020009	63241020009 - N	6324.255	6324.277			
10	63241020010	63241020010 - N	6324.255	6324.277			
11	63241020011	63241020011 - N	6324.255	6324.277			
12	63241020012	63241020012 - N	6324.255	6324.277			
13	63241020013	63241020013 - N	6324.225	6324.268			
14	63241020014	63241020014 - N	6324.225	6324.268			
15	63241020015	63241020015 - N	6324.225	6324.268	1.61	3.31	
16	63241020016	63241020016 - N	6324.225	6324.268			
17	63241020017	63241020017 - N	6324.225	6324.268			
18	63241020018	63241020018 - N	6324.225	6324.268			
19	63241020019	63241020019 - N	6324.273	6324.253			
20	63241020020	63241020020 - N	6324.273	6324.253			
21	63241020021	63241020021 - N	6324.273	6324.253			
22	63241020022	63241020022 - N	6324.273	6324.253			
23	63241020023	63241020023 - N	6324.273	6324.253			
24	63241020024	63241020024 - N	6324.273	6324.253			
25	63241020025	63241020025 - N	6324.247	6324.230			
26	63241020026	63241020026 - N	6324.247	6324.230			
27	63241020027	63241020027 - N	6324.247	6324.230			

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Product : **TN 330-2-8**
Project : **IESI JED Cell 11, FL**

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020001 - N	GPLX 76990	0.9527	348	2.37	
63241020002 - N	GPLX 76990	0.9527			
63241020003 - N	GPLX 76990	0.9527			
63241020004 - N	GPLX 76990	0.9527			
63241020005 - N	GPLX 76990	0.9527			
63241020006 - N	GPLX 76990	0.9527			
63241020007 - N	GPLX 76990	0.9527			
63241020008 - N	GPLX 76990	0.9527			
63241020009 - N	GPLX 76990	0.9527			
63241020010 - N	GPLX 76990	0.9527			
63241020011 - N	GPLX 76990	0.9527			
63241020012 - N	GPLX 76990	0.9527			
63241020013 - N	GPLX 76990	0.9527			
63241020014 - N	GPLX 76990	0.9527			
63241020015 - N	GPLX 76990	0.9525	344	2.75	
63241020016 - N	GPLX 76990	0.9525			
63241020017 - N	GPLX 76990	0.9525			
63241020018 - N	GPLX 76990	0.9525			
63241020019 - N	GPLX 76990	0.9525			
63241020020 - N	GPLX 76990	0.9525			
63241020021 - N	GPLX 76990	0.9525			
63241020022 - N	GPLX 76990	0.9525			
63241020023 - N	GPLX 76990	0.9525			
63241020024 - N	GPLX 76990	0.9525			
63241020025 - N	GPLX 76990	0.9525			
63241020026 - N	GPLX 76990	0.9525			
63241020027 - N	GPLX 76990	0.9525			

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We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
28	63241020028	63241020028 - N	6324.247	6324.230			
29	63241020029	63241020029 - N	6324.247	6324.230			
30	63241020030	63241020030 - N	6324.247	6324.230	1.70	3.49	
31	63241020031	63241020031 - N	6324.227	6324.251			
32	63241020032	63241020032 - N	6324.227	6324.251			
33	63241020033	63241020033 - N	6324.227	6324.251			
34	63241020034	63241020034 - N	6324.227	6324.251			
35	63241020035	63241020035 - N	6324.227	6324.251			
36	63241020036	63241020036 - N	6324.227	6324.251			
37	63241020037	63241020037 - N	6324.208	6324.276			
38	63241020038	63241020038 - N	6324.208	6324.276			
39	63241020039	63241020039 - N	6324.208	6324.276			
40	63241020040	63241020040 - N	6324.208	6324.276			
41	63241020041	63241020041 - N	6324.208	6324.276			
42	63241020042	63241020042 - N	6324.208	6324.276			
43	63241020043	63241020043 - N	6324.228	6324.226			
44	63241020044	63241020044 - N	6324.228	6324.226			
45	63241020045	63241020045 - N	6324.228	6324.226	1.73	2.55	
46	63241020046	63241020046 - N	6324.228	6324.226			
47	63241020047	63241020047 - N	6324.228	6324.226			
48	63241020048	63241020048 - N	6324.228	6324.226			
49	63241020049	63241020049 - N	6324.278	6324.223			
50	63241020050	63241020050 - N	6324.278	6324.223			
51	63241020051	63241020051 - N	6324.278	6324.223			
52	63241020052	63241020052 - N	6324.278	6324.223			
53	63241020053	63241020053 - N	6324.278	6324.223			
54	63241020054	63241020054 - N	6324.278	6324.223			

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Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020028 - N	GPLX 76990	0.9525			
63241020029 - N	GPLX 76990	0.9525			
63241020030 - N	GPLX 76990	0.9528	349	2.26	
63241020031 - N	GPLX 76990	0.9528			
63241020032 - N	GPLX 76990	0.9528			
63241020033 - N	GPLX 76990	0.9528			
63241020034 - N	GPLX 76990	0.9528			
63241020035 - N	GPLX 76990	0.9528			
63241020036 - N	GPLX 76990	0.9528			
63241020037 - N	GPLX 76990	0.9528			
63241020038 - N	GPLX 76990	0.9528			
63241020039 - N	GPLX 76990	0.9528			
63241020040 - N	GPLX 76990	0.9528			
63241020041 - N	GPLX 76990	0.9528			
63241020042 - N	GPLX 76990	0.9528			
63241020043 - N	GPLX 76990	0.9528			
63241020044 - N	GPLX 76990	0.9528			
63241020045 - N	GPLX 76990	0.9524	342	2.71	
63241020046 - N	GPLX 76990	0.9524			
63241020047 - N	GPLX 76990	0.9524			
63241020048 - N	GPLX 76990	0.9524			
63241020049 - N	GPLX 76990	0.9524			
63241020050 - N	GPLX 76990	0.9524			
63241020051 - N	GPLX 76990	0.9524			
63241020052 - N	GPLX 76990	0.9524			
63241020053 - N	GPLX 76990	0.9524			
63241020054 - N	GPLX 76990	0.9524			

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Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
55	63241020055	63241020055 - N	6324.248	6324.232			
56	63241020056	63241020056 - N	6324.248	6324.232			
57	63241020057	63241020057 - N	6324.248	6324.232			
58	63241020058	63241020058 - N	6324.248	6324.232			
59	63241020059	63241020059 - N	6324.248	6324.232			
60	63241020060	63241020060 - N	6324.248	6324.232	1.33	2.10	
61	63241020061	63241020061 - N	6324.244	6324.206			
62	63241020062	63241020062 - N	6324.244	6324.206			
63	63241020063	63241020063 - N	6324.244	6324.206			
64	63241020064	63241020064 - N	6324.244	6324.206			
65	63241020065	63241020065 - N	6324.244	6324.206			
66	63241020066	63241020066 - N	6324.244	6324.206			
67	63241020067	63241020067 - N	6324.233	6324.207			
68	63241020068	63241020068 - N	6324.233	6324.207			
69	63241020069	63241020069 - N	6324.233	6324.207			
70	63241020070	63241020070 - N	6324.233	6324.207			
71	63241020071	63241020071 - N	6324.233	6324.207			
72	63241020072	63241020072 - N	6324.233	6324.207			
73	63241020073	63241020073 - N	6324.237	6324.269			
74	63241020074	63241020074 - N	6324.237	6324.269			
75	63241020075	63241020075 - N	6324.237	6324.269	1.30	2.19	
76	63241020076	63241020076 - N	6324.237	6324.269			
77	63241020077	63241020077 - N	6324.237	6324.269			
78	63241020078	63241020078 - N	6324.237	6324.269			
79	63241020079	63241020079 - N	6324.222	6324.205			
80	63241020080	63241020080 - N	6324.222	6324.205			
81	63241020081	63241020081 - N	6324.222	6324.205			

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We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020055 - N	GPLX 76990	0.9524			
63241020056 - N	GPLX 76990	0.9524			
63241020057 - N	GPLX 76990	0.9524			
63241020058 - N	GPLX 76990	0.9524			
63241020059 - N	GPLX 76990	0.9524			
63241020060 - N	GPLX 76990	0.9529	347	2.63	
63241020061 - N	GPLX 76990	0.9529			
63241020062 - N	GPLX 76990	0.9529			
63241020063 - N	GPLX 76990	0.9529			
63241020064 - N	GPLX 76990	0.9529			
63241020065 - N	GPLX 76990	0.9529			
63241020066 - N	GPLX 76990	0.9529			
63241020067 - N	GPLX 76990	0.9529			
63241020068 - N	GPLX 76990	0.9529			
63241020069 - N	GPLX 76990	0.9529			
63241020070 - N	GPLX 76990	0.9529			
63241020071 - N	GPLX 76990	0.9529			
63241020072 - N	GPLX 76990	0.9529			
63241020073 - N	GPLX 76990	0.9529			
63241020074 - N	GPLX 76990	0.9529			
63241020075 - N	GPLX 76990	0.9523	339	2.44	
63241020076 - N	GPLX 76990	0.9523			
63241020077 - N	GPLX 76990	0.9523			
63241020078 - N	GPLX 76990	0.9523			
63241020079 - N	GPLX 76990	0.9523			
63241020080 - N	GPLX 76990	0.9523			
63241020081 - N	GPLX 76990	0.9523			

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We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
82	63241020082	63241020082 - N	6324.222	6324.205			
83	63241020083	63241020083 - N	6324.222	6324.205			
84	63241020084	63241020084 - N	6324.222	6324.205			
85	63241020085	63241020085 - N	6324.216	6324.270			
86	63241020086	63241020086 - N	6324.216	6324.270			
87	63241020087	63241020087 - N	6324.216	6324.270			
88	63241020088	63241020088 - N	6324.216	6324.270			
89	63241020089	63241020089 - N	6324.216	6324.270			
90	63241020090	63241020090 - N	6324.216	6324.270	1.75	3.44	
91	63241020091	63241020091 - N	6324.242	6324.245			
92	63241020092	63241020092 - N	6324.242	6324.245			
93	63241020093	63241020093 - N	6324.242	6324.245			
94	63241020094	63241020094 - N	6324.242	6324.245			
95	63241020095	63241020095 - N	6324.242	6324.245			
96	63241020096	63241020096 - N	6324.242	6324.245			
97	63241020097	63241020097 - N	6324.231	6324.211			
98	63241020098	63241020098 - N	6324.231	6324.211			
99	63241020099	63241020099 - N	6324.231	6324.211			
100	63241020100	63241020100 - N	6324.231	6324.211			
101	63241020101	63241020101 - N	6324.231	6324.211			
102	63241020102	63241020102 - N	6324.231	6324.211			
103	63241020103	63241020103 - N	6324.267	6324.219			
104	63241020104	63241020104 - N	6324.267	6324.219			
105	63241020105	63241020105 - N	6324.267	6324.219	1.35	2.72	
106	63241020106	63241020106 - N	6324.267	6324.219			
107	63241020107	63241020107 - N	6324.267	6324.219			
108	63241020108	63241020108 - N	6324.267	6324.219			

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We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020082 - N	GPLX 76990	0.9523			
63241020083 - N	GPLX 76990	0.9523			
63241020084 - N	GPLX 76990	0.9523			
63241020085 - N	GPLX 76990	0.9523			
63241020086 - N	GPLX 76990	0.9523			
63241020087 - N	GPLX 76990	0.9523			
63241020088 - N	GPLX 76990	0.9523			
63241020089 - N	GPLX 76990	0.9523			
63241020090 - N	GPLX 76990	0.9530	345	2.23	
63241020091 - N	GPLX 76990	0.9530			
63241020092 - N	GPLX 76990	0.9530			
63241020093 - N	GPLX 76990	0.9530			
63241020094 - N	GPLX 76990	0.9530			
63241020095 - N	GPLX 76990	0.9530			
63241020096 - N	GPLX 76990	0.9530			
63241020097 - N	GPLX 76990	0.9530			
63241020098 - N	GPLX 76990	0.9530			
63241020099 - N	GPLX 76990	0.9530			
63241020100 - N	GPLX 76990	0.9530			
63241020101 - N	GPLX 76990	0.9530			
63241020102 - N	GPLX 76990	0.9530			
63241020103 - N	GPLX 76990	0.9530			
63241020104 - N	GPLX 76990	0.9530			
63241020105 - N	GPLX 76990	0.9526	341	2.32	
63241020106 - N	GPLX 76990	0.9526			
63241020107 - N	GPLX 76990	0.9526			
63241020108 - N	GPLX 76990	0.9526			

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We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
109	63241020109	63241020109 - N	6324.221	6324.246			
110	63241020110	63241020110 - N	6324.221	6324.246			
111	63241020111	63241020111 - N	6324.221	6324.246			
112	63241020112	63241020112 - N	6324.221	6324.246			
113	63241020113	63241020113 - N	6324.221	6324.246			
114	63241020114	63241020114 - N	6324.221	6324.246			
115	63241020115	63241020115 - N	6324.215	6324.203			
116	63241020116	63241020116 - N	6324.215	6324.203			
117	63241020117	63241020117 - N	6324.215	6324.203			
118	63241020118	63241020118 - N	6324.215	6324.203			
119	63241020119	63241020119 - N	6324.215	6324.203			
120	63241020120	63241020120 - N	6324.215	6324.203	1.83	3.56	
121	63241020121	63241020121 - N	6324.217	6324.272			
122	63241020122	63241020122 - N	6324.217	6324.272			
123	63241020123	63241020123 - N	6324.217	6324.272			
124	63241020124	63241020124 - N	6324.217	6324.272			
125	63241020125	63241020125 - N	6324.217	6324.272			
126	63241020126	63241020126 - N	6324.217	6324.272			
127	63241020127	63241020127 - N	6324.252	6324.224			
128	63241020128	63241020128 - N	6324.252	6324.224			
129	63241020129	63241020129 - N	6324.252	6324.224			
130	63241020130	63241020130 - N	6324.252	6324.224			
131	63241020131	63241020131 - N	6324.252	6324.224			
132	63241020132	63241020132 - N	6324.252	6324.224			
133	63241020133	63241020133 - N	6324.201	6324.213			
134	63241020134	63241020134 - N	6324.201	6324.213			
135	63241020135	63241020135 - N	6324.201	6324.213	1.85	2.38	

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Product : **TN 330-2-8**
Project : **IESI JED Cell 11, FL**

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020109 - N	GPLX 76990	0.9526			
63241020110 - N	GPLX 76990	0.9526			
63241020111 - N	GPLX 76990	0.9526			
63241020112 - N	GPLX 76990	0.9526			
63241020113 - N	GPLX 76990	0.9526			
63241020114 - N	GPLX 76990	0.9526			
63241020115 - N	GPLX 76990	0.9526			
63241020116 - N	GPLX 76990	0.9526			
63241020117 - N	GPLX 76990	0.9526			
63241020118 - N	GPLX 76990	0.9526			
63241020119 - N	GPLX 76990	0.9526			
63241020120 - N	GPLX 76990	0.9531	347	2.25	
63241020121 - N	GPLX 76990	0.9531			
63241020122 - N	GPLX 76990	0.9531			
63241020123 - N	GPLX 76990	0.9531			
63241020124 - N	GPLX 76990	0.9531			
63241020125 - N	GPLX 76990	0.9531			
63241020126 - N	GPLX 76990	0.9531			
63241020127 - N	GPLX 76990	0.9531			
63241020128 - N	GPLX 76990	0.9531			
63241020129 - N	GPLX 76990	0.9531			
63241020130 - N	GPLX 76990	0.9531			
63241020131 - N	GPLX 76990	0.9531			
63241020132 - N	GPLX 76990	0.9531			
63241020133 - N	GPLX 76990	0.9531			
63241020134 - N	GPLX 76990	0.9531			
63241020135 - N	GPLX 76990	0.9528	345	2.73	

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Product : TN 330-2-8
Project : IESI JED Cell 11, FL

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
136	63241020136	63241020136 - N	6324.201	6324.213			
137	63241020137	63241020137 - N	6324.201	6324.213			
138	63241020138	63241020138 - N	6324.201	6324.213			
139	63241020139	63241020139 - N	6324.236	6324.257			
140	63241020140	63241020140 - N	6324.236	6324.257			
141	63241020141	63241020141 - N	6324.236	6324.257			
142	63241020142	63241020142 - N	6324.236	6324.257			
143	63241020143	63241020143 - N	6324.236	6324.257			
144	63241020144	63241020144 - N	6324.236	6324.257			
145	63241020145	63241020145 - N	6324.262	6324.264			
146	63241020146	63241020146 - N	6324.262	6324.264			
147	63241020147	63241020147 - N	6324.262	6324.264			
148	63241020148	63241020148 - N	6324.262	6324.264			
149	63241020149	63241020149 - N	6324.262	6324.264			
150	63241020150	63241020150 - N	6324.262	6324.264	1.56	3.52	
151	63241020151	63241020151 - N	6324.209	6324.202			
152	63241020152	63241020152 - N	6324.209	6324.202			
153	63241020153	63241020153 - N	6324.209	6324.202			
154	63241020154	63241020154 - N	6324.209	6324.202			
155	63241020155	63241020155 - N	6324.209	6324.202			
156	63241020156	63241020156 - N	6324.209	6324.202			
157	63241020157	63241020157 - N	6324.238	6324.258			
158	63241020158	63241020158 - N	6324.238	6324.258			
159	63241020159	63241020159 - N	6324.238	6324.258			
160	63241020160	63241020160 - N	6324.238	6324.258			
161	63241020161	63241020161 - N	6324.238	6324.258			
162	63241020162	63241020162 - N	6324.238	6324.258			

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Product : **TN 330-2-8**
Project : **IESI JED Cell 11, FL**

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020136 - N	GPLX 76990	0.9528			
63241020137 - N	GPLX 76990	0.9528			
63241020138 - N	GPLX 76990	0.9528			
63241020139 - N	GPLX 76990	0.9528			
63241020140 - N	GPLX 76990	0.9528			
63241020141 - N	GPLX 76990	0.9528			
63241020142 - N	GPLX 76990	0.9528			
63241020143 - N	GPLX 76990	0.9528			
63241020144 - N	GPLX 76990	0.9528			
63241020145 - N	GPLX 76990	0.9528			
63241020146 - N	GPLX 76990	0.9528			
63241020147 - N	GPLX 76990	0.9528			
63241020148 - N	GPLX 76990	0.9528			
63241020149 - N	GPLX 76990	0.9528			
63241020150 - N	GPLX 76990	0.9525	348	2.76	
63241020151 - N	GPLX 76990	0.9525			
63241020152 - N	GPLX 76990	0.9525			
63241020153 - N	GPLX 76990	0.9525			
63241020154 - N	GPLX 76990	0.9525			
63241020155 - N	GPLX 76990	0.9525			
63241020156 - N	GPLX 76990	0.9525			
63241020157 - N	GPLX 76990	0.9525			
63241020158 - N	GPLX 76990	0.9525			
63241020159 - N	GPLX 76990	0.9525			
63241020160 - N	GPLX 76990	0.9525			
63241020161 - N	GPLX 76990	0.9525			
63241020162 - N	GPLX 76990	0.9525			

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Product : TN 330-2-8
Project : IESI JED Cell 11, FL

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
163	63241020163	63241020163 - N	6324.254	6324.265			
164	63241020164	63241020164 - N	6324.254	6324.265			
165	63241020165	63241020165 - N	6324.254	6324.265	1.53	3.18	
166	63241020166	63241020166 - N	6324.254	6324.265			
167	63241020167	63241020167 - N	6324.254	6324.265			
168	63241020168	63241020168 - N	6324.254	6324.265			
169	63241020169	63241020169 - N	6324.240	6324.212			
170	63241020170	63241020170 - N	6324.240	6324.212			
171	63241020171	63241020171 - N	6324.240	6324.212			
172	63241020172	63241020172 - N	6324.240	6324.212			
173	63241020173	63241020173 - N	6324.240	6324.212			
174	63241020174	63241020174 - N	6324.240	6324.212			
175	63241020175	63241020175 - N	6324.260	6324.241			
176	63241020176	63241020176 - N	6324.260	6324.241			
177	63241020177	63241020177 - N	6324.260	6324.241			
178	63241020178	63241020178 - N	6324.260	6324.241			
179	63241020179	63241020179 - N	6324.260	6324.241			
180	63241020180	63241020180 - N	6324.260	6324.241	1.81	2.01	
181	63241020181	63241020181 - N	6324.259	6324.234			
182	63241020182	63241020182 - N	6324.259	6324.234			
183	63241020183	63241020183 - N	6324.259	6324.234			
184	63241020184	63241020184 - N	6324.259	6324.234			
185	63241020185	63241020185 - N	6324.259	6324.234			
186	63241020186	63241020186 - N	6324.259	6324.234			
187	63241020187	63241020187 - N	6324.235	6324.204			
188	63241020188	63241020188 - N	6324.235	6324.204			
189	63241020189	63241020189 - N	6324.235	6324.204			

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Product : **TN 330-2-8**
Project : **IESI JED Cell 11, FL**

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020163 - N	GPLX 76990	0.9525			
63241020164 - N	GPLX 76990	0.9525			
63241020165 - N	GPLX 76990	0.9527	343	2.44	
63241020166 - N	GPLX 76990	0.9527			
63241020167 - N	GPLX 76990	0.9527			
63241020168 - N	GPLX 76990	0.9527			
63241020169 - N	GPLX 76990	0.9527			
63241020170 - N	GPLX 76990	0.9527			
63241020171 - N	GPLX 76990	0.9527			
63241020172 - N	GPLX 76990	0.9527			
63241020173 - N	GPLX 76990	0.9527			
63241020174 - N	GPLX 76990	0.9527			
63241020175 - N	GPLX 76990	0.9527			
63241020176 - N	GPLX 76990	0.9527			
63241020177 - N	GPLX 76990	0.9527			
63241020178 - N	GPLX 76990	0.9527			
63241020179 - N	GPLX 76990	0.9527			
63241020180 - N	GPLX 76990	0.9524	349	2.64	
63241020181 - N	GPLX 76990	0.9524			
63241020182 - N	GPLX 76990	0.9524			
63241020183 - N	GPLX 76990	0.9524			
63241020184 - N	GPLX 76990	0.9524			
63241020185 - N	GPLX 76990	0.9524			
63241020186 - N	GPLX 76990	0.9524			
63241020187 - N	GPLX 76990	0.9524			
63241020188 - N	GPLX 76990	0.9524			
63241020189 - N	GPLX 76990	0.9524			

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Product : TN 330-2-8
Project : IESI JED Cell 11, FL

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
190	63241020190	63241020190 - N	6324.235	6324.204			
191	63241020191	63241020191 - N	6324.235	6324.204			
192	63241020192	63241020192 - N	6324.235	6324.204			
193	63241020193	63241020193 - N	6324.243	6324.256			
194	63241020194	63241020194 - N	6324.243	6324.256			
195	63241020195	63241020195 - N	6324.243	6324.256	1.41	2.52	
196	63241020196	63241020196 - N	6324.243	6324.256			
197	63241020197	63241020197 - N	6324.243	6324.256			
198	63241020198	63241020198 - N	6324.243	6324.256			
199	63241020199	63241020199 - N	6324.218	6324.210			
200	63241020200	63241020200 - N	6324.218	6324.210			
201	63241020201	63241020201 - N	6324.218	6324.210			
202	63241020202	63241020202 - N	6324.218	6324.210			
203	63241020203	63241020203 - N	6324.218	6324.210			
204	63241020204	63241020204 - N	6324.218	6324.210			
205	63241020205	63241020205 - N	6324.263	6324.214			
206	63241020206	63241020206 - N	6324.263	6324.214			
207	63241020207	63241020207 - N	6324.263	6324.214			
208	63241020208	63241020208 - N	6324.263	6324.214			
209	63241020209	63241020209 - N	6324.263	6324.214			
210	63241020210	63241020210 - N	6324.263	6324.214	1.87	3.53	
211	63241020211	63241020211 - N	6324.239	6324.266			
212	63241020212	63241020212 - N	6324.239	6324.266			
213	63241020213	63241020213 - N	6324.239	6324.266			
214	63241020214	63241020214 - N	6324.239	6324.266			
215	63241020215	63241020215 - N	6324.239	6324.266			
216	63241020216	63241020216 - N	6324.239	6324.266			

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Product : TN 330-2-8
Project : IESI JED Cell 11, FL

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020190 - N	GPLX 76990	0.9524			
63241020191 - N	GPLX 76990	0.9524			
63241020192 - N	GPLX 76990	0.9524			
63241020193 - N	GPLX 76990	0.9524			
63241020194 - N	GPLX 76990	0.9524			
63241020195 - N	GPLX 76990	0.9528	344	2.58	
63241020196 - N	GPLX 76990	0.9528			
63241020197 - N	GPLX 76990	0.9528			
63241020198 - N	GPLX 76990	0.9528			
63241020199 - N	GPLX 76990	0.9528			
63241020200 - N	GPLX 76990	0.9528			
63241020201 - N	GPLX 76990	0.9528			
63241020202 - N	GPLX 76990	0.9528			
63241020203 - N	GPLX 76990	0.9528			
63241020204 - N	GPLX 76990	0.9528			
63241020205 - N	GPLX 76990	0.9528			
63241020206 - N	GPLX 76990	0.9528			
63241020207 - N	GPLX 76990	0.9528			
63241020208 - N	GPLX 76990	0.9528			
63241020209 - N	GPLX 76990	0.9528			
63241020210 - N	GPLX 76990	0.9531	341	2.59	
63241020211 - N	GPLX 76990	0.9531			
63241020212 - N	GPLX 76990	0.9531			
63241020213 - N	GPLX 76990	0.9531			
63241020214 - N	GPLX 76990	0.9531			
63241020215 - N	GPLX 76990	0.9531			
63241020216 - N	GPLX 76990	0.9531			

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Product : **TN 330-2-8**
Project : **IESI JED Cell 11, FL**

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
217	63241020217	63241020217 - N	6324.249	6324.274			
218	63241020218	63241020218 - N	6324.249	6324.274			
219	63241020219	63241020219 - N	6324.249	6324.274			
220	63241020220	63241020220 - N	6324.249	6324.274			
221	63241020221	63241020221 - N	6324.249	6324.274			
222	63241020222	63241020222 - N	6324.249	6324.274			
223	63241020223	63241020223 - N	6324.261	6324.250			
224	63241020224	63241020224 - N	6324.261	6324.250			
225	63241020225	63241020225 - N	6324.261	6324.250	1.81	2.81	
226	63241020226	63241020226 - N	6324.261	6324.250			
227	63241020227	63241020227 - N	6324.261	6324.250			
228	63241020228	63241020228 - N	6324.261	6324.250			
229	63241020229	63241020229 - N	6324.275	6324.229			
230	63241020230	63241020230 - N	6324.275	6324.229			

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Product : **TN 330-2-8**
Project : **IESI JED Cell 11, FL**

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241020217 - N	GPLX 76990	0.9531			
63241020218 - N	GPLX 76990	0.9531			
63241020219 - N	GPLX 76990	0.9531			
63241020220 - N	GPLX 76990	0.9531			
63241020221 - N	GPLX 76990	0.9531			
63241020222 - N	GPLX 76990	0.9531			
63241020223 - N	GPLX 76990	0.9531			
63241020224 - N	GPLX 76990	0.9531			
63241020225 - N	GPLX 76990	0.9524	346	2.45	
63241020226 - N	GPLX 76990	0.9524			
63241020227 - N	GPLX 76990	0.9524			
63241020228 - N	GPLX 76990	0.9524			
63241020229 - N	GPLX 76990	0.9524			
63241020230 - N	GPLX 76990	0.9524			

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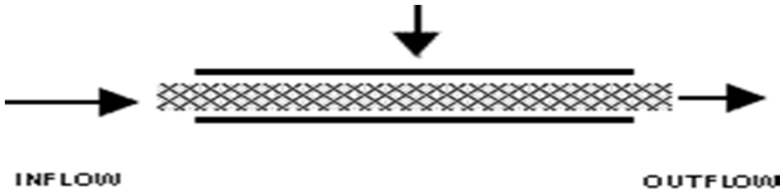
ASTM D 4716

Client:	IESI/Progressive Waste Solutions	**Job #**	6324
Project:	IESI JED Cell 11, FL		
Product:	TN 330-2-8		

Test Configuration:



Test Information:

Boundary Conditions:	Ottawa Sand Geocomposite 60 Mil Textured HDPE Geomembrane	**Normal Load:** **Gradient:** **Seating Time:** **Flow Direction:**	700 0.015 24 hours MD

Test Results:

Roll No.	Pressure, psf	Gradient	Transmissivity, m^2/sec
			24 hours
63241020001	700	0.015	2.08×10^{-3}
63241020040			2.33×10^{-3}
63241020080			2.43×10^{-3}
63241020120			2.36×10^{-3}
63241020160			2.22×10^{-3}
63241020200			2.38×10^{-3}

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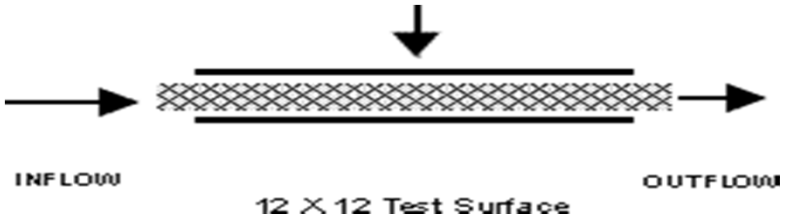
ASTM D 4716

Client:	IESI/Progressive Waste Solutions	**Job #**	6324
Project:	IESI JED Cell 11, FL		
Product:	TN 330-2-8		

Test Configuration:



Test Information:

Boundary Conditions:	Ottawa Sand Geocomposite 60 Mil Textured HDPE Geomembrane	**Normal Load:** **Gradient:** **Seating Time:** **Flow Direction:**	15000 0.015 100 hours MD

Test Results:

Roll No.	Pressure, psf	Gradient	Transmissivity, m^2/sec
			100 hours
63241020001	15000	0.015	1.86×10^{-3}
63241020040			1.73×10^{-3}
63241020080			2.02×10^{-3}
63241020120			1.87×10^{-3}
63241020160			1.79×10^{-3}
63241020200			1.7×10^{-3}

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POLYETHYLENE RESIN CERTIFICATION

Customer Name : IESI/Progressive Waste Solutions
Project Name : IESI JED Cell 11, FL
Geocomposite Manufacturer : SKAPS Industries
Geocomposite Production Plant : Commerce, GA
Geocomposite Brand Name : TN 330-2-8

We, the Geonet Manufacturer, hereby certify the following for the material delivered to the above referenced project:

Resin Supplier	Resin Production Plant	Resin Brand Name	Resin Lot Number	Property	Test Method	Units	Resin Supplier Value	Tested Value*
Trademark Plastics Corporation	Chevron, TX	HDPE	GPLX 76990	Density	ASTM D1505	gm / cc	0.9470	0.9478
				Melt flow Index	ASTM D1238[(a)]	gm / 10 min	0.27	0.30

(a) Condition 190/2.16
* Data from SKAPS Quality Control

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Product : **TN 330-2-8**
Project : **IESI JED Cell 11, FL**

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

GEOCOMP ROLL#	FABRIC ROLL#	WEIGHT oz/sq yd	MD TENSILE lbs.	XMD TENSILE lbs.	MD TRAP lbs.	XMD TRAP lbs.	CBR PUNCTURE lbs.	AOS us sieve	PERM-ITY sec^{-1}
63241020001	6324.271	8.58	229	240	99	119	678	80	1.38
	6324.220	8.43	235	240	101	117	699	80	1.39
63241020040	6324.208	8.23	233	245	97	103	687	80	1.39
	6324.276	8.44	234	242	95	105	652	80	1.38
63241020080	6324.222	8.43	235	240	101	117	699	80	1.39
	6324.205	8.23	233	245	97	103	687	80	1.39
63241020120	6324.215	8.36	229	235	105	109	688	80	1.39
	6324.203	8.12	228	239	103	112	674	80	1.39
63241020160	6324.238	8.40	230	236	98	118	668	80	1.36
	6324.258	8.35	227	232	95	104	697	80	1.36
63241020200	6324.218	8.36	229	235	105	109	688	80	1.39
	6324.210	8.34	227	231	99	107	685	80	1.39

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March 11, 2015
IESI/Progressive Waste Solutions
1099 Miller Drive
Altamonte Springs, FL, 32701

Ref. : IESI JED Cell 11, FL
Customer P.O. # JED Cell 11
Product : TN 270-2-6

We certify that the TN 270-2-6 drainage geocomposite, meets the project requirements as stated in the specifications. The properties listed in this section are:

Property	Test Method	Unit	Required Value	Qualifier
Geonet[3]				
Thickness	ASTM D 5199	mil	200	Minimum
Carbon Black	ASTM D 4218	%	2.0 - 3.0	Range
Melt Flow	ASTM D 1238[2]	g/10 min	1.0	Maximum
Density	ASTM D 1505	g/cm^3	0.93	Minimum
Composite				
Ply Adhesion	ASTM D 7005	lb/in	1.0	MAV[6]
Transmissivity[1a]	ASTM D 4716	m^2/sec	1.6 x 10^{-4}	MAV
Transmissivity[1b]	ASTM D 4716	m^2/sec	3.6 x 10^{-4}	MAV
Geotextile[3 & 4]				
Fabric Weight	ASTM D 5261	oz/yd^2	6.0	MARV[5]
Grab Strength	ASTM D 4632	lbs	160	MARV
Tear Strength	ASTM D 4533	lbs	65	MARV
CBR Puncture	ASTM D 6241	lbs	435	MARV
Permittivity	ASTM D 4491	sec^{-1}	0.50	MARV
AOS	ASTM D 4751	US Sieve	70	MARV
UV Resistance	ASTM D 4355	%/hrs	70/500	MARV

Notes:

1a Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.015 and a confining pressure of 700 psf between 60 mil textured HDPE geomembranes after 24 hours.

1b Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.015 and a confining pressure of 15,000 psf between 60 mil textured HDPE geomembranes after 100 hours.

2 Condition 190/2.16

3 Geotextile and Geonet properties are prior to lamination.

4 Geotextile data is provided by the supplier.

5 MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.

6 Minimum average value.

Sincerely,

Rajesh Patel

Rajesh Patel
QA Manager

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
1	63241010001	63241010001 - N	6324.049	6324.055	1.73	1.93	
2	63241010002	63241010002 - N	6324.049	6324.055			
3	63241010003	63241010003 - N	6324.049	6324.055			
4	63241010004	63241010004 - N	6324.049	6324.055			
5	63241010005	63241010005 - N	6324.049	6324.055			
6	63241010006	63241010006 - N	6324.049	6324.055			
7	63241010007	63241010007 - N	6324.049	6324.055			
8	63241010008	63241010008 - N	6324.045	6324.046			
9	63241010009	63241010009 - N	6324.045	6324.046			
10	63241010010	63241010010 - N	6324.045	6324.046			
11	63241010011	63241010011 - N	6324.045	6324.046			
12	63241010012	63241010012 - N	6324.045	6324.046			
13	63241010013	63241010013 - N	6324.045	6324.046			
14	63241010014	63241010014 - N	6324.045	6324.046			
15	63241010015	63241010015 - N	6324.011	6324.060	1.62	2.14	
16	63241010016	63241010016 - N	6324.011	6324.060			
17	63241010017	63241010017 - N	6324.011	6324.060			
18	63241010018	63241010018 - N	6324.011	6324.060			
19	63241010019	63241010019 - N	6324.011	6324.060			
20	63241010020	63241010020 - N	6324.011	6324.060			
21	63241010021	63241010021 - N	6324.011	6324.060			
22	63241010022	63241010022 - N	6324.001	6324.052			
23	63241010023	63241010023 - N	6324.001	6324.052			
24	63241010024	63241010024 - N	6324.001	6324.052			
25	63241010025	63241010025 - N	6324.001	6324.052			
26	63241010026	63241010026 - N	6324.001	6324.052			
27	63241010027	63241010027 - N	6324.001	6324.052			

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Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241010001 - N	EQUX 641086	0.9540	270	2.43	
63241010002 - N	EQUX 641086	0.9540			
63241010003 - N	EQUX 641086	0.9540			
63241010004 - N	EQUX 641086	0.9540			
63241010005 - N	EQUX 641086	0.9540			
63241010006 - N	EQUX 641086	0.9540			
63241010007 - N	EQUX 641086	0.9540			
63241010008 - N	EQUX 641086	0.9540			
63241010009 - N	EQUX 641086	0.9540			
63241010010 - N	EQUX 641086	0.9540			
63241010011 - N	EQUX 641086	0.9540			
63241010012 - N	EQUX 641086	0.9540			
63241010013 - N	EQUX 641086	0.9540			
63241010014 - N	EQUX 641086	0.9540			
63241010015 - N	EQUX 641086	0.9547	276	2.53	
63241010016 - N	EQUX 641086	0.9547			
63241010017 - N	EQUX 641086	0.9547			
63241010018 - N	EQUX 641086	0.9547			
63241010019 - N	EQUX 641086	0.9547			
63241010020 - N	EQUX 641086	0.9547			
63241010021 - N	EQUX 641086	0.9547			
63241010022 - N	EQUX 641086	0.9547			
63241010023 - N	EQUX 641086	0.9547			
63241010024 - N	EQUX 641086	0.9547			
63241010025 - N	EQUX 641086	0.9547			
63241010026 - N	EQUX 641086	0.9547			
63241010027 - N	EQUX 641086	0.9547			

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Product : **TN 270-2-6**
Project : **IESI JED Cell 11, FL**

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
28	63241010028	63241010028 - N	6324.001	6324.052			
29	63241010029	63241010029 - N	6324.013	6324.039			
30	63241010030	63241010030 - N	6324.013	6324.039	1.27	2.79	
31	63241010031	63241010031 - N	6324.013	6324.039			
32	63241010032	63241010032 - N	6324.013	6324.039			
33	63241010033	63241010033 - N	6324.013	6324.039			
34	63241010034	63241010034 - N	6324.013	6324.039			
35	63241010035	63241010035 - N	6324.013	6324.039			
36	63241010036	63241010036 - N	6324.012	6324.044			
37	63241010037	63241010037 - N	6324.012	6324.044			
38	63241010038	63241010038 - N	6324.012	6324.044			
39	63241010039	63241010039 - N	6324.012	6324.044			
40	63241010040	63241010040 - N	6324.012	6324.044			
41	63241010041	63241010041 - N	6324.012	6324.044			
42	63241010042	63241010042 - N	6324.012	6324.044			
43	63241010043	63241010043 - N	6324.054	6324.015			
44	63241010044	63241010044 - N	6324.054	6324.015			
45	63241010045	63241010045 - N	6324.054	6324.015	1.36	2.64	
46	63241010046	63241010046 - N	6324.054	6324.015			
47	63241010047	63241010047 - N	6324.054	6324.015			
48	63241010048	63241010048 - N	6324.054	6324.015			
49	63241010049	63241010049 - N	6324.054	6324.015			
50	63241010050	63241010050 - N	6324.032	6324.043			
51	63241010051	63241010051 - N	6324.032	6324.043			
52	63241010052	63241010052 - N	6324.032	6324.043			
53	63241010053	63241010053 - N	6324.032	6324.043			
54	63241010054	63241010054 - N	6324.032	6324.043			

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Product : **TN 270-2-6**
Project : **IESI JED Cell 11, FL**

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241010028 - N	EQUX 641086	0.9547			
63241010029 - N	EQUX 641086	0.9547			
63241010030 - N	EQUX 641086	0.9541	273	2.65	
63241010031 - N	EQUX 641086	0.9541			
63241010032 - N	EQUX 641086	0.9541			
63241010033 - N	EQUX 641086	0.9541			
63241010034 - N	EQUX 641086	0.9541			
63241010035 - N	EQUX 641086	0.9541			
63241010036 - N	EQUX 641086	0.9541			
63241010037 - N	EQUX 641086	0.9541			
63241010038 - N	EQUX 641086	0.9541			
63241010039 - N	EQUX 641086	0.9541			
63241010040 - N	EQUX 641086	0.9541			
63241010041 - N	EQUX 641086	0.9541			
63241010042 - N	EQUX 641086	0.9541			
63241010043 - N	EQUX 641086	0.9541			
63241010044 - N	EQUX 641086	0.9541			
63241010045 - N	EQUX 641086	0.9544	274	2.38	
63241010046 - N	EQUX 641086	0.9544			
63241010047 - N	EQUX 641086	0.9544			
63241010048 - N	EQUX 641086	0.9544			
63241010049 - N	EQUX 641086	0.9544			
63241010050 - N	EQUX 641086	0.9544			
63241010051 - N	EQUX 641086	0.9544			
63241010052 - N	EQUX 641086	0.9544			
63241010053 - N	EQUX 641086	0.9544			
63241010054 - N	EQUX 641086	0.9544			

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Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
55	63241010055	63241010055 - N	6324.032	6324.043			
56	63241010056	63241010056 - N	6324.032	6324.043			
57	63241010057	63241010057 - N	6324.026	6324.033			
58	63241010058	63241010058 - N	6324.026	6324.033			
59	63241010059	63241010059 - N	6324.026	6324.033			
60	63241010060	63241010060 - N	6324.026	6324.033	1.51	2.69	
61	63241010061	63241010061 - N	6324.026	6324.033			
62	63241010062	63241010062 - N	6324.026	6324.033			
63	63241010063	63241010063 - N	6324.026	6324.033			
64	63241010064	63241010064 - N	6324.053	6324.031			
65	63241010065	63241010065 - N	6324.053	6324.031			
66	63241010066	63241010066 - N	6324.053	6324.031			
67	63241010067	63241010067 - N	6324.053	6324.031			
68	63241010068	63241010068 - N	6324.053	6324.031			
69	63241010069	63241010069 - N	6324.053	6324.031			
70	63241010070	63241010070 - N	6324.053	6324.031			
71	63241010071	63241010071 - N	6324.041	6324.023			
72	63241010072	63241010072 - N	6324.041	6324.023			
73	63241010073	63241010073 - N	6324.041	6324.023			
74	63241010074	63241010074 - N	6324.041	6324.023			
75	63241010075	63241010075 - N	6324.041	6324.023	1.48	2.59	
76	63241010076	63241010076 - N	6324.041	6324.023			
77	63241010077	63241010077 - N	6324.041	6324.023			
78	63241010078	63241010078 - N	6324.019	6324.051			
79	63241010079	63241010079 - N	6324.019	6324.051			
80	63241010080	63241010080 - N	6324.019	6324.051			
81	63241010081	63241010081 - N	6324.019	6324.051			

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Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241010055 - N	EQUX 641086	0.9544			
63241010056 - N	EQUX 641086	0.9544			
63241010057 - N	EQUX 641086	0.9544			
63241010058 - N	EQUX 641086	0.9544			
63241010059 - N	EQUX 641086	0.9544			
63241010060 - N	EQUX 641086	0.9539	271	2.59	
63241010061 - N	EQUX 641086	0.9539			
63241010062 - N	EQUX 641086	0.9539			
63241010063 - N	EQUX 641086	0.9539			
63241010064 - N	EQUX 641086	0.9539			
63241010065 - N	EQUX 641086	0.9539			
63241010066 - N	EQUX 641086	0.9539			
63241010067 - N	EQUX 641086	0.9539			
63241010068 - N	EQUX 641086	0.9539			
63241010069 - N	EQUX 641086	0.9539			
63241010070 - N	EQUX 641086	0.9539			
63241010071 - N	EQUX 641086	0.9539			
63241010072 - N	EQUX 641086	0.9539			
63241010073 - N	EQUX 641086	0.9539			
63241010074 - N	EQUX 641086	0.9539			
63241010075 - N	EQUX 641086	0.9542	277	2.52	
63241010076 - N	EQUX 641086	0.9542			
63241010077 - N	EQUX 641086	0.9542			
63241010078 - N	EQUX 641086	0.9542			
63241010079 - N	EQUX 641086	0.9542			
63241010080 - N	EQUX 641086	0.9542			
63241010081 - N	EQUX 641086	0.9542			

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Product : TN 270-2-6
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We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
82	63241010082	63241010082 - N	6324.019	6324.051			
83	63241010083	63241010083 - N	6324.019	6324.051			
84	63241010084	63241010084 - N	6324.019	6324.051			
85	63241010085	63241010085 - N	6324.037	6324.021			
86	63241010086	63241010086 - N	6324.037	6324.021			
87	63241010087	63241010087 - N	6324.037	6324.021			
88	63241010088	63241010088 - N	6324.037	6324.021			
89	63241010089	63241010089 - N	6324.037	6324.021			
90	63241010090	63241010090 - N	6324.037	6324.021	1.45	2.67	
91	63241010091	63241010091 - N	6324.037	6324.021			
92	63241010092	63241010092 - N	6324.014	6324.022			
93	63241010093	63241010093 - N	6324.014	6324.022			
94	63241010094	63241010094 - N	6324.014	6324.022			
95	63241010095	63241010095 - N	6324.014	6324.022			
96	63241010096	63241010096 - N	6324.014	6324.022			
97	63241010097	63241010097 - N	6324.014	6324.022			
98	63241010098	63241010098 - N	6324.014	6324.022			
99	63241010099	63241010099 - N	6324.017	6324.058			
100	63241010100	63241010100 - N	6324.017	6324.058			
101	63241010101	63241010101 - N	6324.017	6324.058			
102	63241010102	63241010102 - N	6324.017	6324.058			
103	63241010103	63241010103 - N	6324.017	6324.058			
104	63241010104	63241010104 - N	6324.017	6324.058			
105	63241010105	63241010105 - N	6324.017	6324.058	1.41	2.57	
106	63241010106	63241010106 - N	6324.036	6324.018			
107	63241010107	63241010107 - N	6324.036	6324.018			
108	63241010108	63241010108 - N	6324.036	6324.018			

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Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241010082 - N	EQUX 641086	0.9542			
63241010083 - N	EQUX 641086	0.9542			
63241010084 - N	EQUX 641086	0.9542			
63241010085 - N	EQUX 641086	0.9542			
63241010086 - N	EQUX 641086	0.9542			
63241010087 - N	EQUX 641086	0.9542			
63241010088 - N	EQUX 641086	0.9542			
63241010089 - N	EQUX 641086	0.9542			
63241010090 - N	EQUX 641086	0.9545	275	2.71	
63241010091 - N	EQUX 641086	0.9545			
63241010092 - N	EQUX 641086	0.9545			
63241010093 - N	EQUX 641086	0.9545			
63241010094 - N	EQUX 641086	0.9545			
63241010095 - N	EQUX 641086	0.9545			
63241010096 - N	EQUX 641086	0.9545			
63241010097 - N	EQUX 641086	0.9545			
63241010098 - N	EQUX 641086	0.9545			
63241010099 - N	EQUX 641086	0.9545			
63241010100 - N	EQUX 641086	0.9545			
63241010101 - N	EQUX 641086	0.9545			
63241010102 - N	EQUX 641086	0.9545			
63241010103 - N	EQUX 641086	0.9545			
63241010104 - N	EQUX 641086	0.9545			
63241010105 - N	EQUX 641086	0.9538	272	2.46	
63241010106 - N	EQUX 641086	0.9538			
63241010107 - N	EQUX 641086	0.9538			
63241010108 - N	EQUX 641086	0.9538			

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Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
109	63241010109	63241010109 - N	6324.036	6324.018			
110	63241010110	63241010110 - N	6324.036	6324.018			
111	63241010111	63241010111 - N	6324.036	6324.018			
112	63241010112	63241010112 - N	6324.036	6324.018			
113	63241010113	63241010113 - N	6324.040	6324.025			
114	63241010114	63241010114 - N	6324.040	6324.025			
115	63241010115	63241010115 - N	6324.040	6324.025			
116	63241010116	63241010116 - N	6324.040	6324.025			
117	63241010117	63241010117 - N	6324.040	6324.025			
118	63241010118	63241010118 - N	6324.040	6324.025			
119	63241010119	63241010119 - N	6324.040	6324.025			
120	63241010120	63241010120 - N	6324.057	6324.050	1.77	2.01	
121	63241010121	63241010121 - N	6324.057	6324.050			
122	63241010122	63241010122 - N	6324.057	6324.050			
123	63241010123	63241010123 - N	6324.057	6324.050			
124	63241010124	63241010124 - N	6324.057	6324.050			
125	63241010125	63241010125 - N	6324.057	6324.050			
126	63241010126	63241010126 - N	6324.057	6324.050			
127	63241010127	63241010127 - N	6324.048	6324.007			
128	63241010128	63241010128 - N	6324.048	6324.007			
129	63241010129	63241010129 - N	6324.048	6324.007			
130	63241010130	63241010130 - N	6324.048	6324.007			
131	63241010131	63241010131 - N	6324.048	6324.007			
132	63241010132	63241010132 - N	6324.048	6324.007			
133	63241010133	63241010133 - N	6324.048	6324.007			
134	63241010134	63241010134 - N	6324.056	6324.005			
135	63241010135	63241010135 - N	6324.056	6324.005	1.39	2.93	

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Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241010109 - N	EQUX 641086	0.9538			
63241010110 - N	EQUX 641086	0.9538			
63241010111 - N	EQUX 641086	0.9538			
63241010112 - N	EQUX 641086	0.9538			
63241010113 - N	EQUX 641086	0.9538			
63241010114 - N	EQUX 641086	0.9538			
63241010115 - N	EQUX 641086	0.9538			
63241010116 - N	EQUX 641086	0.9538			
63241010117 - N	EQUX 641086	0.9538			
63241010118 - N	EQUX 641086	0.9538			
63241010119 - N	EQUX 641086	0.9538			
63241010120 - N	EQUX 641086	0.9546	269	2.69	
63241010121 - N	EQUX 641086	0.9546			
63241010122 - N	EQUX 641086	0.9546			
63241010123 - N	EQUX 641086	0.9546			
63241010124 - N	EQUX 641086	0.9546			
63241010125 - N	EQUX 641086	0.9546			
63241010126 - N	EQUX 641086	0.9546			
63241010127 - N	EQUX 641086	0.9546			
63241010128 - N	EQUX 641086	0.9546			
63241010129 - N	EQUX 641086	0.9546			
63241010130 - N	EQUX 641086	0.9546			
63241010131 - N	EQUX 641086	0.9546			
63241010132 - N	EQUX 641086	0.9546			
63241010133 - N	EQUX 641086	0.9546			
63241010134 - N	EQUX 641086	0.9546			
63241010135 - N	EQUX 641086	0.9543	278	2.29	

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
136	63241010136	63241010136 - N	6324.056	6324.005			
137	63241010137	63241010137 - N	6324.056	6324.005			
138	63241010138	63241010138 - N	6324.056	6324.005			
139	63241010139	63241010139 - N	6324.056	6324.005			
140	63241010140	63241010140 - N	6324.056	6324.005			
141	63241010141	63241010141 - N	6324.016	6324.047			
142	63241010142	63241010142 - N	6324.016	6324.047			
143	63241010143	63241010143 - N	6324.016	6324.047			
144	63241010144	63241010144 - N	6324.016	6324.047			
145	63241010145	63241010145 - N	6324.016	6324.047			
146	63241010146	63241010146 - N	6324.016	6324.047			
147	63241010147	63241010147 - N	6324.016	6324.047			
148	63241010148	63241010148 - N	6324.028	6324.010			
149	63241010149	63241010149 - N	6324.028	6324.010			
150	63241010150	63241010150 - N	6324.028	6324.010	1.66	2.63	
151	63241010151	63241010151 - N	6324.028	6324.010			
152	63241010152	63241010152 - N	6324.028	6324.010			
153	63241010153	63241010153 - N	6324.028	6324.010			
154	63241010154	63241010154 - N	6324.028	6324.010			
155	63241010155	63241010155 - N	6324.002	6324.027			
156	63241010156	63241010156 - N	6324.002	6324.027			
157	63241010157	63241010157 - N	6324.002	6324.027			
158	63241010158	63241010158 - N	6324.002	6324.027			
159	63241010159	63241010159 - N	6324.002	6324.027			
160	63241010160	63241010160 - N	6324.002	6324.027			
161	63241010161	63241010161 - N	6324.002	6324.027			
162	63241010162	63241010162 - N	6324.009	6324.034			

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : **TN 270-2-6**
Project : **IESI JED Cell 11, FL**

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241010136 - N	EQUX 641086	0.9543			
63241010137 - N	EQUX 641086	0.9543			
63241010138 - N	EQUX 641086	0.9543			
63241010139 - N	EQUX 641086	0.9543			
63241010140 - N	EQUX 641086	0.9543			
63241010141 - N	EQUX 641086	0.9543			
63241010142 - N	EQUX 641086	0.9543			
63241010143 - N	EQUX 641086	0.9543			
63241010144 - N	EQUX 641086	0.9543			
63241010145 - N	EQUX 641086	0.9543			
63241010146 - N	EQUX 641086	0.9543			
63241010147 - N	EQUX 641086	0.9543			
63241010148 - N	EQUX 641086	0.9543			
63241010149 - N	EQUX 641086	0.9543			
63241010150 - N	EQUX 641086	0.9544	268	2.40	
63241010151 - N	EQUX 641086	0.9544			
63241010152 - N	EQUX 641086	0.9544			
63241010153 - N	EQUX 641086	0.9544			
63241010154 - N	EQUX 641086	0.9544			
63241010155 - N	EQUX 641086	0.9544			
63241010156 - N	EQUX 641086	0.9544			
63241010157 - N	EQUX 641086	0.9544			
63241010158 - N	EQUX 641086	0.9544			
63241010159 - N	EQUX 641086	0.9544			
63241010160 - N	EQUX 641086	0.9544			
63241010161 - N	EQUX 641086	0.9544			
63241010162 - N	EQUX 641086	0.9544			

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : **TN 270-2-6**
Project : **IESI JED Cell 11, FL**

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
163	63241010163	63241010163 - N	6324.009	6324.034			
164	63241010164	63241010164 - N	6324.009	6324.034			
165	63241010165	63241010165 - N	6324.009	6324.034	1.30	2.03	
166	63241010166	63241010166 - N	6324.009	6324.034			
167	63241010167	63241010167 - N	6324.009	6324.034			
168	63241010168	63241010168 - N	6324.009	6324.034			
169	63241010169	63241010169 - N	6324.038	6324.030			
170	63241010170	63241010170 - N	6324.038	6324.030			
171	63241010171	63241010171 - N	6324.038	6324.030			
172	63241010172	63241010172 - N	6324.038	6324.030			
173	63241010173	63241010173 - N	6324.038	6324.030			
174	63241010174	63241010174 - N	6324.038	6324.030			
175	63241010175	63241010175 - N	6324.038	6324.030			
176	63241010176	63241010176 - N	6324.059	6324.020			
177	63241010177	63241010177 - N	6324.059	6324.020			
178	63241010178	63241010178 - N	6324.059	6324.020			
179	63241010179	63241010179 - N	6324.059	6324.020			
180	63241010180	63241010180 - N	6324.059	6324.020	1.50	2.41	
181	63241010181	63241010181 - N	6324.059	6324.020			
182	63241010182	63241010182 - N	6324.059	6324.020			
183	63241010183	63241010183 - N	6324.024	6324.029			
184	63241010184	63241010184 - N	6324.024	6324.029			
185	63241010185	63241010185 - N	6324.024	6324.029			
186	63241010186	63241010186 - N	6324.024	6324.029			
187	63241010187	63241010187 - N	6324.024	6324.029			
188	63241010188	63241010188 - N	6324.024	6324.029			
189	63241010189	63241010189 - N	6324.024	6324.029			

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241010163 - N	EQUX 641086	0.9544			
63241010164 - N	EQUX 641086	0.9544			
63241010165 - N	EQUX 641086	0.9541	273	2.24	
63241010166 - N	EQUX 641086	0.9541			
63241010167 - N	EQUX 641086	0.9541			
63241010168 - N	EQUX 641086	0.9541			
63241010169 - N	EQUX 641086	0.9541			
63241010170 - N	EQUX 641086	0.9541			
63241010171 - N	EQUX 641086	0.9541			
63241010172 - N	EQUX 641086	0.9541			
63241010173 - N	EQUX 641086	0.9541			
63241010174 - N	EQUX 641086	0.9541			
63241010175 - N	EQUX 641086	0.9541			
63241010176 - N	EQUX 641086	0.9541			
63241010177 - N	EQUX 641086	0.9541			
63241010178 - N	EQUX 641086	0.9541			
63241010179 - N	EQUX 641086	0.9541			
63241010180 - N	EQUX 641086	0.9539	269	2.58	
63241010181 - N	EQUX 641086	0.9539			
63241010182 - N	EQUX 641086	0.9539			
63241010183 - N	EQUX 641086	0.9539			
63241010184 - N	EQUX 641086	0.9539			
63241010185 - N	EQUX 641086	0.9539			
63241010186 - N	EQUX 641086	0.9539			
63241010187 - N	EQUX 641086	0.9539			
63241010188 - N	EQUX 641086	0.9539			
63241010189 - N	EQUX 641086	0.9539			

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity (m^2/sec)
			Side A	Side B	Minimum	Average	
190	63241010190	63241010190 - N	6324.008	6324.004			
191	63241010191	63241010191 - N	6324.008	6324.004			
192	63241010192	63241010192 - N	6324.008	6324.004			
193	63241010193	63241010193 - N	6324.008	6324.004			
194	63241010194	63241010194 - N	6324.008	6324.004			
195	63241010195	63241010195 - N	6324.008	6324.004	1.39	1.92	
196	63241010196	63241010196 - N	6324.008	6324.004			
197	63241010197	63241010197 - N	6324.006	6324.035			
198	63241010198	63241010198 - N	6324.006	6324.035			
199	63241010199	63241010199 - N	6324.006	6324.035			
200	63241010200	63241010200 - N	6324.006	6324.035			
201	63241010201	63241010201 - N	6324.006	6324.035			
202	63241010202	63241010202 - N	6324.006	6324.035			
203	63241010203	63241010203 - N	6324.006	6324.035			
204	63241010204	63241010204 - N	6324.003	6324.042			
205	63241010205	63241010205 - N	6324.003	6324.042			
206	63241010206	63241010206 - N	6324.003	6324.042			
207	63241010207	63241010207 - N	6324.003	6324.042			
208	63241010208	63241010208 - N	6324.003	6324.042			
209	63241010209	63241010209 - N	6324.003	6324.042			
210	63241010210	63241010210 - N	6324.003	6324.042	1.33	2.75	

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : TN 270-2-6
Project : IESI JED Cell 11, FL

We, the Geonet Manufacturer, hereby certify the following for the material sent to the above referenced project :

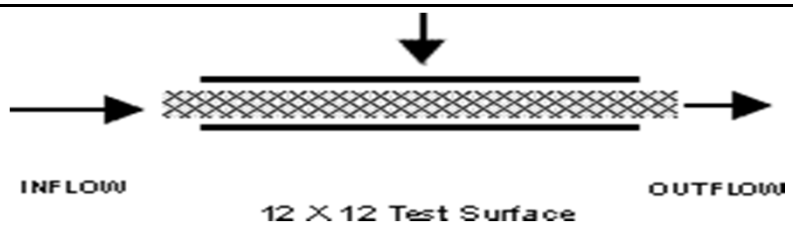
Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Thickness (mils)	Carbon Black (%)	Transmissivity (m^2/sec)
63241010190 - N	EQUX 641086	0.9539			
63241010191 - N	EQUX 641086	0.9539			
63241010192 - N	EQUX 641086	0.9539			
63241010193 - N	EQUX 641086	0.9539			
63241010194 - N	EQUX 641086	0.9539			
63241010195 - N	EQUX 641086	0.9545	272	2.73	
63241010196 - N	EQUX 641086	0.9545			
63241010197 - N	EQUX 641086	0.9545			
63241010198 - N	EQUX 641086	0.9545			
63241010199 - N	EQUX 641086	0.9545			
63241010200 - N	EQUX 641086	0.9545			
63241010201 - N	EQUX 641086	0.9545			
63241010202 - N	EQUX 641086	0.9545			
63241010203 - N	EQUX 641086	0.9545			
63241010204 - N	EQUX 641086	0.9545			
63241010205 - N	EQUX 641086	0.9545			
63241010206 - N	EQUX 641086	0.9545			
63241010207 - N	EQUX 641086	0.9545			
63241010208 - N	EQUX 641086	0.9545			
63241010209 - N	EQUX 641086	0.9545			
63241010210 - N	EQUX 641086	0.9543	276	2.72	

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

ASTM D 4716

Client:	IESI/Progressive Waste Solutions	**Job #**	6324
Project:	IESI JED Cell 11, FL		
Product:	TN 270-2-6		

Test Configuration:



Test Information:

Boundary Conditions:	60 Mil Textured HDPE Geomembrane Geocomposite 60 Mil Textured HDPE Geomembrane	**Normal Load:**	700
		Gradient:	0.015
		Seating Time:	24 hours
		Flow Direction:	MD

Test Results:

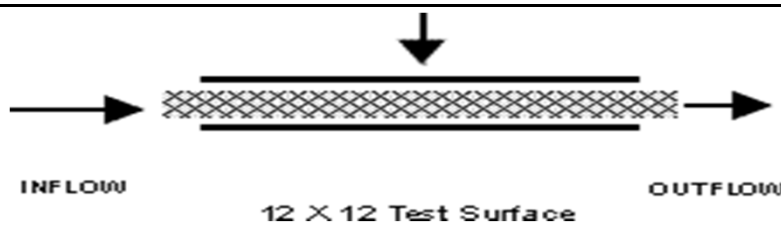
Roll No.	Pressure, psf	Gradient	Transmissivity, m^2/sec 24 hours
63241010001	700	0.015	1.27×10^{-3}
63241010035			1.45×10^{-3}
63241010070			1.41×10^{-3}
63241010105			1.28×10^{-3}
63241010140			1.23×10^{-3}
63241010175			1.39×10^{-3}
63241010210			1.23×10^{-3}

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

ASTM D 4716

Client:	IESI/Progressive Waste Solutions	**Job #**	6324
Project:	IESI JED Cell 11, FL		
Product:	TN 270-2-6		

Test Configuration:



Test Information:

Boundary Conditions:	60 Mil Textured HDPE Geomembrane Geocomposite 60 Mil Textured HDPE Geomembrane	**Normal Load:** **Gradient:** **Seating Time:** **Flow Direction:**	15000 0.015 100 hours MD

Test Results:

Roll No.	Pressure, psf	Gradient	Transmissivity, m^2/sec 100 hours
63241010001	15000	0.015	5.23×10^{-4}
63241010035			5.3×10^{-4}
63241010070			5.19×10^{-4}
63241010105			5.57×10^{-4}
63241010140			5.14×10^{-4}
63241010175			5.25×10^{-4}
63241010210			5.39×10^{-4}

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

POLYETHYLENE RESIN CERTIFICATION

Customer Name : IESI/Progressive Waste Solutions
Project Name : IESI JED Cell 11, FL
Geocomposite Manufacturer : SKAPS Industries
Geocomposite Production Plant : Commerce, GA
Geocomposite Brand Name : TN 270-2-6

We, the Geonet Manufacturer, hereby certify the following for the material delivered to the above referenced project:

Resin Supplier	Resin Production Plant	Resin Brand Name	Resin Lot Number	Property	Test Method	Units	Resin Supplier Value	Tested Value*
Global Plastics	Chevron, TX	HDPE	EQUX 641086	Density	ASTM D1505	gm / cc	0.9500	0.9492
				Melt flow Index	ASTM D1238[(a)]	gm / 10 min	0.35	0.34

(a) Condition 190/2.16
* Data from SKAPS Quality Control

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Product : **TN 270-2-6**
Project : **IESI JED Cell 11, FL**

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

GEOCOMP ROLL#	FABRIC ROLL#	WEIGHT oz/sq yd	MD TENSILE lbs.	XMD TENSILE lbs.	MD TRAP lbs.	XMD TRAP lbs.	CBR PUNCTURE lbs.	AOS us sieve	PERM-ITY sec^{-1}
63241010001	6324.049	6.62	170	175	71	84	492	70	1.75
	6324.055	6.27	162	179	75	82	487	70	1.75
63241010035	6324.013	6.26	166	171	72	88	490	70	1.76
	6324.039	6.51	169	172	70	83	484	70	1.81
63241010070	6324.053	6.27	162	179	75	82	487	70	1.75
	6324.031	6.20	163	176	79	82	477	70	1.81
63241010105	6324.017	6.41	164	170	77	90	486	70	1.76
	6324.058	6.39	166	171	72	86	496	70	1.75
63241010140	6324.056	6.39	166	171	72	86	496	70	1.75
	6324.005	6.58	168	175	76	81	483	70	1.76
63241010175	6324.038	6.51	169	172	70	83	484	70	1.81
	6324.030	6.20	163	176	79	82	477	70	1.81
63241010210	6324.003	6.34	160	173	80	89	476	70	1.76
	6324.042	6.45	161	177	78	85	500	70	1.75

571 Industrial Parkway, Commerce, GA 30529 Ph : 706-336-7000 Fax : 706-336-7007 Email : contact@skaps.com

Section 4
Geotextile

SKAPS Industries (Nonwoven Division)
335, Athena Drive
Athens, GA 30601 (U.S.A.)
Phone (706) 354-3700 Fax (706) 354-3737
E-mail: contact@skaps.com

Sales Office:
Engineered Synthetic Product Inc.
Phone: (770)564-1857
Fax: (770)564-1818

February 24, 2015
Progressive Waste Solutions
1099 Miller Drive
Altamonte Springs, FL 32701
Ref : IESI JED Landfill Cell 11
PO : Cell 11

Dear Sir/Madam:

This is to certify that SKAPS GE180 is a high quality needle-punched nonwoven geotextile made of 100% polypropylene staple fibers, randomly networked to form a high strength dimensionally stable fabric.SKAPS GE180 resists ultraviolet deterioration, rotting, biological degradation. The fabric is inert to commonly encountered soil chemicals. Polypropylene is stable within a pH range of 2 to 13. SKAPS GE180 conforms to the property values listed below:

PROPERTY	TEST METHOD	UNITS	M.A.R.V. Minimum Average Roll Value
Weight	ASTM D 5261	oz/sy (g/m^2)	8.00 (271)
Thickness*	ASTM D 5199	mils (mm)	100 (2.54)
Grab Tensile	ASTM D 4632	lbs (kN)	225 (1.00)
Grab Elongation	ASTM D 4632	%	50
Trapezoidal Tear	ASTM D 4533	lbs (kN)	90 (0.40)
Puncture Resistance	ASTM D 4833	lbs (kN)	130 (0.58)
Mullen Burst Strength	ASTM D 3786	psi (kPa)	425 (2930)
Permittivity*	ASTM D 4491	sec^{-1}	1.26
Permeability*	ASTM D 4491	cm/sec	0.30
Water Flow*	ASTM D 4491	$gpm/ft^2(l/min/m^2)$	100 (4074)
AOS*	ASTM D 4751	US Sieve (mm)	80 (0.18)
UV Resistance	ASTM D 4355	%/hrs	70/500

Notes:
* At the time of manufacturing. Handling may change these properties.

PALAK PATEL
QUALITY CONTROL MANAGER

Product : GE180-180

ROLL #	WEIGHT	THICKNESS	MD TENSILE	MD ELONG	XMD TENSILE	XMD ELONG	MD TRAP	XMD TRAP	PUNCTURE	MULLEN	AOS	WATER FLOW	PERMEABILITY	PERMITTIVITY
ASTM METHOD	D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D4833	D3786	D4751	D4491	D4491	D4491
UNITS	oz/sq yd	(mils)	lbs.	%	lbs	%	lbs.	lbs	lbs.	psi	US Sieve	gpm/ft^2	cm/sec	sec^{-1}
TARGET	8.00	100	225	50	225	50	90	90	130	425	80	100	0.30	1.26
37442.01	8.47	123	235	75	240	81	98	105	132	425	80	101	0.43	1.35
37442.02	8.47	123	235	75	240	81	98	105	132	425	80	101	0.43	1.35
37442.03	8.47	123	235	75	240	81	98	105	132	425	80	101	0.43	1.35
37442.04	8.47	123	235	75	240	81	98	105	132	425	80	101	0.43	1.35
37442.05	8.32	120	227	66	233	78	98	105	132	425	80	101	0.43	1.35
37442.06	8.32	120	227	66	233	78	98	105	132	425	80	101	0.43	1.35
37442.07	8.32	120	227	66	233	78	98	105	132	425	80	101	0.43	1.35
37442.08	8.32	120	227	66	233	78	98	105	132	425	80	101	0.43	1.35

*All Values are MARV.

Section 5
#4 Stone and #57 Stone

CONRAD YELVINGTON DISTRIBUTORS, INC.®
An Oldcastle Materials Company

Quality Test Report

Plant 21403206-Orlando Terminal
Product GRVL-AL-04350-1 1/2" Brown
Specification FLDOT 4

1872777244

Sample Information

Sample No 1872777244
Date Sampled 04/03/2015 13:04
Sampled By Rob Barrington
Type Investigative
Method Bin
Location
Process
Ledge
Other
Weather
Temp

Split Sample ☐
Resample ☐
Lot / Sublot
Quad / Quantity

Test Note

Sequence
Code

Gradation Results

Date Completed 04/06/2015 13:04
Tested By Rob Barrington

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
		16421.50				AASHTO T27

Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.0	0.0	0.0	0.0	100.0		100-100	
1 1/2" (37.5mm)	2010.2	2010.2	12.2	12.2	87.8		90-100	Coarse
1" (25mm)	6239.7	8249.9	38.0	50.2	49.8		20-55	
3/4" (19mm)	5158.8	13408.7	31.4	81.7	18.3		0-15	Fine
3/8" (9.5mm)	2789.5	16198.2	17.0	98.6	1.4		0-5	
#4 (4.75mm)	99.9	16298.1	0.6	99.2	0.8			
#8 (2.36mm)								
Pan	120.4	16418.5	0.75	100.00	0.00			

CONRAD YELVINGTON DISTRIBUTORS, INC.®
An Oldcastle Materials Company

Gradation Test With Sieve Chart Report

Plant 21403206-Orlando Terminal
Product GRVL-AL-04340-#5 Brown
Specification ASTM 57

1613503000

Sample Information

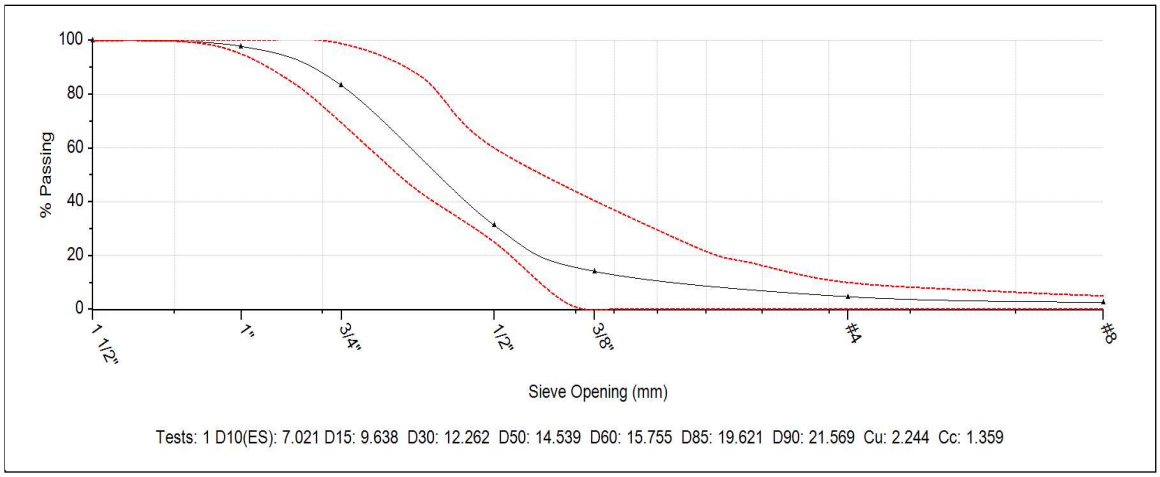
Sample No	1613503000	Split Sample ☐	Sequence
Date Sampled	03/31/2015 10:01	Resample ☐	Code
Sampled By	Rob Barrington	Lot / Sublot	
Type	Investigative	Quad / Quantity	
Method	Bin		
Location			
Process			
Ledge			
Other			
Weather			
Temp			

Gradation Results

Date Completed 04/01/2015 10:01 Tested By Rob Barrington

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
		12309.20				AASHTO T27

Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
1 1/2" (37.5mm)	0.0	0.0	0.0	0.0	100.0		100-100	
1" (25mm)	264.7	264.7	2.2	2.2	97.8		95-100	
3/4" (19mm)	1790.3	2055.0	14.5	16.7	83.3			
1/2" (12.5mm)	6414.9	8469.9	52.1	68.8	31.2		25-60	
3/8" (9.5mm)	2100.7	10570.6	17.1	85.9	14.1			
#4 (4.75mm)	1157.4	11728.0	9.4	95.3	4.7		0-10	
#8 (2.36mm)	267.5	11995.5	2.2	97.5	2.5		0-5	
Pan	302.9	12298.4	2.55	100.00	0.00			



Tests: 1 D10(ES): 7.021 D15: 9.638 D30: 12.262 D50: 14.539 D60: 15.755 D85: 19.621 D90: 21.569 Cu: 2.244 Cc: 1.359

APPENDIX F
Conformance Test Results

Section 1
GCL

March 5, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/05/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of one (1) Bentomat ST GCL sample.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 5, 2015**

REFERENCE TRI JOB NO.: G150151

DATE RECEIVED: February 25, 2015

SAMPLES SENT BY: CETCO, WY

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#205 L#201509LO	102844

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5084	Hydraulic Conductivity
2. ASTM D5887	Index Flux

TEST RESULTS: The test results are summarized in the attached Table 1.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

2 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engieering, LLC

PROJECT: JED Cell 11

Date Received: **2/25/2015**
Date Reported: **3/5/2015**
Client Sample ID: **R#205 L#201509LO**
Material Description: **Bentomat ST GCL**

QC'd By: Maria Espitia
TRI Job No.: **G150151**
TRI Control No.: **102844**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Maximum
ASTM D5084	Hydraulic Conductivity (cm./ sec.)															
	Effective Consolidation Stress: 5 psi															
		2.9E-09										**2.9E-09**	N/A			**$5x10^{-9}$**
ASTM D5887	Index Flux ($m.^3/ m.^2/sec.$)															
	Confining Pressure: 5 psi															
		3.6E-09										**3.6E-09**	N/A			**-**

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc from and against all liabilities in excess of the aforementioned limit.

March 5, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/05/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of one (1) Bentomat ST GCL sample.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 5, 2015**

REFERENCE TRI JOB NO.: G150157

DATE RECEIVED: February 26, 2015

SAMPLES SENT BY: CETCO, WY

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#293 L#201509LO	102867

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5084	Hydraulic Conductivity
2. ASTM D5887	Index Flux

TEST RESULTS: The test results are summarized in the attached Table 1.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

2 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engieering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/5/2015**
Client Sample ID: **R#293 L#201509LO**
Material Description: **Bentomat ST GCL**

QC'd By: Maria Espitia
TRI Job No.: **G150157**
TRI Control No.: **102867**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Maximum
ASTM D5084	Hydraulic Conductivity (cm./ sec.)															
	Effective Consolidation Stress: 5 psi															
		2.7E-09										**2.7E-09**	N/A			$5x10^{-9}$
ASTM D5887	Index Flux ($m.^3/ m.^2/sec.$)															
	Confining Pressure: 5 psi															
		2.0E-09										**2.0E-09**	N/A			-

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc from and against all liabilities in excess of the aforementioned limit.

March 7, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/07/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of one (1) Bentomat ST GCL sample.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 7, 2015**

REFERENCE TRI JOB NO.: G150166

DATE RECEIVED: February 27, 2015

SAMPLES SENT BY: CETCO, WY

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#381 L#201509LO	102896

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5084	Hydraulic Conductivity
2. ASTM D5887	Index Flux

TEST RESULTS: The test results are summarized in the attached Table 1.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

2 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engieering, LLC

PROJECT: JED Cell 11

Date Received: **2/27/2015**
Date Reported: **3/7/2015**
Client Sample ID: **R#381 L#201509LO**
Material Description: **Bentomat ST GCL**

QC'd By: Maria Espitia
TRI Job No.: **G150166**
TRI Control No.: **102896**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Maximum
ASTM D5084	Hydraulic Conductivity (cm./ sec.)															
	Effective Consolidation Stress: 5 psi															
		1.3E-09										**1.3E-09**	N/A			$5x10^{-9}$
ASTM D5887	Index Flux ($m.^3/ m.^2/sec.$)															
	Confining Pressure: 5 psi															
		2.0E-09										**2.0E-09**	N/A			-

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc from and against all liabilities in excess of the aforementioned limit.

Section 2
HDPE Geomembrane

February 27, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 02/27/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of two (2) 60mil HDPE Microspike Geomembrane samples.

PROJECT NAME: JED Cell11 DATE REPORTED: **February 27, 2015**

REFERENCE TRI JOB NO.: G150135

DATE RECEIVED: February 23, 2015

SAMPLES SENT BY: AGRU, SC

SAMPLE IDENTIFICATIONS:

	SAMPLE ID	*TRI CONTROL NUMBER*
1.	R#G15F081010 L#HEN820500	102780
2.	R#G15F082018 L#HEN820500	102781

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5994	Thickness
2. ASTM D1505	Density
3. ASTM D6693 (Type IV)	Tensile Strength
4. ASTM D1603	Carbon Black Content
5. ASTM D5596	Carbon Black Dispersion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 2.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

3 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/23/2015**
Date Reported: **2/27/2015**
Client Sample ID: **R#G15F081010 L#HEN820500**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150135**
TRI Control No.: **102780**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz) Loading Time: 5 sec Specimen Size: 4" x 4"															60 nominal
		62	61	61	61	60	61	60	62	61	62	61	1	60	62	54 min.
ASTM D1505	Density (grams/ cm.^{3})															
		0.9423	0.9423	0.9423								0.9423	0.0000	0.9423	0.9423	0.94 min.
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	144	143	144	144	146						144	1	143	146	126 min.
	TD	148	149	148	152	148						149	2	148	152	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	223	216	232	207	209						217	10	207	232	90 min.
	TD	203	188	180	184	190						189	9	180	203	
	Elongation at Yield (percent, %)															
	MD	23	23	23	21	23						23	1	21	23	12 min.
	TD	19	18	18	17	17						18	1	17	19	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	424	424	431	402	528						442	49	402	528	100 min.
	TD	613	553	503	541	565						555	40	503	613	
ASTM D1603	Carbon Black Content (percent, %)															
		2.38	2.21									2.29	0.12	2.21	2.38	2 to 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Cat. 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				all in Cat. 1,2 or 3

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD- TRANSVERSE DIRECTION

1160 North Gilbert Street, Anaheim, CA 92801, www.precisionlabs.net
Precision Geosynthetic Laboratories International dba TRI Environmental, Inc.

TABLE 2.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/23/2015**
Date Reported: **2/27/2015**
Client Sample ID: **R#G15F082018 L#HEN820500**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150135**
TRI Control No.: **102781**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															60 nominal
		62	62	62	61	61	60	61	61	61	62	61	1	60	62	54 min.
ASTM D1505	Density (grams/ cm.^{3})															
		0.9432	0.9432	0.9432								0.9432	0.0000	0.9432	0.9432	0.94 min.
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	144	148	150	147	144						147	3	144	150	126 min.
	TD	144	148	152	148	152						149	3	144	152	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	224	228	231	232	220						227	5	220	232	90 min.
	TD	203	200	199	182	176						192	12	176	203	
	Elongation at Yield (percent, %)															
	MD	21	20	22	21	20						21	1	20	22	12 min.
	TD	19	19	17	18	18						18	1	17	19	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	491	501	519	534	471						503	25	471	534	100 min.
	TD	640	603	595	506	499						569	63	499	640	
ASTM D1603	Carbon Black Content (percent, %)															
		2.27	2.21									2.24	0.04	2.21	2.27	2 to 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Cat. 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				all in Cat. 1,2 or 3

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD- TRANSVERSE DIRECTION

1160 North Gilbert Street, Anaheim, CA 92801, www.precisionlabs.net
Precision Geosynthetic Laboratories International dba TRI Environmental, Inc.

March 5, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/05/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of one (1) 60mil HDPE Microspike Geomembrane sample.

PROJECT NAME: JED Cell11 DATE REPORTED: **March 5, 2015**

REFERENCE TRI JOB NO.: G150150

DATE RECEIVED: February 25, 2015

SAMPLES SENT BY: AGRU, SC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#G15F083029 L#HEN820500	102843

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5994	Thickness
2. ASTM D1505	Density
3. ASTM D6693 (Type IV)	Tensile Strength
4. ASTM D1603	Carbon Black Content
5. ASTM D5596	Carbon Black Dispersion

TEST RESULTS: The test results are summarized in the attached Table 1.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

2 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/25/2015**
Date Reported: **3/5/2015**
Client Sample ID: **R#G15F083029 L#HEN820500**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150150**
TRI Control No.: **102843**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz) Loading Time: 5 sec Specimen Size: 4" x 4"															60 nominal
		60	61	61	61	61	61	61	62	61	61	61	0	60	62	54 min.
ASTM D1505	Density (grams/ cm.^{3})															
		0.9423	0.9423	0.9423								0.9423	0.0000	0.9423	0.9423	0.94 min.
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	145	148	152	145	152						148	4	145	152	126 min.
	TD	165	159	162	150	150						157	7	150	165	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	218	181	243	225	220						217	23	181	243	90 min.
	TD	201	189	205	165	193						191	16	165	205	
	Elongation at Yield (percent, %)															
	MD	23	23	23	23	22						23	1	22	23	12 min.
	TD	16	17	16	17	17						16	0	16	17	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	435	392	450	447	409						427	26	392	450	100 min.
	TD	613	577	613	503	596						580	46	503	613	
ASTM D1603	Carbon Black Content (percent, %)															
		2.45	2.33									2.39	0.08	2.33	2.45	2 to 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Cat. 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				all in Cat. 1,2 or 3

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD- TRANSVERSE DIRECTION

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Precision Geosynthetic Laboratories International dba TRI Environmental, Inc.

March 5, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/05/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of three (3) 60mil HDPE Microspike Geomembrane samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 5, 2015**

REFERENCE TRI JOB NO.: G150156

DATE RECEIVED: February 26, 2015

SAMPLES SENT BY: AGRU, SC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#G15F085055 L#HFA820810	102864
2. R#G15F083037 L#HEN820500	102865
3. R#G15F084046 L#HEN820500	102866

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5994	Thickness
2. ASTM D1505	Density
3. ASTM D6693 (Type IV)	Tensile Strength
4. ASTM D1603	Carbon Black Content
5. ASTM D5596	Carbon Black Dispersion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 3.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

4 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/5/2015**
Client Sample ID: **R#G15F085055 L#HFA820810**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150156**
TRI Control No.: **102864**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz) Loading Time: 5 sec Specimen Size: 4" x 4"															60 nominal
		62	60	61	60	62	60	60	60	62	61	61	1	60	62	54 min.
ASTM D1505	Density (grams/ cm.^{3})															
		0.9418	0.9418	0.9418								0.9418	0.0000	0.9418	0.9418	0.94 min.
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	149	148	152	149	148						149	2	148	152	126 min.
	TD	164	163	164	162	163						163	1	162	164	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	215	233	222	211	217						219	9	211	233	90 min.
	TD	171	185	183	187	187						182	7	171	187	
	Elongation at Yield (percent, %)															
	MD	23	23	22	23	29						24	3	22	29	12 min.
	TD	16	16	16	16	16						16	0	16	16	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	416	433	423	392	402						413	16	392	433	100 min.
	TD	517	560	549	580	584						558	27	517	584	
ASTM D1603	Carbon Black Content (percent, %)															
		2.05	2.38									2.22	0.23	2.05	2.38	2 to 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Cat. 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				all in Cat. 1,2 or 3

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD- TRANSVERSE DIRECTION

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TABLE 2.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/5/2015**
Client Sample ID: **R#G15F083037 L#HEN820500**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150156**
TRI Control No.: **102865**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz) Loading Time: 5 sec Specimen Size: 4" x 4"															60 nominal
		63	61	61	61	61	61	61	61	61	61	61	1	61	63	54 min.
ASTM D1505	Density (grams/ cm.^{3})															
		0.9425	0.9425	0.9425								0.9425	0.0000	0.9425	0.9425	0.94 min.
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	145	148	146	148	146						147	1	145	148	126 min.
	TD	160	162	164	162	163						162	2	160	164	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	202	191	220	221	220						211	14	191	221	90 min.
	TD	175	176	188	192	199						186	10	175	199	
	Elongation at Yield (percent, %)															
	MD	23	22	21	22	21						22	1	21	23	12 min.
	TD	19	20	20	20	20						20	0	19	20	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	392	367	426	427	424						407	27	367	427	100 min.
	TD	535	580	599	601	619						587	32	535	619	
ASTM D1603	Carbon Black Content (percent, %)															
		2.16	2.09									2.12	0.06	2.09	2.16	2 to 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Cat. 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				all in Cat. 1,2 or 3

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
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Precision Geosynthetic Laboratories International dba TRI Environmental, Inc.

TABLE 3.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/5/2015**
Client Sample ID: **R#G15F084046 L#HEN820500**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150156**
TRI Control No.: **102866**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz) Loading Time: 5 sec Specimen Size: 4" x 4"															60 nominal
		61	61	61	60	60	61	61	60	60	61	60	0	60	61	54 min.
ASTM D1505	Density (grams/ cm.^{3})															
		0.9423	0.9423	0.9423								0.9423	0.0000	0.9423	0.9423	0.94 min.
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	150	147	148	150	148						149	1	147	150	126 min.
	TD	160	160	159	159	155						159	2	155	160	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	217	199	220	224	228						218	11	199	228	90 min.
	TD	180	179	172	168	171						174	5	168	180	
	Elongation at Yield (percent, %)															
	MD	21	22	21	22	21						22	1	21	22	12 min.
	TD	16	16	16	16	16						16	0	16	16	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	404	378	408	435	451						415	28	378	451	100 min.
	TD	541	591	585	530	540						557	28	530	591	
ASTM D1603	Carbon Black Content (percent, %)															
		2.19	2.14									2.17	0.04	2.14	2.19	2 to 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Cat. 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				all in Cat. 1,2 or 3

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD- TRANSVERSE DIRECTION

March 7, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/07/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of four (4) 60mil HDPE Microspike Geomembrane samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 7, 2015**

REFERENCE TRI JOB NO.: G150170

DATE RECEIVED: March 2, 2015

SAMPLES SENT BY: AGRU, SC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#G15F085063 L#HFA820810	102923
2. R#G15F086072 L#HFA820810	102924
3. R#G15F087080 L#HFA820590	102925
4. R#G15F087090 L#HFA820590	102926

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5994	Thickness
2. ASTM D1505	Density
3. ASTM D6693 (Type IV)	Tensile Strength
4. ASTM D1603	Carbon Black Content
5. ASTM D5596	Carbon Black Dispersion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 4.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

5 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **3/2/2015**
Date Reported: **3/7/2015**
Client Sample ID: **R#G15F085063 L#HFA820810**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150170**
TRI Control No.: **102923**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															**60 nominal**
		61	**61**	**61**	**61**	**61**	**61**	**61**	**61**	**60**	**61**	**61**	**0**	**60**	**61**	**54 min.**
ASTM D1505	Density (grams/ cm.^{3})															
		0.9430	**0.9430**	**0.9430**								**0.9430**	**0.0000**	**0.9430**	**0.9430**	**0.94 min.**
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	**144**	**147**	**144**	**142**	**138**						**143**	**3**	**138**	**147**	**126 min.**
	TD	**156**	**157**	**147**	**156**	**159**						**155**	**4**	**147**	**159**	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	**214**	**201**	**184**	**206**	**227**						**206**	**16**	**184**	**227**	**90 min.**
	TD	**181**	**187**	**183**	**182**	**187**						**184**	**3**	**181**	**187**	
	Elongation at Yield (percent, %)															
	MD	**22**	**22**	**23**	**23**	**23**						**22**	**1**	**22**	**23**	**12 min.**
	TD	**17**	**16**	**17**	**16**	**16**						**16**	**1**	**16**	**17**	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	**422**	**477**	**374**	**403**	**463**						**428**	**42**	**374**	**477**	**100 min.**
	TD	**548**	**566**	**569**	**558**	**570**						**562**	**9**	**548**	**570**	
ASTM D1603	Carbon Black Content (percent, %)															
		2.49	**2.37**									**2.43**	**0.08**	**2.37**	**2.49**	**2 to 3**
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															**9 in Cat. 1 or 2**
		1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**10 out of 10 in Category 1**				**all in Cat. 1,2 or 3**

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD- TRANSVERSE DIRECTION

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TABLE 2.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **3/2/2015**
Date Reported: **3/7/2015**
Client Sample ID: **R#G15F086072 L#HFA820810**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150170**
TRI Control No.: **102924**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															**60 nominal**
		60	**61**	**61**	**61**	**61**	**61**	**61**	**61**	**61**	**61**	**61**	**0**	**60**	**61**	**54 min.**
ASTM D1505	Density (grams/ cm.^{3})															
		0.9430	**0.9430**	**0.9430**								**0.9430**	**0.0000**	**0.9430**	**0.9430**	**0.94 min.**
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	**148**	**152**	**146**	**152**	**152**						**150**	**3**	**146**	**152**	**126 min.**
	TD	**168**	**164**	**163**	**156**	**167**						**163**	**5**	**156**	**168**	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	**202**	**214**	**196**	**193**	**210**						**203**	**9**	**193**	**214**	**90 min.**
	TD	**201**	**197**	**195**	**166**	**170**						**186**	**16**	**166**	**201**	
	Elongation at Yield (percent, %)															
	MD	**22**	**21**	**21**	**22**	**22**						**22**	**1**	**21**	**22**	**12 min.**
	TD	**15**	**16**	**16**	**15**	**15**						**16**	**0**	**15**	**16**	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	**413**	**412**	**447**	**379**	**417**						**413**	**24**	**379**	**447**	**100 min.**
	TD	**610**	**597**	**584**	**529**	**531**						**570**	**38**	**529**	**610**	
ASTM D1603	Carbon Black Content (percent, %)															
		2.40	**2.19**									**2.30**	**0.15**	**2.19**	**2.40**	**2 to 3**
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															**9 in Cat. 1 or 2**
		1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**10 out of 10 in Category 1**				**all in Cat. 1,2 or 3**

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
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TABLE 3.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **3/2/2015**
Date Reported: **3/7/2015**
Client Sample ID: **R#G15F087080 L#HFA820590**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150170**
TRI Control No.: **102925**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz) Loading Time: 5 sec Specimen Size: 4" x 4"															60 nominal
		61	62	61	62	61	61	61	61	63	61	61	1	61	63	54 min.
ASTM D1505	Density (grams/ cm.^{3})															
		0.9435	0.9435	0.9435								0.9435	0.0000	0.9435	0.9435	0.94 min.
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	144	152	148	149	154						150	4	144	154	126 min.
	TD	162	169	167	166	163						166	3	162	169	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	188	190	190	217	222						201	17	188	222	90 min.
	TD	180	184	192	170	182						182	8	170	192	
	Elongation at Yield (percent, %)															
	MD	22	22	22	22	22						22	0	22	22	12 min.
	TD	16	16	15	16	15						16	0	15	16	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	417	372	389	417	430						405	24	372	430	100 min.
	TD	551	568	602	531	574						565	27	531	602	
ASTM D1603	Carbon Black Content (percent, %)															
		2.25	2.08									2.16	0.11	2.08	2.25	2 to 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Cat. 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				all in Cat. 1,2 or 3

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD- TRANSVERSE DIRECTION

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TABLE 4.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **3/2/2015**
Date Reported: **3/7/2015**
Client Sample ID: **R#G15F087090 L#HFA820590**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150170**
TRI Control No.: **102926**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															**60 nominal**
		62	**61**	**61**	**62**	**61**	**60**	**61**	**62**	**61**	**61**	**61**	**1**	**60**	**62**	**54 min.**
ASTM D1505	Density (grams/ cm.^{3})															
		0.9425	**0.9425**	**0.9425**								**0.9425**	**0.0000**	**0.9425**	**0.9425**	**0.94 min.**
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	**146**	**146**	**150**	**144**	**142**						**146**	**3**	**142**	**150**	**126 min.**
	TD	**162**	**151**	**153**	**162**	**154**						**157**	**5**	**151**	**162**	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	**221**	**212**	**217**	**201**	**214**						**213**	**7**	**201**	**221**	**90 min.**
	TD	**179**	**176**	**189**	**189**	**182**						**183**	**6**	**176**	**189**	
	Elongation at Yield (percent, %)															
	MD	**23**	**23**	**23**	**23**	**23**						**23**	**0**	**23**	**23**	**12 min.**
	TD	**15**	**16**	**16**	**16**	**16**						**16**	**0**	**15**	**16**	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	**449**	**417**	**414**	**442**	**454**						**435**	**19**	**414**	**454**	**100 min.**
	TD	**561**	**539**	**603**	**562**	**544**						**562**	**25**	**539**	**603**	
ASTM D1603	Carbon Black Content (percent, %)															
		2.22	**2.17**									**2.19**	**0.03**	**2.17**	**2.22**	**2 to 3**
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															**9 in Cat. 1 or 2**
		1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**10 out of 10 in Category 1**				**all in Cat. 1,2 or 3**

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
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March 9, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/09/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of two (2) 60mil HDPE Microspike Geomembrane samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 9, 2015**

REFERENCE TRI JOB NO.: G150176

DATE RECEIVED: March 3, 2015

SAMPLES SENT BY: AGRU, SC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#G15F091008 L#HFA820590	102936
2. R#G15F092016 L#HFA820590	102937

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5994	Thickness
2. ASTM D1505	Density
3. ASTM D6693 (Type IV)	Tensile Strength
4. ASTM D1603	Carbon Black Content
5. ASTM D5596	Carbon Black Dispersion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 2.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

3 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **3/3/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#G15F091008 L#HFA820590**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150176**
TRI Control No.: **102936**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															**60 nominal**
		62	**61**	**61**	**60**	**61**	**61**	**62**	**61**	**61**	**60**	**61**	**1**	**60**	**62**	**54 min.**
ASTM D1505	Density (grams/ cm.^{3})															
		0.9430	**0.9430**	**0.9430**								**0.9430**	**0.0000**	**0.9430**	**0.9430**	**0.94 min.**
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	**156**	**155**	**153**	**148**	**151**						**153**	**3**	**148**	**156**	**126 min.**
	TD	**167**	**160**	**164**	**157**	**160**						**162**	**4**	**157**	**167**	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	**167**	**167**	**166**	**208**	**217**						**185**	**25**	**166**	**217**	**90 min.**
	TD	**171**	**162**	**180**	**176**	**171**						**172**	**6**	**162**	**180**	
	Elongation at Yield (percent, %)															
	MD	**19**	**19**	**19**	**20**	**22**						**20**	**1**	**19**	**22**	**12 min.**
	TD	**16**	**18**	**16**	**18**	**16**						**17**	**1**	**16**	**18**	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	**457**	**446**	**450**	**426**	**431**						**442**	**13**	**426**	**457**	**100 min.**
	TD	**530**	**473**	**556**	**522**	**493**						**515**	**32**	**473**	**556**	
ASTM D1603	Carbon Black Content (percent, %)															
		2.31	**2.20**									**2.26**	**0.08**	**2.20**	**2.31**	**2 to 3**
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															**9 in Cat. 1 or 2**
		1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**10 out of 10 in Category 1**				**all in Cat. 1,2 or 3**

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD- TRANSVERSE DIRECTION

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TABLE 2.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **3/3/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#G15F092016 L#HFA820590**
Material Description: **60mil HDPE Microspike Geomembrane**

QC'd By: Maria Espitia
TRI Job No.: **G150176**
TRI Control No.: **102937**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs.
ASTM D5994	Thickness (mils)															
	Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															60 nominal
		61	61	61	61	60	61	62	62	61	60	61	1	60	62	54 min.
ASTM D1505	Density (grams/ cm.^{3})															
		0.9425	0.9425	0.9425								0.9425	0.0000	0.9425	0.9425	0.94 min.
ASTM D6693 Type IV	Tensile Properties:															
	Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	145	145	143	142	155						146	5	142	155	126 min.
	TD	164	160	160	161	162						161	2	160	164	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	209	204	223	209	175						204	18	175	223	90 min.
	TD	174	176	178	169	174						174	4	169	178	
	Elongation at Yield (percent, %)															
	MD	22	22	23	22	20						22	1	20	23	12 min.
	TD	16	16	18	17	17						17	1	16	18	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	414	419	453	413	461						432	23	413	461	100 min.
	TD	547	555	539	497	524						532	23	497	555	
ASTM D1603	Carbon Black Content (percent, %)															
		2.17	2.14									2.16	0.02	2.14	2.17	2 to 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Cat. 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				all in Cat. 1,2 or 3

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
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Section 3
Drainage Geocomposite

March 9, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/09/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of three (3) 270mil Double Sided Geocomposite samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 9, 2015**

REFERENCE TRI JOB NO.: G150123

DATE RECEIVED: February 19, 2015

SAMPLES SENT BY: SKAPS, GA

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#63241010001	
DS Geocomposite	102749
NW Geotextile (Side A/ Side B)	102752/ 102753
2. R#63241010072	
DS Geocomposite	102750
NW Geotextile (Side A/ Side B)	102754/ 102755
3. R#63241010144	
DS Geocomposite	102751
NW Geotextile (Side A/ Side B)	102756/ 102757

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*	*TEST METHOD*	*DESCRIPTION*
Geotextile		5. ASTM D4491	Permittivity
1. ASTM D5261	Mass Per Unit Area	***Geocomposite***	
2. ASTM D4632	Grab Tensile	6. ASTM D4716	Transmissivity
3. ASTM D4533	Tear Resistance	7. ASTM D7005	Ply Adhesion
4. ASTM D4751	Apparent Opening Size		

TEST RESULTS: The test results are summarized in the attached Tables 1 to 3.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

10 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010001**
Material Description: **270mil Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102749**

		SPECIMENS														Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Specs.
METHOD	**DESCRIPTION**															**MARV**
ASTM D4716	Transmissivity	*Tested at Normal Pressure : 700 psf, Gradient: 0.015 , Seating Time: 24 hrs*														
		Temperature of Test Water: 23.1 ^{0}C Specimen Size: 12" x 14"														
	Transmissivity	($m.^2$/ sec.)														
	MD	**5.52E-03**										**5.52E-03**	**N/A**	**N/A**	**N/A**	**$1.6x10^{-4}$**
	Flow Rate	(gal/min)														
	MD	**0.43**										**0.43**	**N/A**	**N/A**	**N/A**	**-**
	Transmissivity	(gal/min/ft)														
	MD	**26.67**										**26.67**	**N/A**	**N/A**	**N/A**	**-**
ASTM D4716	Transmissivity	*Tested at Normal Pressure : 15,000 psf, Gradient: 0.015 , Seating Time: 100 hrs*														
		Temperature of Test Water: 21.6 ^{0}C Specimen Size: 12" x 14"														
	Transmissivity	($m.^2$/ sec.)														
	MD	**1.06E-03**										**1.06E-03**	**N/A**	**N/A**	**N/A**	**$3.6x10^{-4}$**
	Transmissivity	(gal./ min./ ft.)														
	MD	**5.11**										**5.11**	**N/A**	**N/A**	**N/A**	**-**
	Flow Rate	(gal./ min)														
	MD	**0.08**										**0.08**	**N/A**	**N/A**	**N/A**	**-**
		Test Set-Up:														
		Plate														
		HDPE Microspike **oooooooo** ***Dull side down***														
		Geocomposite **XXXXXX**														
		HDPE Microspike **=========** ***Shiny side up***														
		Plate														
ASTM D7005	Ply Bond Adhesion	(lbs/ in.- width)														
		Instron Tensile Testing Machine is set for 305mm(12 in./min.) constant rate of extension with initial gauge length of 50mm.														
		Full scale force range used for testing: 100 lbs.														
		Side A of Composite														
	MD	**6.9**	**5.9**	**6.3**	**7.1**	**5.7**						**6.4**	**0.6**	**5.7**	**7.1**	**1.0**
		Side B of Composite														
	MD	**5.8**	**5.5**	**6.2**	**4.6**	**6.2**						**5.7**	**0.6**	**4.6**	**6.2**	**1.0**

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 1A.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010001**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite (Side A)**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102752**

		SPECIMENS														Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Specs.
METHOD	**DESCRIPTION**															**MARV**
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		6.7	6.5	6.6	6.6	6.5						6.6	0.1	6.5	6.7	6.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	188	190	195	196	200	198	190	189	198	200	194	5	188	200	160
	TD	198	206	212	220	219	208	220	218	208	206	211	7	198	220	
	Apparent Breaking Elongation (percent)															
	MD	78	73	75	70	75	79	75	72	73	75	75	3	70	79	-
	TD	77	83	87	93	89	86	93	92	89	86	88	5	77	93	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	90	93	102	103	90	93	88	90	100	102	95	6	88	103	65
	TD	106	111	107	104	100	106	102	100	93	100	103	5	93	111	
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen.*															
	BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.															
		1.76	1.68	1.70	1.69							1.71	0.04	1.68	1.76	0.5
	Permeability (cm./ sec.)															
		0.35	0.31	0.32	0.32							0.32	0.02	0.31	0.35	-
	Flow Rate (gpm/ ft.^{2})															
		132	126	127	127							128	3	126	132	-
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		70-100	70-100	70-100	70-100	70-100						70-100	N/A	N/A	N/A	-
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		0.181	0.162	0.173	0.162	0.174						0.170	0.008	0.162	0.181	≤ 0.21

(End of Table 1A)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 1B.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010001**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite (Side B)**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102753**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		6.7	6.6	6.5	6.4	6.5						6.5	0.1	6.4	6.7	6.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	190	200	189	190	185	190	195	190	190	187	191	4	185	200	160
	TD	220	206	207	210	200	206	211	208	216	220	210	7	200	220	
	Apparent Breaking Elongation (percent)															
	MD	73	77	72	72	75	73	75	79	79	76	75	3	72	79	-
	TD	87	86	80	87	86	80	86	80	90	93	86	4	80	93	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	89	89	92	93	100	101	90	89	90	85	92	5	85	101	65
	TD	103	111	106	121	98	95	90	93	91	102	101	10	90	121	
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen.*															
	BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.															
		1.75	1.80	1.63	1.64							1.70	0.08	1.63	1.80	0.5
	Permeability (cm./ sec.)															
		0.31	0.32	0.33	0.32							0.32	0.01	0.31	0.33	-
	Flow Rate (gpm/ ft.^{2})															
		131	135	122	122							127	6	122	135	-
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		70-100	70-100	70-100	70-100	70-100						70-100	N/A	N/A	N/A	-
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		0.173	0.193	0.170	0.189	0.183						0.182	0.010	0.170	0.193	≤ 0.21

(End of Table 1B) (Sheet 1 of 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 2.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010072**
Material Description: **270mil Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102750**

		SPECIMENS														
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
METHOD	**DESCRIPTION**															
ASTM D4716	Transmissivity	*Tested at Normal Pressure : 700 psf, Gradient: 0.015 , Seating Time: 24 hrs*														
		Temperature of Test Water: 21.1 ^{0}C Specimen Size: 12" x 14"														
	Transmissivity	($m.^2$/ sec.)														
	MD	**6.38E-03**										**6.38E-03**	**N/A**	**N/A**	**N/A**	**1.6x10^{-4}**
	Flow Rate	(gal/min)														
	MD	**0.48**										**0.48**	**N/A**	**N/A**	**N/A**	**-**
	Transmissivity	(gal/min/ft)														
	MD	**30.84**										**30.84**	**N/A**	**N/A**	**N/A**	**-**
ASTM D4716	Transmissivity	*Tested at Normal Pressure : 15,000 psf, Gradient: 0.015 , Seating Time: 100 hrs*														
		Temperature of Test Water: 26.1 ^{0}C Specimen Size: 12" x 14"														
	Transmissivity	($m.^2$/ sec.)														
	MD	**9.85E-04**										**9.85E-04**	**N/A**	**N/A**	**N/A**	**3.6x10^{-4}**
	Transmissivity	(gal./ min./ ft.)														
	MD	**4.76**										**4.76**	**N/A**	**N/A**	**N/A**	**-**
	Flow Rate	(gal./ min)														
	MD	**0.08**										**0.08**	**N/A**	**N/A**	**N/A**	**-**
		Test Set-Up:														
		Plate														
		HDPE Microspike	***oooooooull side down***													
		Geocomposite	***XXXXXX***													
		HDPE Microspike	***========Shiny side up***													
		Plate														
ASTM D7005	Ply Bond Adhesion	(lbs/ in.- width)														
		Instron Tensile Testing Machine is set for 305mm(12 in./min.) constant rate of extension with initial gauge length of 50mm.														
		Full scale force range used for testing: 100 lbs.														
		Side A of Composite														
	MD	**4.6**	**6.5**	**5.1**	**5.1**	**3.6**						**5.0**	**1.0**	**3.6**	**6.5**	**1.0**
		Side B of Composite														
	MD	**3.3**	**5.8**	**5.6**	**4.1**	**5.9**						**4.9**	**1.2**	**3.3**	**5.9**	**1.0**

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 2A.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010072**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite (Side A)**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102754**

		SPECIMENS														Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Specs.
METHOD	**DESCRIPTION**															**MARV**
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		6.7	6.5	6.5	6.5	6.7						6.6	0.1	6.5	6.7	6.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	185	180	181	190	195	190	188	191	195	190	188	5	180	195	160
	TD	200	206	211	208	209	200	206	211	208	207	207	4	200	211	
	Apparent Breaking Elongation (percent)															
	MD	73	70	72	73	76	75	75	75	75	73	74	2	70	76	-
	TD	86	87	90	86	80	86	80	86	87	86	86	3	80	90	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	83	96	97	102	88	93	90	85	78	90	90	7	78	102	65
	TD	106	103	98	95	106	107	111	102	90	90	101	7	90	111	

(End of Table 2A)

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LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 2B.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010072**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite (Side B)**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102755**

		SPECIMENS														Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Specs.
METHOD	**DESCRIPTION**															**MARV**
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		6.8	6.4	6.4	6.8	6.7						6.6	0.2	6.4	6.8	6.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	200	190	188	190	188	190	191	195	188	190	191	4	188	200	160
	TD	230	220	220	211	209	221	231	221	209	210	218	8	209	231	
	Apparent Breaking Elongation (percent)															
	MD	77	73	76	70	73	69	76	76	78	75	74	3	69	78	-
	TD	87	86	82	86	83	87	90	89	86	87	86	2	82	90	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	83	92	96	90	89	89	90	90	88	90	90	3	83	96	65
	TD	96	97	89	92	96	106	100	102	99	99	98	5	89	106	

(End of Table 2B)

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LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 3.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010144**
Material Description: **270mil Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102751**

		SPECIMENS														Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Specs.
METHOD	**DESCRIPTION**															**MARV**
ASTM D4716	Transmissivity	*Tested at Normal Pressure : 700 psf, Gradient: 0.015 , Seating Time: 24 hrs*														
		Temperature of Test Water: 21.1 ^{0}C Specimen Size: 12" x 14"														
	Transmissivity	(m.^{2}/ sec.)														
	MD	**5.32E-03**										**5.32E-03**	**N/A**	**N/A**	**N/A**	**1.6x10^{-4}**
	Flow Rate	(gal/min)														
	MD	**0.40**										**0.40**	**N/A**	**N/A**	**N/A**	**-**
	Transmissivity	(gal/min/ft)														
	MD	**25.68**										**25.68**	**N/A**	**N/A**	**N/A**	**-**
ASTM D4716	Transmissivity	*Tested at Normal Pressure : 15,000 psf, Gradient: 0.015 , Seating Time: 100 hrs*														
		Temperature of Test Water: 20.3 ^{0}C Specimen Size: 12" x 14"														
	Transmissivity	(m.^{2}/ sec.)														
	MD	**1.01E-03**										**1.01E-03**	**N/A**	**N/A**	**N/A**	**3.6x10^{-4}**
	Transmissivity	(gal./ min./ ft.)														
	MD	**4.87**										**4.87**	**N/A**	**N/A**	**N/A**	**-**
	Flow Rate	(gal./ min)														
	MD	**0.07**										**0.07**	**N/A**	**N/A**	**N/A**	**-**
		Test Set-Up:														
		Plate														
		HDPE Microspike	***oooooooull side down***													
		Geocomposite	***XXXXXX***													
		HDPE Microspike	***=========Shiny side up***													
		Plate														
ASTM D7005	Ply Bond Adhesion	(lbs/ in.- width)														
		Instron Tensile Testing Machine is set for 305mm(12 in./min.) constant rate of extension with initial gauge length of 50mm.														
		Full scale force range used for testing: 100 lbs.														
		Side A of Composite														
	MD	**6.2**	**6.0**	**3.9**	**3.9**	**5.9**						**5.2**	**1.2**	**3.9**	**6.2**	**1.0**
		Side B of Composite														
	MD	**5.2**	**3.7**	**5.9**	**3.4**	**0.0**						**3.7**	**2.3**	**0.0**	**5.9**	**1.0**

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 3A.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010144**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite (Side A)**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102756**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		6.7	6.4	6.5	6.7	6.6						6.6	0.1	6.4	6.7	6.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	190	197	189	200	206	199	189	190	197	190	195	6	189	206	160
	TD	230	209	198	217	223	220	219	201	216	195	213	12	195	230	
	Apparent Breaking Elongation (percent)															
	MD	77	75	73	72	70	71	73	72	74	76	73	2	70	77	-
	TD	86	80	83	82	85	84	83	85	86	79	84	2	79	86	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	78	83	86	92	96	97	100	98	95	99	92	8	78	100	65
	TD	102	101	106	98	100	95	95	106	102	103	101	4	95	106	
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen.*															
	BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.															
		1.58	1.68	1.59	1.67							1.63	0.05	1.58	1.68	0.5
	Permeability (cm./ sec.)															
		0.31	0.31	0.26	0.29							0.29	0.02	0.26	0.31	-
	Flow Rate (gpm/ ft.^{2})															
		118	126	119	125							122	4	118	126	-
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		70-100	70-100	70-100	70-100	70-100						70-100	N/A	N/A	N/A	-
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		0.180	0.170	0.173	0.169	0.174						0.173	0.004	0.169	0.180	≤ 0.21

(End of Table 3A)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 3B.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/19/2015**
Date Reported: **3/9/2015**
Client Sample ID: **R#63241010144**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite (Side B)**

QC'd By: Maria Espitia
TRI Job No.: **G150123**
TRI Control No.: **102757**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		6.5	6.5	6.6	6.5	6.6						6.5	0.0	6.5	6.6	6.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	188	192	190	206	189	198	191	188	179	184	190	7	179	206	160
	TD	208	211	209	198	213	200	198	208	220	217	208	8	198	220	
	Apparent Breaking Elongation (percent)															
	MD	70	73	72	73	72	74	72	74	79	75	74	2	70	79	-
	TD	77	77	80	86	87	91	87	86	83	86	84	5	77	91	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	79	80	83	90	92	89	79	86	83	85	85	5	79	92	65
	TD	86	92	102	100	106	111	100	98	97	96	99	7	86	111	
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen.*															
	BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.															
		1.90	1.84	1.64	1.90							1.82	0.12	1.64	1.90	0.5
	Permeability (cm./ sec.)															
		0.41	0.34	0.34	0.35							0.36	0.03	0.34	0.41	-
	Flow Rate (gpm/ ft.^{2})															
		142	138	122	142							136	9	122	142	-
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		70-100	70-100	70-100	70-100	70-100						70-100	N/A	N/A	N/A	-
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		0.173	0.181	0.168	0.182	0.181						0.177	0.006	0.168	0.182	≤ 0.21

(End of Table 3B)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

March 12, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/12/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of three (3) 330mil Double Sided Geocomposite samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 12, 2015**

REFERENCE TRI JOB NO.: G150159

DATE RECEIVED: February 26, 2015

SAMPLES SENT BY: SKAPS, GA

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#63241020001	
DS Geocomposite	102871
NW Geotextile (Side A/ Side B)	102874/ 102875
2. R#63241020085	
DS Geocomposite	102872
NW Geotextile (Side A/ Side B)	102876/ 102877
3. R#63241020169	
DS Geocomposite	102873
NW Geotextile (Side A/ Side B)	102878/ 102879

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*	*TEST METHOD*	*DESCRIPTION*
Geotextile		5. ASTM D4491	Permittivity
1. ASTM D5261	Mass Per Unit Area	***Geocomposite***	
2. ASTM D4632	Grab Tensile	6. ASTM D4716	Transmissivity
3. ASTM D4533	Tear Resistance	7. ASTM D7005	Ply Adhesion
4. ASTM D4751	Apparent Opening Size		

TEST RESULTS: The test results are summarized in the attached Tables 1 to 3.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

10 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020001**
Material Description: **330mil Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102871**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D4716	Transmissivity *Tested at Normal Pressure : 700 psf, Gradient: 0.015 , Seating Time: 24 hrs* *Temperature of Test Water: 22.1 ^{0}C Specimen Size: 12" x 14"*															
	Transmissivity ($m.^2$/ sec.)															
	MD	**7.35E-03**										**7.35E-03**	**N/A**	**N/A**	**N/A**	**7.5x10^{-4}**
	Flow Rate (gal/min)															
	MD	**0.56**										**0.56**	**N/A**	**N/A**	**N/A**	**-**
	Transmissivity (gal/min/ft)															
	MD	**35.49**										**35.49**	**N/A**	**N/A**	**N/A**	**-**
ASTM D4716	Transmissivity *Tested at Normal Pressure : 15.000 psf, Gradient: 0.015 , Seating Time: 100 hrs* *Temperature of Test Water: 21.2 ^{0}C Specimen Size: 12" x 14"*															
	Transmissivity ($m.^2$/ sec.)															
	MD	**2.42E-03**										**2.42E-03**	**N/A**	**N/A**	**N/A**	**1.3x10^{-3}**
	Transmissivity (gal./ min./ ft.)															
	MD	**11.67**										**11.67**	**N/A**	**N/A**	**N/A**	**-**
	Flow Rate (gal./ min)															
	MD	**0.18**										**0.18**	**N/A**	**N/A**	**N/A**	**-**
	Test Set-Up:															
	Plate	_____														
	Protective Layer Soil	**oooooooo**	***Compacted to 90 pcf at 17% mc***													
	Geocomposite	**XXXXXX**														
	HDPE Microspike	**==========**														
	Plate	_____														
ASTM D7005	Ply Bond Adhesion (lbs/ in.- width)															
	Instron Tensile Testing Machine is set for 305mm(12 in./min.) constant rate of extension with initial gauge length of 50mm.															
	Full scale force range used for testing: 100 lbs.															
	Side A of Composite															
	MD	**4.8**	**5.9**	**5.6**	**6.3**	**4.5**						**5.4**	**0.7**	**4.5**	**6.3**	**1.0**
	Side B of Composite															
	MD	**6.6**	**7.2**	**4.9**	**7.9**	**6.8**						**6.7**	**1.1**	**4.9**	**7.9**	**1.0**

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 1A.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020001**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102874**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		9.1	9.0	9.1	8.9	9.0						9.0	0.1	8.9	9.1	8.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	240	255	268	259	261	270	239	241	237	249	252	12	237	270	200
	TD	260	300	298	278	280	278	260	259	268	270	275	15	259	300	
	Apparent Breaking Elongation (percent)															
	MD	74	74	77	73	80	82	77	82	74	80	77	4	73	82	-
	TD	93	94	93	89	93	94	89	86	89	93	91	3	86	94	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	107	109	110	111	106	102	100	100	96	106	105	5	96	111	75
	TD	138	142	144	146	150	162	160	163	160	160	152	9	138	163	
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen.*															
	BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.															
		1.55	1.53	1.49	1.52							1.52	0.03	1.49	1.55	0.5
	Permeability (cm./ sec.)															
		0.46	0.38	0.37	0.38							0.40	0.04	0.37	0.46	-
	Flow Rate (gpm/ ft.^{2})															
		116	114	111	114							114	2	111	116	-
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		70-100	70-100	70-100	70-100	70-100						70-100	N/A	N/A	N/A	-
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		0.185	0.190	0.191	0.194	0.179						0.188	0.006	0.179	0.194	≤ 0.21

(End of Table 1A)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 1B.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020001**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102875**

		SPECIMENS														Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Specs.
METHOD	**DESCRIPTION**															**MARV**
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		8.9	9.0	9.0	9.1	9.1						9.0	0.1	8.9	9.1	8.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	241	250	261	257	262	250	247	250	253	250	252	6	241	262	200
	TD	280	306	298	276	289	290	300	276	259	263	284	16	259	306	
	Apparent Breaking Elongation (percent)															
	MD	77	73	75	80	79	76	75	80	79	73	77	3	73	80	-
	TD	87	94	99	90	94	99	99	90	93	89	93	5	87	99	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	103	98	106	107	110	107	112	116	117	117	109	6	98	117	75
	TD	138	142	144	148	150	155	159	162	160	147	150	8	138	162	
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen.*															
	BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.															
		1.52	1.50	1.51	1.50							1.51	0.01	1.50	1.52	0.5
	Permeability (cm./ sec.)															
		0.36	0.37	0.37	0.38							0.37	0.01	0.36	0.38	-
	Flow Rate (gpm/ ft.^{2})															
		114	112	113	112							113	1	112	114	-
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		70-100	70-100	70-100	70-100	70-100						70-100	N/A	N/A	N/A	-
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		0.180	0.186	0.193	0.180	0.191						0.186	0.006	0.180	0.193	≤ 0.21

(End of Table 1B)

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LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 2.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020085**
Material Description: **330mil Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102872**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D4716	Transmissivity *Tested at Normal Pressure : 700 psf, Gradient: 0.015 , Seating Time: 24 hrs* *Temperature of Test Water: 22.3^0 C Specimen Size: 12" x 14"*															
	Transmissivity (m.^{2}/ sec.)															
	MD	**5.80E-03**										**5.80E-03**	**N/A**	**N/A**	**N/A**	**7.5x10^{-4}**
	Flow Rate (gal/min)															
	MD	**0.44**										**0.44**	**N/A**	**N/A**	**N/A**	**-**
	Transmissivity (gal/min/ft)															
	MD	**28.03**										**28.03**	**N/A**	**N/A**	**N/A**	**-**
ASTM D4716	Transmissivity *Tested at Normal Pressure : 15.000 psf, Gradient: 0.015 , Seating Time: 100 hrs* *Temperature of Test Water: 21.2^0 C Specimen Size: 12" x 14"*															
	Transmissivity (m.^{2}/ sec.)															
	MD	**2.14E-03**										**2.14E-03**	**N/A**	**N/A**	**N/A**	**1.3x10^{-3}**
	Transmissivity (gal./ min./ ft.)															
	MD	**10.33**										**10.33**	**N/A**	**N/A**	**N/A**	**-**
	Flow Rate (gal./ min)															
	MD	**0.16**										**0.16**	**N/A**	**N/A**	**N/A**	**-**
	Test Set-Up:															
	Plate															
	Protective Layer Soil ***oooooooo*** ***Compacted to 90 pcf at 17% mc***															
	Geocomposite ***XXXXXX***															
	HDPE Microspike ***==========***															
	Plate															
ASTM D7005	Ply Bond Adhesion (lbs/ in.- width)															
	Instron Tensile Testing Machine is set for 305mm(12 in./min.) constant rate of extension with initial gauge length of 50mm.															
	Full scale force range used for testing: 100 lbs.															
	Side A of Composite															
	MD	**5.2**	**4.7**	**3.6**	**6.4**	**6.6**						**5.3**	**1.3**	**3.6**	**6.6**	**1.0**
	Side B of Composite															
	MD	**9.1**	**4.5**	**8.6**	**4.1**	**5.5**						**6.4**	**2.3**	**4.1**	**9.1**	**1.0**

(End of Table 2)

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LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 2A.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020085**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102876**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		9.2	9.1	9.0	9.1	8.9						9.1	0.1	8.9	9.2	8.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	247	250	247	250	250	242	258	247	250	247	249	4	242	258	200
	TD	268	270	260	260	257	260	266	267	270	275	265	6	257	275	
	Apparent Breaking Elongation (percent)															
	MD	86	80	73	76	77	76	80	79	86	80	79	4	73	86	-
	TD	87	90	86	89	86	87	88	88	90	92	88	2	86	92	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	110	102	106	111	108	107	103	105	110	111	107	3	102	111	75
	TD	160	163	157	160	155	147	150	144	140	141	152	8	140	163	

(End of Table 2A)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 2B.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020085**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102877**

		SPECIMENS														
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
METHOD	**DESCRIPTION**															
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		9.3	9.5	9.1	9.1	9.1						9.2	0.2	9.1	9.5	8.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	241	259	260	257	250	247	245	244	240	247	249	7	240	260	200
	TD	260	278	288	260	261	260	260	266	263	270	267	10	260	288	
	Apparent Breaking Elongation (percent)															
	MD	77	80	76	79	82	79	82	86	82	80	81	3	76	86	-
	TD	86	90	92	89	88	86	87	89	89	91	89	2	86	92	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	106	110	109	104	100	99	106	105	110	102	105	4	99	110	75
	TD	141	138	144	138	140	150	153	154	160	161	148	9	138	161	

(End of Table 2B)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 3.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020169**
Material Description: **330mil Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102873**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D4716	Transmissivity *Tested at Normal Pressure : 700 psf, Gradient: 0.015 , Seating Time: 24 hrs* *Temperature of Test Water: 22.3^0 C Specimen Size: 12" x 14"*															
	Transmissivity (m.^{2}/ sec.)															
	MD	**6.47E-03**										**6.47E-03**	**N/A**	**N/A**	**N/A**	**7.5x10^{-4}**
	Flow Rate (gal/min)															
	MD	**0.49**										**0.49**	**N/A**	**N/A**	**N/A**	**-**
	Transmissivity (gal/min/ft)															
	MD	**31.26**										**31.26**	**N/A**	**N/A**	**N/A**	**-**
ASTM D4716	Transmissivity *Tested at Normal Pressure : 15.000 psf, Gradient: 0.015 , Seating Time: 100 hrs* *Temperature of Test Water: 21.2^0 C Specimen Size: 12" x 14"*															
	Transmissivity (m.^{2}/ sec.)															
	MD	**2.33E-03**										**2.33E-03**	**N/A**	**N/A**	**N/A**	**1.3x10^{-3}**
	Transmissivity (gal./ min./ ft.)															
	MD	**11.24**										**11.24**	**N/A**	**N/A**	**N/A**	**-**
	Flow Rate (gal./ min)															
	MD	**0.18**										**0.18**	**N/A**	**N/A**	**N/A**	**-**
	Test Set-Up:															
	Plate	_____														
	Protective Layer Soil	***oooooooo***	***Compacted to 90 pcf at 17% mc***													
	Geocomposite	***XXXXXX***														
	HDPE Microspike	***==========***														
	Plate	_____														
ASTM D7005	Ply Bond Adhesion (lbs/ in.- width)															
	Instron Tensile Testing Machine is set for 305mm(12 in./min.) constant rate of extension with initial gauge length of 50mm.															
	Full scale force range used for testing: 100 lbs.															
	Side A of Composite															
	MD	**9.1**	**9.7**	**4.9**	**7.8**	**5.1**						**7.3**	**2.2**	**4.9**	**9.7**	**1.0**
	Side B of Composite															
	MD	**5.5**	**8.6**	**5.9**	**7.9**	**9.4**						**7.5**	**1.7**	**5.5**	**9.4**	**1.0**

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 3A.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020169**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102878**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		8.9	8.9	9.1	9.1	9.2						9.1	0.1	8.9	9.2	8.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	259	260	257	250	247	259	261	260	247	250	255	6	247	261	200
	TD	270	276	280	277	259	248	260	263	268	267	267	10	248	280	
	Apparent Breaking Elongation (percent)															
	MD	73	76	77	80	76	79	76	75	75	80	77	2	73	80	-
	TD	90	92	94	95	87	86	89	89	90	91	90	3	86	95	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	110	106	103	100	99	106	110	102	111	120	107	6	99	120	75
	TD	138	142	148	162	168	170	171	168	160	160	159	12	138	171	
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen.*															
	BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.															
		1.49	1.51	1.51	1.51							1.50	0.01	1.49	1.51	0.5
	Permeability (cm./ sec.)															
		0.37	0.39	0.38	0.39							0.38	0.01	0.37	0.39	-
	Flow Rate (gpm/ ft.^{2})															
		111	113	113	113							112	1	111	113	-
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		70-100	70-100	70-100	70-100	70-100						70-100	N/A	N/A	N/A	-
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		0.196	0.185	0.192	0.184	0.166						0.185	0.012	0.166	0.196	≤ 0.21

(End of Table 3A)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

TABLE 3B.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **2/26/2015**
Date Reported: **3/12/2015**
Client Sample ID: **R#63241020169**
Material Description: **Non-Woven Geotextile Component of Double-Sided Geocomposite**

QC'd By: Maria Espitia
TRI Job No.: **G150159**
TRI Control No.: **102879**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		9.0	9.1	9.1	8.9	9.0						9.0	0.1	8.9	9.1	8.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	238	241	259	261	260	260	247	259	239	260	252	10	238	261	200
	TD	270	289	290	306	311	298	270	289	290	295	291	13	270	311	
	Apparent Breaking Elongation (percent)															
	MD	77	80	86	79	80	80	86	80	86	79	82	3	77	86	-
	TD	84	89	90	92	94	99	89	93	94	97	92	4	84	99	
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	106	111	120	127	129	120	117	98	98	103	113	11	98	129	75
	TD	142	150	162	170	171	150	153	159	146	149	155	10	142	171	
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen.*															
	BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.															
		1.51	1.49	1.51	1.52							1.51	0.01	1.49	1.52	0.5
	Permeability (cm./ sec.)															
		0.39	0.37	0.38	0.39							0.38	0.01	0.37	0.39	-
	Flow Rate (gpm/ ft.^{2})															
		113	112	113	114							113	1	112	114	-
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		70-100	70-100	70-100	70-100	70-100						70-100	N/A	N/A	N/A	-
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.															
		0.177	0.183	0.188	0.175	0.174						0.179	0.006	0.174	0.188	≤ 0.21

(End of Table 3B)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

Section 4
Geotextile

March 20, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 03/20/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loft Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Conformance testing of one (1) 8oz Non Woven Geotextile sample.

PROJECT NAME: JED Cell 11 DATE REPORTED: **March 20, 2015**

REFERENCE TRI JOB NO.: G150203

DATE RECEIVED: March 17, 2015

SAMPLES SENT BY: SKAPS, GA

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI CONTROL NUMBER*
1. R#37442.02	103030

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D5261	Mass Per Unit Area
2. ASTM D4632	Grab Tensile
3. ASTM D4833	Puncture Resistance
4. ASTM D6241	Static Puncture Resistance
5. ASTM D4751	Apparent Opening Size
6. ASTM D4491	Permittivity
7. ASTM D4533	Trapezoidal Tear Resistance

TEST RESULTS: The test results are summarized in the attached Table 1.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Retained conformance samples are disposed of after one (1) month.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

3 Pages Total

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **3/17/2015**
Date Reported: **3/20/2015**
Client Sample ID: **R#37442.02**
Material Description: **8oz Non-Woven Geotextile**

QC'd By: Maria Espitia
TRI Job No.: **G150203**
TRI Control No.: **103030**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D5261	Mass per Unit Area (oz/ yd.^{2})															
	Test Specimen Size: 4" x 8"															
		8.4	8.7	8.8	8.5	9.1						8.7	0.3	8.4	9.1	8.0
ASTM D4632	Grab Tensile															
	Test was performed as directed in D4632, dry condition. Instron Tensile Testing Machine with hydraulic action grips and 1 in x 2 in rubber faces was used. Maximum load used for testing: 1500 lbs															
	Grab Breaking Load (lbs)															
	MD	220	226	236	227	236	240	236	229	237	240	233	7	220	240	200
	TD	260	259	260	257	250	247	241	250	250	247	252	7	241	260	
	Apparent Breaking Elongation (percent)															
	MD	77	73	72	77	76	75	77	73	73	75	75	2	72	77	-
	TD	87	90	94	92	87	86	87	90	91	89	89	2	86	94	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended to or beyond the outer edges of the clamping plates.															
		151	147	150	157	162	155	143	144	150	152	149	6	140	162	-
		150	147	140	144	150										
ASTM D4533	Trapezoid Tear Strength (lbs)															
	Specimens were tested as directed in Test Method D4533, dry condition.															
	MD	101	99	100	106	111	108	100	103	102	110	104	4	99	111	75
	TD	120	119	107	126	125	120	117	115	116	120	119	5	107	126	

Continued on next page

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

1160 North Gilbert Street, Anaheim, CA 92801, www.precisionlabs.net
Precision Geosynthetic Laboratories International dba TRI Environmental, Inc.

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Brantley Engineering, LLC

PROJECT: JED Cell 11

Date Received: **3/17/2015**
Date Reported: **3/20/2015**
Client Sample ID: **R#37442.02**
Material Description: **8oz Non-Woven Geotextile**

QC'd By: Maria Espitia
TRI Job No.: **G150203**
TRI Control No.: **103030**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. MARV
ASTM D4491	Permittivity (sec.$^{-1}$)															
Constant Head	*Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen. BT Technology permittivity testing apparatus compliant to ASTM D4491 requirements was used.*	**1.75**	**1.79**	**1.71**	**1.69**							**1.73**	**0.04**	**1.69**	**1.79**	**0.5**
	Permeability (cm./ sec.)	**0.53**	**0.48**	**0.46**	**0.55**							**0.50**	**0.04**	**0.46**	**0.55**	**-**
	Flow Rate (gpm/ ft.^{2})	**131**	**134**	**128**	**126**							**130**	**3**	**126**	**134**	**-**
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.	**70-100**	**70-100**	**70-100**	**70-100**	**70-100**						**70-100**	N/A	N/A	N/A	**-**
ASTM D4751	Apparent Opening Size (mm)															
	Specimens were tested as directed in Test Method D4751.Type of sieve shaker used is W.S. Tyler Rotap.	**0.202**	**0.198**	**0.200**	**0.198**	**0.190**						**0.198**	**0.005**	**0.190**	**0.202**	**≤ 0.21**
ASTM D6241	Static Puncture Strength (lbs)															
	The specimens were tested in accordance with ASTM D6241. Specimens were conditioned for 1 hr in the laboratory at 21+/-5° C (75+/-3.6oF) and at 60%+/-10 Relative Humidity. Specimens were secured between the holding plates ensuring that they extended to or beyond the outer edges of the clamping plates.	**847**	**806**	**977**	**888**	**969**	**987**	**741**	**801**	**858**	**809**	**868**	**85**	**741**	**987**	**500**
	Deflection @ Maximum Force (in)	**2.2**	**2.5**	**2.3**	**2.4**	**2.4**	**2.5**	**2.9**	**2.6**	**2.4**	**2.3**	**2.4**	**0.2**	**2.2**	**2.9**	

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental Inc from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

1160 North Gilbert Street, Anaheim, CA 92801, www.precisionlabs.net
Precision Geosynthetic Laboratories International dba TRI Environmental, Inc.

Section 5
Interface Friction Test

Technical Memorandum

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BOB MARTINEZ CENTER
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

JONATHAN P. STEVERSON
SECRETARY

March 30, 2015

E-Mail
Michael.kaiser@progressivewaste.com

Mike Kaiser
Omni Waste of Osceola County, LLC
1501 Omni Way
St. Cloud, FL 34773

RE: Geosynthetic Clay Liner (GCL) Internal Shear Strength Testing Results
J.E.D. Solid Waste Management Facility – Class I
WACS ID # 89544, Osceola County

Dear Mr. Kaiser,

On March 17, 2015, the Department received a forwarded draft letter of opinion from Craig Browne of Geosyntec discussing the results of recent conformance testing on the GCL provided for the Cell 11 project. The letter described the testing results of the GCL which revealed the material did not meet the specified residual Shear strength per project specifications. The material did however have sufficient strength to maintain stability. On March 18, 2015, Craig Browne provided additional information regarding the product from the manufacturer, CETCO Environmental Products Group. This information further justified the reduced residual shear strength was adequate to maintain stability. On March 27, 2015, following discussions with Department Staff Craig Browne, provided a final signed and sealed memo regarding the internal shear strength of the material.

In accordance with Rule 62-701.400(2), F.A.C., designs to prevent failures of side slopes, and designs to prevent deep-seated failures through the waste, along liner systems, and through foundation soils, shall achieve a minimum factor of safety of 1.5 using peak strength values. Based upon review of the memo provided by Craig Browne of Geosyntec the material conforms to Rule 62-701.400(2), F.A.C. Therefore the Department concurs the material is suitable for use in the construction of Cell 11.

Please include a copy of this Department approval along with the March 27, 2015 signed and sealed memo within the final Certification of Construction Completion package.

If you have any questions, feel free to contact Cory Dilmore by phone at (850)-245-8712, or by email at cory.dilmore@dep.state.fl.us .

Sincerely,

Cory Dewayne Dilmore P.E., PE III
Permitting and Compliance Assistance Program

Enclosure – March 27, 2015 signed and sealed memo from Craig Browne of Geosyntec

Cc:

Craig Browne, P.E., Geosyntec Consultants, Inc., cbrowne@geosyntec.com
Kim Rush, P.E., Program Administrator, DEP Central District, Kim.Rush@dep.state.fl.us
F. Thomas Lubozynski, P.E., DEP Central District, Tom.Lubozynski@dep.state.fl.us
El Kromhout, P.G., DEP PCAP – SWPP, elizabeth.kromhout@dep.state.fl.us
Richard Tedder, P.E., Environmental Administrator, DEP PCAP – SWPP, richard.tedder@dep.state.fl.us

TECHNICAL MEMORANDUM

TO: Mike Kaiser, P.E. Progressive Waste Solutions of Florida

FROM: Craig Browne, P.E., Geosyntec Consultants (Geosyntec)

REVIEWED BY: Kwasi Badu-Tweneboah, PhD, P.E., Geosyntec

DATE: 17 March 2015

SUBJECT: Evaluation of GCL Residual Internal Shear Strength Test Results for JED Cell 11 Construction

---

Introduction

This technical memorandum presents an evaluation of the internal shear strength test results performed on geosynthetic clay liner (GCL) material proposed for use in constructing Cell 11 at the J.E.D. Solid Waste Management Facility (JED facility), a Class I landfill owned by Omni Waste of Osceola County, LLC (Omni), located in Holopaw, Florida. Omni is a subsidiary of Progressive Waste Solutions of Florida, Inc. (PWSFL). The remainder of this memorandum provides a brief summary of the technical specifications, a description of the internal shear strength testing, and an evaluation of the internal shear strength test results.

GCL Technical Specification

The currently approved GCL technical specification (GCL Specification- (Section 02780) for the JED facility Cell 11 construction is provided in **Attachment 1** for reference. This GCL Specification was last modified and approved by FDEP as part of the JED Lateral Expansion Major Modification in 2007. As described in Part 2.01.E of the GCL Specification, the proposed GCL material is to be tested at normal stresses of 5,000, 10,000 and 15,000 pounds per square foot (psf) and the peak and large-

displacement (3-inch displacement) shearing resistance is to be reported. The peak internal shear strength shall equal or exceed an envelope characterized an internal friction angle of 11 degrees assuming no cohesion. The minimum large-displacement, or residual, internal shear strength is to meet or exceed an effective friction angle of 6.5 degrees assuming no cohesion. It should be noted that the FDEP solid waste regulations (Rule 62-701.400(2), FAC) require slope stability analyses to be performed based on peak strength properties only.

Description of GCL Internal Shear Strength Testing for Cell 11

Bentomat ST GCL (330) material has been proposed for use in the JED Cell 11 construction. Samples of this material were tested by TRI/Environmental on 5 to 6 March 2015 and the results are provided in **Attachment 2**. As shown in **Attachment 2**, the minimum peak friction angle, assuming zero cohesion (also termed the peak secant angle) is 30.6 degrees for the test performed at 15,000 psf normal stress. This exceeds the minimum peak internal friction angle of 11 degrees in the GCL Specification. However, the minimum large-displacement friction angle, assuming zero cohesion (also termed the large displacement secant angle) is 6.0 degrees for the test performed at 15,000 psf normal stress. Because this value did not meet the specified minimum of 6.5, the internal residual shear strength was further evaluated as described below.

Evaluation of Test Results

The GCL Specification was not modified as part of the recent Intermediate Permit Modification Application for the Base Grade Revisions (submitted to FDEP on 11 December 2014), which was approved under FDEP Permit No. SO49-0199726-026. As such, the minimum measured residual shear strength for the proposed GCL (6.0 degrees at 15,000 pounds per square foot (psf), assuming zero adhesion) was used to re-run the slope stability calculations performed for the liner waste-block failure case and a corresponding factor of safety of 1.1 was computed as shown in **Attachment 3**. This exceeds the minimum recommended factor of safety of 1.0 by Gilbert and Byrne (1996) when making the conservative assumption that residual shear strengths have been mobilized along the entire slip surface. It is noted that at normal stresses less than 15,000 psf, the internal shear strength of the GCL is greater than 6.0 degrees, indicating that the use of 6.0 degrees along the entire slip surface is conservative.

As required by technical specification Section 02790, Interface Friction Conformance Testing, a "sandwich" interface friction test was also run using the actual materials proposed for construction of the Cell 11 base liner system. Results of the sandwich test, provided in **Attachment 4**, show that the weakest interface is between the geocomposite drainage layer and the primary geomembrane with a corresponding peak interface friction angle of 17.5 degrees (minimum peak secant angle, which assumes zero adhesion). As such, it is unlikely that shearing within the GCL, which would engage the internal shear strength of the GCL, would occur. As also indicated above, slope stability evaluations using peak strength properties are required by Rule 62-701.400(2), FAC and the measured test results all meet the minimum peak shear strength properties of the technical specifications.

Closure

Based on the data and evaluation presented above, the proposed Bentomat ST GCL material can be approved for use in the base liner system of Cell 11.

References

Gilbert, R.B. and Byrne, R.J., 1996, "Strain-Softening Behavior of Waste Containment Interfaces", Geosynthetics International, Vol. 3, No. 2, pp. 181-203.

ATTACHMENT 1

SECTION 02780

GEOSYNTHETIC CLAY LINER

PART 1 GENERAL

1.01 SCOPE

A. This section includes the requirements for geosynthetic clay liner (GCL) products and placement.

1.02 RELATED SECTIONS AND PLANS

A. Section 02200 - Earthwork

B. Section 02225 - Low Permeability Layer

C. Section 02740 - Geocomposites

D. Section 02770 - Geomembrane

E. Construction Quality Assurance (CQA) Plan

1.03 REFERENCES

A. Latest version of American Society of Testing and Materials (ASTM) standards and other standards noted in this specification.

1.04 SUBMITTALS

A. Submit to the Engineer for review not less than 21 calendar days prior to use the following information regarding the GCL proposed for the project.
   1. manufacturer and product name;
   2. evidence that the manufacturer has more than two years of experience in the manufacturing of GCL;
   3. manufacturer's quality control procedures;
   4. manufacturer's requirements for the geotextile component of the GCL that include (as a minimum) mass per unit area, grab strength, and grab elongation;
   5. certification that manufacturer's requirements for geotextile component of GCL are met;
   6. certification of minimum average roll values (95 percent lower confidence limit) and the corresponding test procedures for all GCL properties listed in Table 02780-1; and
   7. manufacturer's recommended procedures for overlapping adjacent GCL panels.

B. Submit to the Engineer for review at least 14 days prior to GCL placement the manufacturing quality control certificates for each roll of GCL as specified in this section. Submit certificates signed by the manufacturer quality control manager. The quality control certificates shall include:
   1. lot, batch, or roll numbers and identification;
   2. sampling procedures; and
   3. results of Manufacturer quality control tests.

C. For each proposed GCL material, the Contractor shall submit for review by the Engineer at least 14 calendar days prior to transporting the GCL to the site the results of manufacturing quality control testing and certification that the GCL is manufactured to meet the minimum internal shear strength requirements of this section and the minimum interface shear strength requirements of Section 02790.

1.05 CONSTRUCTION QUALITY ASSURANCE

A. The installation of the GCLs will be monitored by the CQA Consultant as required by the CQA Plan.

B. The CQA Consultant will perform material conformance testing of the GCLs.

C. The Contractor shall be aware of the activities required of the CQA Consultant per the CQA Plan and shall account for these activities in the installation schedule.

D. The Contractor shall correct all deficiencies and nonconformances identified by the CQA Consultant and shall do so at no additional cost to the Owner.

PART 2 PRODUCTS

2.01 GCL

A. Furnish GCL with internally-reinforced bentonite core and woven and/or nonwoven geotextile backings. The GCL must be free of broken needles or fragments of needles.

B. Furnish GCL having properties that comply with the required values shown in Table 02780-1.

C. GCL consisting of an internally-reinforced bentonite core with woven and/or nonwoven geotextile backings shall meet the following requirements:
   1. Hydraulic conductivity is equal to or less than 5×10^{-9} centimeters per second, when measured in a flexible wall permeameter in accordance with ASTM D 5887 under an effective confining stress of 5 pounds per square inch.
   2. Minimum roll width is 15 feet.
   3. Minimum roll length is 100 feet.

4. Bentonite component is at least 90 percent sodium montmorillonite.
5. Bentonite component is applied at a minimum rate of 0.75 pounds per square foot, when measured on an oven-dried sample.
6. Geotextile backings are woven and/or nonwoven materials, respectively, manufactured with polypropylene or polyester material, and conforming to the minimum property values shown in Table 02780-1.
7. Needlepunching is used to bind geotextile backings and bentonite core.
8. Bentonite is contained by the geotextiles in a manner that prevents more than nominal dislodgment of bentonite during GCL transportation, handling, and installation.

D. Furnish GCL that meets the internal shear strength requirements of this section and interface shear strength requirements of Section 02790 as tested by an approved testing laboratory. Tests will be performed in accordance with ASTM D 6243 and as specified below on representative samples of GCL destined for use on this project. The source of the representative samples will be provided with the test results. The GCL will be tested for:
   1. internal shear strength in accordance with this section; and
   2. interface shear strength in accordance with Section 02790.

E. The testing laboratory will follow the specific procedures and conditions listed below:
   1. Place the materials to be tested with their machine directions aligned in the direction of shear in the shear box. For the internal shear strength test, use a test specimen configuration of (from bottom to top): rigid substrate with textured gripping surface, GCL, and rigid substrate with textured gripping surface.
   2. Perform the direct shear tests at normal stresses of 5,000, 10,000 and 15,000 pounds per square foot (psf), and report the peak and large-displacement (3-inch displacement) shearing resistance for each test.
   3. Use fresh specimens for each normal stress.
   4. Repeat any tests for which the shear displacements do not occur within the desired material (internal strength).
   5. The testing laboratory shall report peak and large-displacement internal shear strength of GCL. The peak internal shear strength envelope for the GCL shall equal or exceed an envelope characterized by an effective friction angle of 11.0° assuming no cohesion. The large-displacement internal shear strength envelope for the GCL shall exceed an envelope characterized by an effective friction angle of 6.5° assuming no cohesion.

2.02 MANUFACTURING QUALITY CONTROL

A. Sample and test the GCL to demonstrate that the material complies with the requirements of this section.

B. Perform manufacturing quality control tests to demonstrate that GCL properties conform to the requirements in Table 02780-1. Perform the following tests at the minimum frequency indicated below with a minimum of one test per lot.

Test	Frequency
Bentonite content	45,000 sq. ft
Bentonite moisture content	45,000 sq. ft
Bentonite free swell	50 ton
Hydraulic conductivity	100,000 sq. ft
Tensile/Grab strength	45,000 sq. ft
Peel	45,000 sq. ft

C. Comply with the certification and submittal requirements of this section.

D. If a GCL sample fails to meet the quality control requirements of this section, sample and test rolls fabricated at the same time and in the same lot as the failing roll. Continue to sample and test the rolls until the extent of the failing rolls are bracketed by passing rolls. Do not supply the failing rolls.

2.03 PACKING AND SHIPPING

A. Supply GCL in rolls wrapped in impermeable and opaque protective covers.

B. Mark or tag GCL rolls with the following information:
1. manufacturer's name;
2. product identification;
3. lot number;
4. roll number;
5. roll weight; and
6. roll dimensions.

C. GCL rolls not labeled in accordance with this section or on which labels are illegible upon delivery to the project site will be rejected and replaced at no additional expense to the Owner.

D. Deliver the GCL to the site at least 14 calendar days prior to the scheduled installation date to allow the CQA Consultant to obtain conformance samples and complete conformance testing as described in the CQA Plan.

2.04 HANDLING AND STORAGE

A. Handle, store, and care for the GCL in a manner that does not cause hydration or damage.

B. Protect the GCL from moisture, excessive heat or cold, puncture, or other damaging or deleterious conditions. Store the GCL rolls on pallets or other elevated structures. Do not store GCL rolls directly on the ground surface. Cover the GCL entirely with a tarp. Store GCL rolls out of direct sunlight. Follow any additional storage procedures required by the Manufacturer.

PART 3 EXECUTION

3.01 SURFACE PREPARATION

A. Provide certification in writing that the surface on which the GCL will be installed is acceptable as described below. Give this certification of acceptance to the CQA Consultant prior to commencement of GCL installation in the area under consideration.

B. Maintain the prepared soil surface until the GCL is placed. The subgrade should be rolled with a smooth-drum compactor to remove any wheel ruts, footprints, or other abrupt grade changes before placement of the GCL.

C. Do not place the GCL onto an area that has been softened by precipitation or that has cracked due to desiccation. Repair such areas in accordance with Section 02200 or Section 02225.

3.02 PLACEMENT

A. Do not commence GCL placement until the CQA Consultant completes conformance evaluation of this material and performance evaluation of previous work, including Contractor's survey results for previous work.

B. Weight GCL with sandbags or other means to prevent uplift or movement in wind. Immediately remove and replace any damaged or leaking sandbags.

C. Cut the GCL using a utility blade. Do not damage underlying material during cutting and fully repair any such damage.

D. Do not entrap stones or other foreign objects under the GCL. Do not drag equipment across the exposed GCL.

E. Replace any GCL that is damaged by any means including foreign objects, or installation activities.

F. Install GCLs in accordance with Manufacturer’s recommendation (i.e., typically geotextile on the outside of the roll facing down).

G. Do not install the GCL on a wet subgrade or in standing water. Prevent hydration of the bentonite core prior to completion of construction of the liner system.

H. Do not install the GCL during precipitation or other conditions that may cause hydration of the GCL.

I. Install the overlying geomembrane as soon as possible following GCL installation. Cover all GCL that is placed during a workday with overlying geomembrane. Cover and protect the edges of GCL from hydration due to storm water run-on.

J. Remove and replace GCL that becomes hydrated. Hydration is defined by a moisture content of 40 percent or greater when measured in accordance with ASTM D 2216 or ASTM D 4643. However, the CQA Consultant shall be responsible for evaluating cases of GCL hydration and determining if the GCL needs to be removed and replaced.

K. Place earthen and other geosynthetics material components of the liner system over the GCL as soon after installation of the GCL as possible, but in no case longer than 7 days after the first GCL is placed.

3.03 OVERLAPS

A. On slopes steeper than 5 horizontal to 1 vertical, install GCLs continuously down the slope; that is, allow no horizontal seams on the slope.

B. Allow no horizontal seams on the base of the landfill within 5 feet of the toe of a slope.

C. Overlap GCL in strict accordance with the Manufacturer's recommended procedures. As a minimum, overlap adjacent panels at least 6 inches along the sides and 12 inches along the ends.

3.04 MATERIALS IN CONTACT WITH THE GCL

A. Perform installation of other components in a manner that prevents damage to the GCL.

B. Do not drive equipment directly on the GCL.

C. Install the GCL in appurtenant areas, and connect the GCL to appurtenances as indicated on the Construction Drawings. Do not damage the GCL while working around the appurtenances.

3.05 REPAIR

A. Repair any holes or tears in the GCL by placing a GCL patch over or under the hole. On slopes greater than 5 percent, the patch shall overlap the edges of the hole or tear by a minimum of 2 feet in all directions. On slopes 5 percent or flatter, the patch shall overlap the edges of the hole or tear by a minimum of 1 foot in all directions. Secure the patch with a water-based adhesive approved by the Manufacturer.

B. Remove any soil or other material that may have penetrated the torn GCL.

C. Do not nail or staple the patch.

TABLE 02780-1

REQUIRED GCL PROPERTY VALUES

PROPERTIES	QUALIFIERS	UNITS [4]	SPECIFIED VALUES [1]	TEST METHOD
GCL Properties [7]				
Bentonite Content [2]	Minimum	lb/ft^2	0.75	ASTM D 5993
Bentonite Moisture Content	Maximum	%	35	ASTM D 5993 or 2216
Bentonite Free Swell	Minimum	ml/2g	24	ASTM D 5890
Hydraulic Conductivity [5,6]	Maximum	cm/s	5×10^{-9}	ASTM D 5887
Tensile / Grab Strength [3]	Minimum	ppi / lb	23 / 90	ASTM D 6768 / 4632
Peel Strength [3]	Minimum	ppi / lb	2.1 / 15	ASTM D 6496 / 4632
Geotextile Properties				
Polymer Composition	Minimum	%	95 polyester or polypropylene	

Notes:
1. All values represent minimum average roll values.
2. Measured on an oven dried sample.
3. For geotextile backed GCLs.
4. lb/ft^2 = pounds per square foot
   cm/s = centimeter per second
   % = percent
   lb = pound
   ppi = pounds per inch
   ml/2g = milliliters per two grams
5. The GCL test specimen shall be hydrated with the fluid which is expected to cause hydration in the field, or similar fluid, for a minimum of 48 hours using sufficient backpressure to achieve a minimum B coefficient of 0.9 and using a confined effective consolidation stress not exceeding five pounds per square inch. Then, the hydraulic conductivity test on the GCL specimen shall be conducted, using the appropriate permeant fluid, at a confined effective consolidation stress not exceeding five pounds per square inch. The hydraulic conductivity test shall continue until steady state conditions are reached or a minimum of two pore volumes of permeant fluid have passed through the test specimen. The permeant fluid shall be either leachate from the landfill (or similar landfill) if the GCL is used in a liner system.
6. Hydraulic conductivity may be performed using water once the relationship between hydraulic conductivities measured using the appropriate permeant fluid and water is established for the GCL product being supplied for the project.
7. See Paragraph 2.02 for required MQC test frequencies.

[END OF SECTION]

ATTACHMENT 2

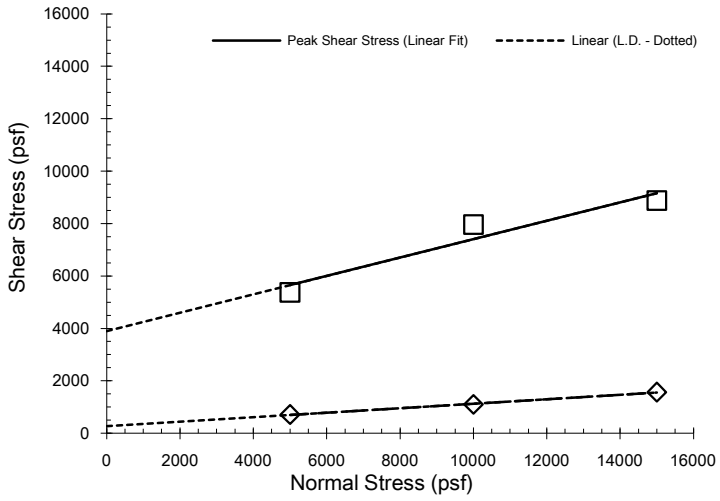
Interface Friction Test Report

Client: **Brantley Engineering**
Project: **JED Cell 11**
Date: 03-05-2015 to 03-06-2015

TRI Job#: G150073
Test Method: ASTM D6243

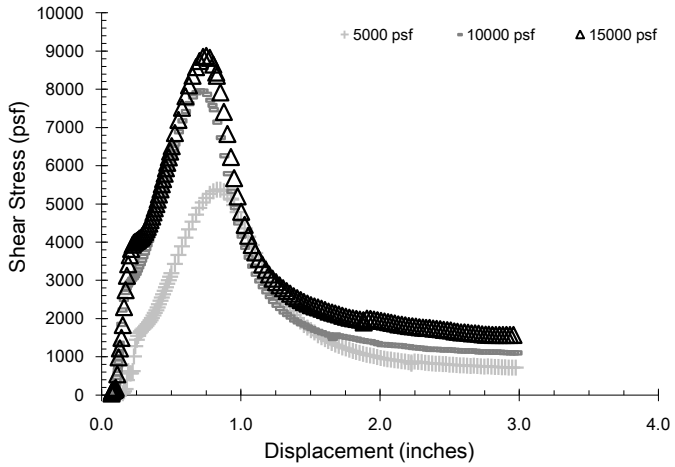
John M. Allen, P.E., 03/09/2015
Quality Review/Date

Tested Interface: Internal Shear of Bentomat ST GCL (330)



Test Results		
	Peak	Large Displacement (@ 3.0 in.)
Friction Angle (degrees):	19.3	4.9
Y-intercept or Adhesion (psf):	3899	274

The GCL sheared internally.



Test Conditions

Upper Box &

Bentomat ST GCL

Lower Box

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

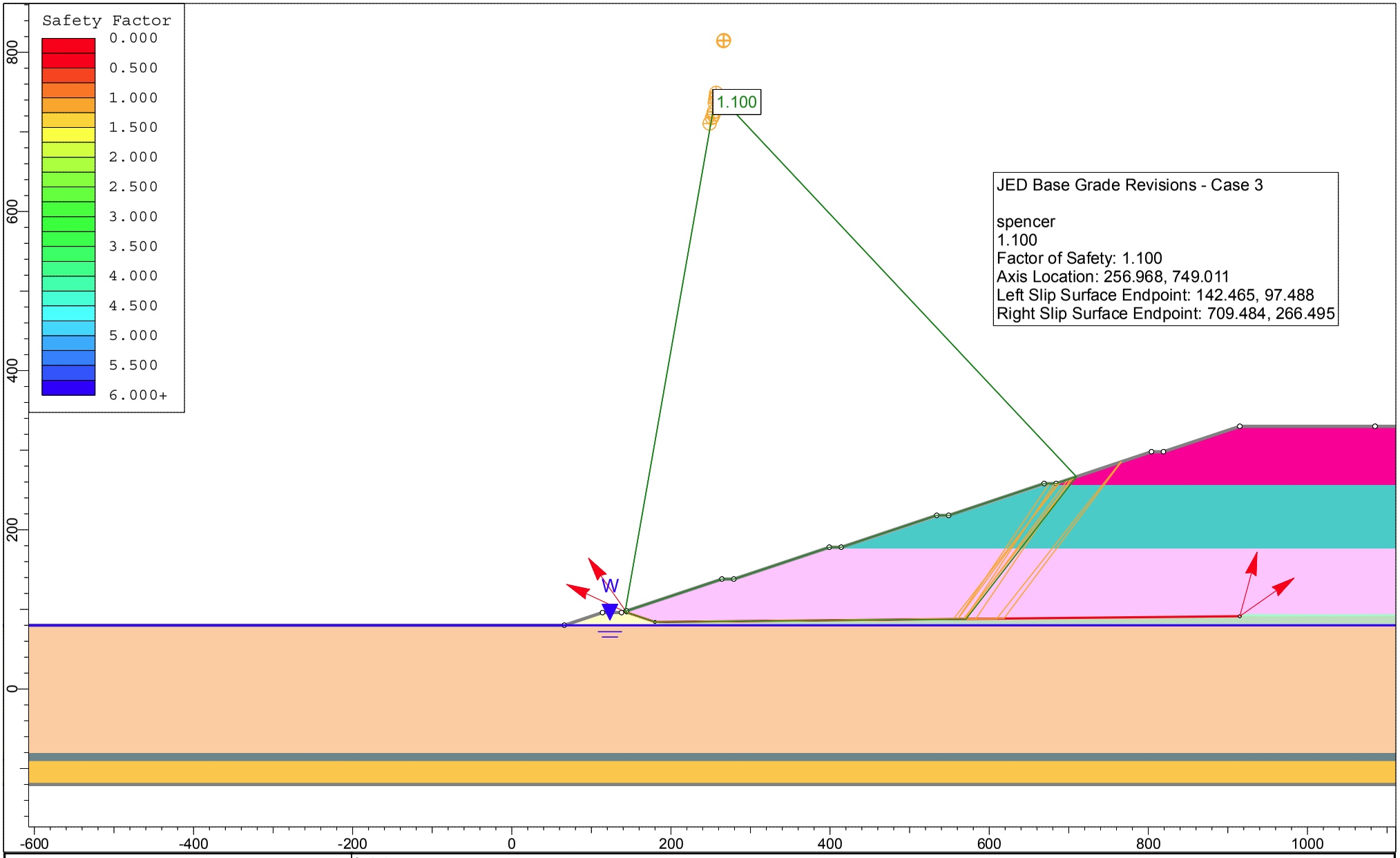
Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	56	103	151
Normal Stress (psf)	5000	10000	15000
Corrected Peak Shear Stress (psf)	5372	7963	8877
Corrected Large Displacement Shear Stress (psf)	714	1103	1568
Peak Secant Angle (degrees)	47.1	38.5	30.6
Large Displacement Secant Angle (degrees)	8.1	6.3	6.0
Asperity for shiny side (mils)	- -	- -	- -

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

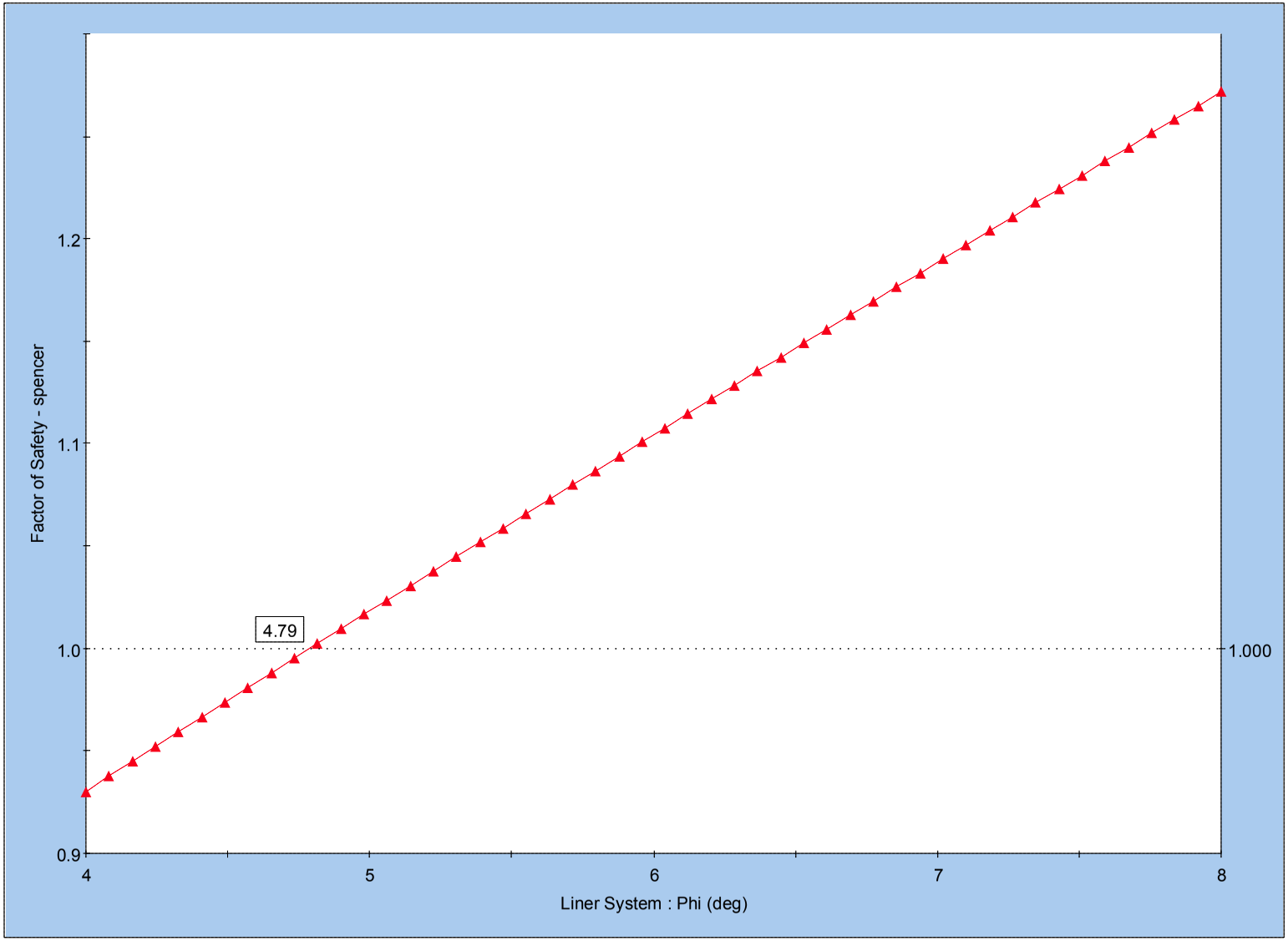
ATTACHMENT 3



Geosyntec consultants
engineers | scientists | innovators

SLIDEINTERPRET 6.034

Project	JED Base Grade Revisions - Case 3		
Analysis Description			
Drawn By		Scale 1:2000	Date 3/13/2015
Description			File Name Case 3 - 3to1_15wide_found_Liner-Block.slim



Geosyntec consultants engineers | scientists | innovators	Project: JED Base Grade Revisions - Case 3		
	Analysis Description		
	Drawn By	Scale	Date: 3/13/2015
	Description		File Name: Case 3 - 3to1_15wide_found_Liner-Block.slim

SLIDEINTERPRET 6.034

Slide Analysis Information

JED Base Grade Revisions - Case 3

Project Summary

File Name: Case 3 - 3to1_15wide_found_Liner-Block
Slide Modeler Version: 6.034
Project Title: JED Base Grade Revisions - Case 3

General Settings

Units of Measurement: Imperial Units
Time Units: seconds
Permeability Units: feet/second
Failure Direction: Right to Left
Data Output: Standard
Maximum Material Properties: 20
Maximum Support Properties: 20

Analysis Options

Analysis Methods Used

Spencer

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50
Check malpha < 0.2: Yes
Initial trial value of FS: 1
Steffensen Iteration: Yes

Groundwater Analysis

Groundwater Method: Water Surfaces
Pore Fluid Unit Weight: 62.4 lbs/ft3
Advanced Groundwater Method: None

Random Numbers

Pseudo-random Seed: 10116
Random Number Generation Method: Park and Miller v.3

Surface Options

Surface Type: Non-Circular Block Search
Number of Surfaces: 5000
Pseudo-Random Surfaces: Enabled
Convex Surfaces Only: Enabled

Left Projection Angle (Start Angle): 125
Left Projection Angle (End Angle): 155
Right Projection Angle (Start Angle): 35
Right Projection Angle (End Angle): 75
Minimum Elevation: Not Defined
Minimum Depth: Not Defined

Material Properties

Property	Berm Fill	Compacted Subgrade	Silty Sand	Hawthorne Formation	Final Cover System	Liner System	Upper MSW	Middle MSW
Color								
Strength Type	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Shear Normal function	Shear Normal function
Unit Weight [lbs/ft3]	120	120	115	115	120	120	54	72
Cohesion [psf]	0	0	0	0	0	0		
Friction Angle [deg]	35	35	30	30	35	6		
Water Surface	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table
Hu Value	1	1	1	1	1	1	1	1

Shear Normal Functions

Name: MSW-Kavazanjian et al. 1995

Normal (psf)	Shear (psf)
0	500
625	500
24000	15680

Property	Lower MSW	Hawthorn-cohesive
Color		
Strength Type	Shear Normal function	Mohr-Coulomb
Unit Weight [lbs/ft3]	82	120
Cohesion [psf]		5000
Friction Angle [deg]		0
Water Surface	Water Table	Water Table
Hu Value	1	1

Shear Normal Functions

Name: MSW-Kavazanjian et al. 1995

Normal (psf)	Shear (psf)
0	500
625	500
24000	15680

Probabilistic Analysis Input

General Settings

Sensitivity Analysis: On
Probabilistic Analysis: Off

Variables

Material	Property	Distribution	Mean	Min	Max
Liner System	Phi	Normal	6	4	8

Global Minimums

Method: spencer

FS: 1.099660
Axis Location: 256.968, 749.011
Left Slip Surface Endpoint: 142.465, 97.488
Right Slip Surface Endpoint: 709.484, 266.495
Resisting Moment=4.66296e+008 lb-ft
Driving Moment=4.24036e+008 lb-ft
Resisting Horizontal Force=549120 lb
Driving Horizontal Force=499354 lb
Total Slice Area=42568.6 ft2

Global Minimum Coordinates

Method: spencer

X	Y
142.465	97.4882
144.3	96.1
180	84.1
570.851	87.9447
709.484	266.495

Valid / Invalid Surfaces

Method: spencer

Number of Valid Surfaces: 3769
Number of Invalid Surfaces: 1231

Error Codes:

Error Code -106 reported for 4 surfaces
Error Code -108 reported for 284 surfaces
Error Code -111 reported for 15 surfaces
Error Code -112 reported for 928 surfaces

Error Codes

The following errors were encountered during the computation:

-106 = Average slice width is less than 0.0001 * (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.
-108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
-111 = safety factor equation did not converge
-112 = The coefficient M-Alpha = cos(alpha)(1+tan(alpha)tan(phi)/F) < 0.2 for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.

Slice Data

Global Minimum Query (spencer) - Safety Factor: 1.09966

Slice Number	Width [ft]	Weight [lbs]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]
1	1.83539	220.247	Final Cover System	0	35	298.45	328.193	468.71	0	468.71
2	35.7	45967.8	Liner System	0	6.00001	141.551	155.658	1480.99	0	1480.99
3	26.0567	68206.1	Liner System	0	6.00001	254.974	280.385	2667.69	0	2667.69
4	26.0567	86216.4	Liner System	0	6.00001	322.302	354.423	3372.11	0	3372.11
5	26.0567	104227	Liner System	0	6.00001	389.631	428.462	4076.52	0	4076.52
6	26.0567	117019	Liner System	0	6.00001	437.452	481.049	4576.87	0	4576.87
7	26.0567	129564	Liner System	0	6.00001	484.351	532.621	5067.55	0	5067.55
8	26.0567	147575	Liner System	0	6.00001	551.679	606.659	5771.97	0	5771.97
9	26.0567	165585	Liner System	0	6.00001	619.007	680.697	6476.4	0	6476.4
10	26.0567	183596	Liner System	0	6.00001	686.335	754.735	7180.83	0	7180.83
11	26.0567	198321	Liner System	0	6.00001	741.384	815.27	7756.78	0	7756.78
12	26.0567	207757	Liner System	0	6.00001	776.658	854.06	8125.84	0	8125.84
13	26.0567	223504	Liner System	0	6.00001	835.526	918.794	8741.74	0	8741.74
14	26.0567	239252	Liner System	0	6.00001	894.394	983.529	9357.63	0	9357.63
15	26.0567	254999	Liner System	0	6.00001	953.258	1048.26	9973.57	0	9973.57
16	26.0567	269348	Liner System	0	6.00001	1006.9	1107.25	10534.8	0	10534.8
17	26.0567	277325	Liner System	0	6.00001	1036.72	1140.04	10846.8	0	10846.8
18	1.48659	16115.2	Liner System	0	6.00001	751.761	826.682	7865.33	0	7865.33
19	22.2944	219241	Lower MSW	94.1176	33.0002	3082.3	3389.48	5074.39	0	5074.39
20	22.2944	178678	Lower MSW	94.1176	33.0002	2522.69	2774.1	4126.78	0	4126.78
21	22.2944	138114	Lower MSW	94.1176	33.0002	1963.08	2158.72	3179.2	0	3179.2
22	31.0576	130981	Middle MSW	94.1176	33.0002	1354.81	1489.83	2149.2	0	2149.2
23	31.0576	54881.6	Middle MSW	94.1176	33.0002	601.178	661.092	873.058	0	873.058
24	6.05347	2397.31	Upper MSW	500	0	454.686	500	-80.282	0	-80.282
25	2.09513	251.416	Final Cover System	0	35	41.8588	46.0304	65.7383	0	65.7383

Interslice Data

Global Minimum Query (spencer) - Safety Factor: 1.09966

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	142.465	97.4882	0	0	0
2	144.3	96.1	1197.82	275.623	12.9584
3	180	84.1	24017.4	5526.47	12.9584
4	206.057	84.3563	29970.1	6896.19	12.9583
5	232.113	84.6126	37494.6	8627.6	12.9583
6	258.17	84.8689	46590.9	10720.7	12.9584
7	284.227	85.1253	56803.7	13070.7	12.9584
8	310.284	85.3816	68111.4	15672.6	12.9583
9	336.34	85.6379	80990.9	18636.2	12.9583
10	362.397	85.8942	95442.3	21961.5	12.9583
11	388.454	86.1505	111466	25648.5	12.9583
12	414.51	86.4068	128774	29631.2	12.9583
13	440.567	86.6631	146906	33803.4	12.9583
14	466.624	86.9194	166412	38291.9	12.9584
15	492.681	87.1758	187293	43096.5	12.9583
16	518.737	87.4321	209548	48217.5	12.9583
17	544.794	87.6884	233055	53626.5	12.9583
18	570.851	87.9447	257258	59195.8	12.9584
19	572.337	89.8593	243315	55987.5	12.9584
20	594.632	118.573	166253	38255.4	12.9584
21	616.926	147.286	103938	23916.4	12.9583
22	639.221	176	56369.4	12970.7	12.9583
23	670.278	216	12432.1	2860.65	12.9583
24	701.336	256	-3839.81	-883.55	12.9583
25	707.389	263.796	-464.522	-106.888	12.9584
26	709.484	266.495	0	0	0

List Of Coordinates

Water Table

X	Y
-953.45	80
1200	80

Block Search Polyline

X	Y
144.3	96.1
180	84.1
915	91.33

External Boundary

X	Y
684	258

669	258
549	218
534	218
414	178
399	178
279	138
264	138
144	98
137.891	95.9638
114	96
66	80
-953.45	80
-953.45	-80
-953.45	-90
-953.45	-120
1200	-120
1200	-90
1200	-80
1200	80
1200	92.66
1200	94.66
1200	136
1200	176
1200	216
1200	256
1200	328
1200	319.516
1200	330
1085	330
915	330
819	298
804	298

Material Boundary

X	Y
146	80
192	80
1200	80

Material Boundary

X	Y
137.891	95.9638
144	96
180	84
192	80

Material Boundary

X	Y
180	86
915	93.23
1200	94.66

Material Boundary

X	Y
150	96
180	86

Material Boundary

X	Y
-953.45	-80
1200	-80

Material Boundary

X	Y
684	256
1200	256

Material Boundary

X	Y
549	216
1200	216

Material Boundary

X	Y
180	84
915	91.23
1200	92.66

Material Boundary

X	Y
264	136
279	136
399	176
414	176
534	216
549	216
669	256
684	256
804	296

Material Boundary

X	Y
804	296
819	296
915	328
1085	328
1200	328

Material Boundary

X	Y
147	97
148.5	96.5
150	96

Material Boundary

X	Y
144	96
147	97

Material Boundary

X	Y
147	97
264	136

Material Boundary

X	Y
1200	328
1200	330

Material Boundary

X	Y
414	176
1200	176

Material Boundary

X	Y
279	136
1200	136

Material Boundary

X	Y
66	80
146	80

Material Boundary

X	Y
-953.45	-90
1200	-90

ATTACHMENT 4

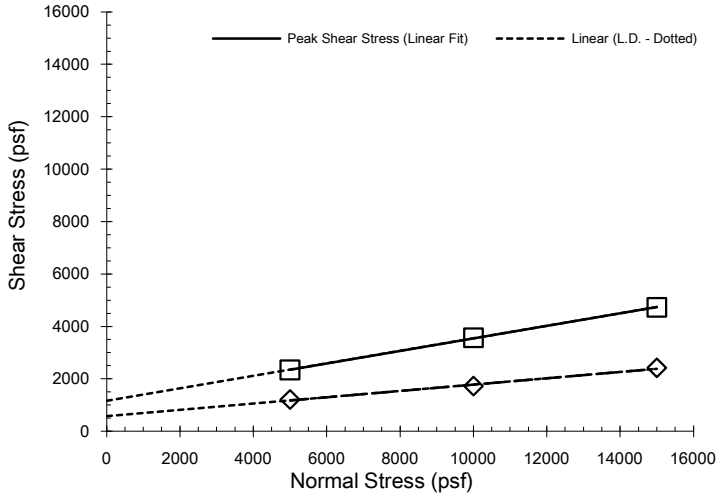
Interface Friction Test Report

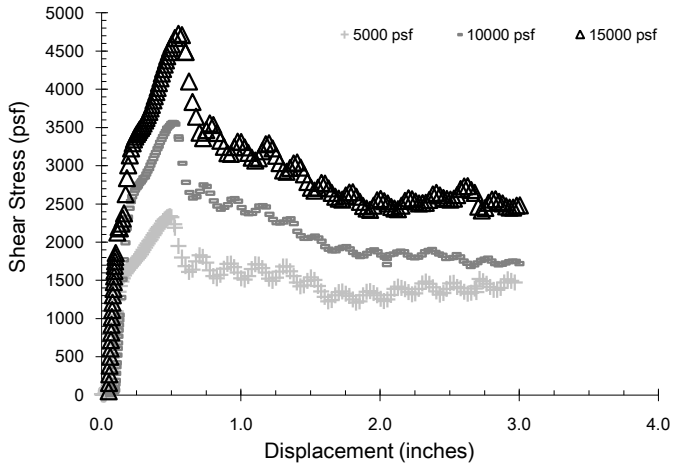
Client: **Brantley Engineering**
Project: **JED Cell 11**
Date: 03-04-2015 to 03-06-2015

TRI Job#: G150073
Test Method: ASTM D6243

John M. Allen, P.E., 03/09/2015
Quality Review/Date

Tested Interface: Compacted Subbase vs. Bentomat ST GCL (330) vs. Agru 60 mil HDPE Microspike Geomembrane (G15F081010) vs. Skaps TN270-2-6 Double-sided Geocomposite (63241010001) vs. Agru 60 mil HDPE Microspike Geomembrane (G15F081010)





Test Results		
	Peak	Large Displacement (@ 3.0 in.)
Friction Angle (degrees):	13.4	6.9
Y-intercept or Adhesion (psf):	1158	572

Shearing occurred at the geocomposite/primary geomembrane interface.

Test Conditions

Upper Box &	Compacted Subbase remolded to 95% of maximum dry density at the optimum mositure content or 97.3 pcf at 15.70%
Floating	Bentomat ST GCL (white side up)
Floating	Agru 60 mil HDPE Microspike geomembrane (shiny side up) over Skaps TN270-2-6 double-sided geocomposite
Lower Box	Agru 60 mil HDPE Microspike geomembrane (shiny side up)

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	56	103	151
Normal Stress (psf)	5000	10000	15000
Corrected Peak Shear Stress (psf)	2339	3567	4725
Corrected Large Displacement Shear Stress (psf)	1207	1720	2416
Peak Secant Angle (degrees)	25.1	19.6	17.5
Large Displacement Secant Angle (degrees)	13.6	9.8	9.1
Asperity for shiny side (mils)	36.8	35.8	35.8

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Initial Interface Testing Results

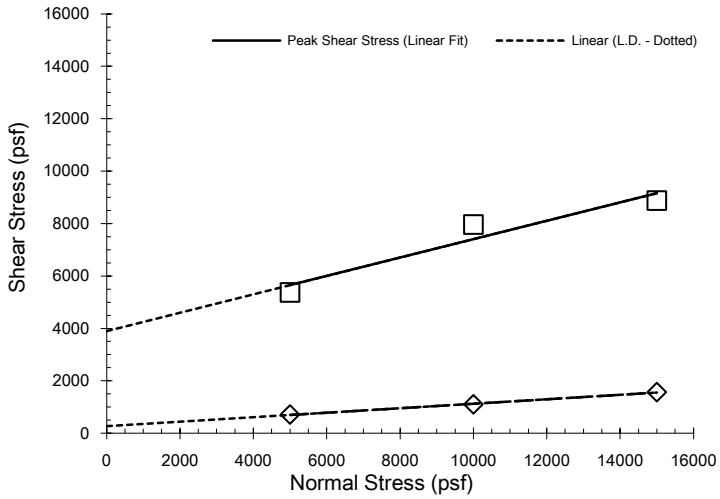
Interface Friction Test Report

Client: **Brantley Engineering**
Project: **JED Cell 11**
Date: 03-05-2015 to 03-06-2015

TRI Job#: G150073
Test Method: ASTM D6243

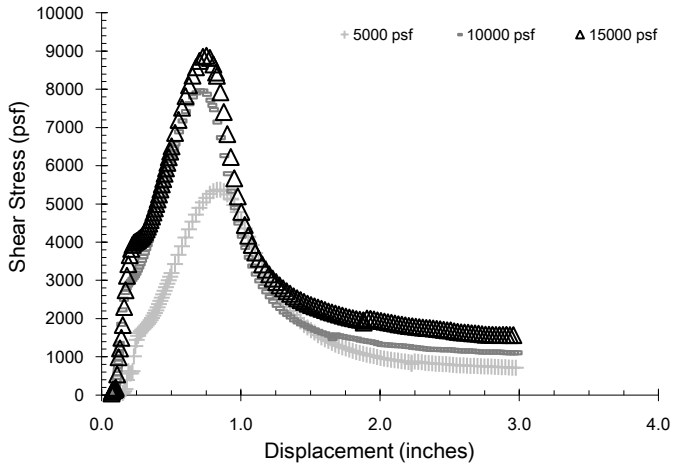
John M. Allen, P.E., 03/09/2015
Quality Review/Date

Tested Interface: Internal Shear of Bentomat ST GCL (330)



Test Results		
	Peak	Large Displacement (@ 3.0 in.)
Friction Angle (degrees):	19.3	4.9
Y-intercept or Adhesion (psf):	3899	274

The GCL sheared internally.



Test Conditions

Upper Box &

Bentomat ST GCL

Lower Box

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	56	103	151
Normal Stress (psf)	5000	10000	15000
Corrected Peak Shear Stress (psf)	5372	7963	8877
Corrected Large Displacement Shear Stress (psf)	714	1103	1568
Peak Secant Angle (degrees)	47.1	38.5	30.6
Large Displacement Secant Angle (degrees)	8.1	6.3	6.0
Asperity for shiny side (mils)	--	--	--

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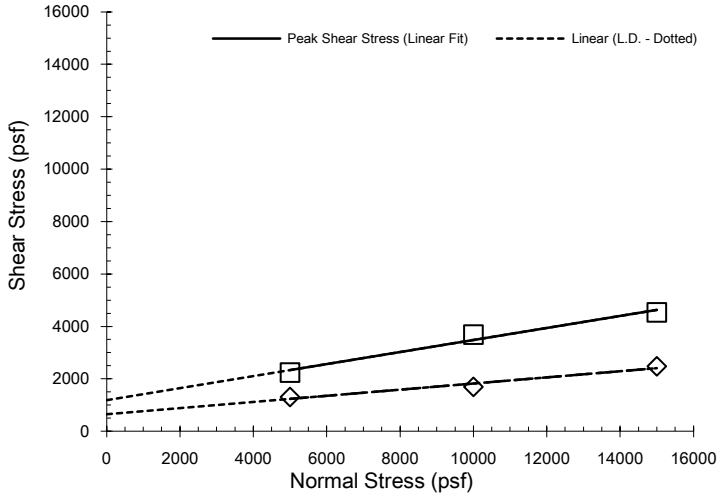
Interface Friction Test Report

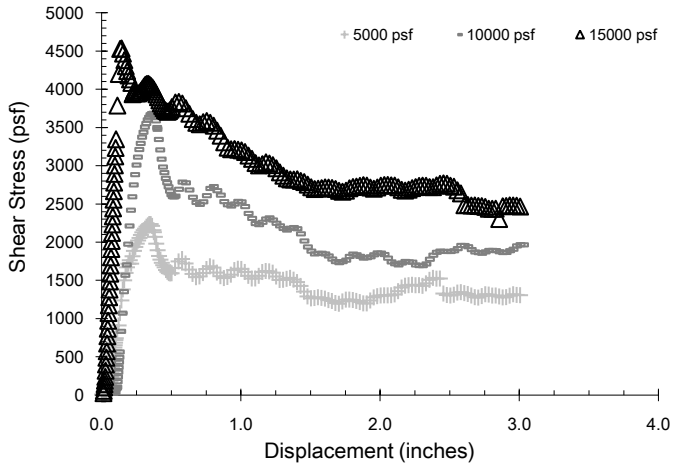
Client: **Brantley Engineering**
Project: **JED Cell 11**
Date: 03-10-2015 to 03-11-2015

TRI Job#: G150073
Test Method: ASTM D5321

John M. Allen, P.E., 03/12/2015
Quality Review/Date

Tested Interface: Protective Soil Layer vs. Skaps TN330-2-8 Double-sided Geocomposite (63241020001) vs. Agru 60 mil HDPE Microspike Geomembrane (G15F081010) vs. Skaps TN270-2-6 Double-sided Geocomposite (63241020078)





Test Results		
	Peak	Large Displacement (@ 3.0 in.)
Friction Angle (degrees):	12.9	6.7
Y-intercept or Adhesion (psf):	1190	654

Shearing occurred at the lower geocomposite/geomembrane interface.

Test Conditions

Upper Box &	Protective Soil Liner remolded to 90% of maximum dry density at the optimum mositure content or 90 pcf at 17.0%
Floating	Skaps TN330-2-8 double-sided geocomposite
Floating	Agru 60 mil HDPE Microspike geomembrane (shiny side down)
Lower Box	Skaps TN270-2-6 double-sided geocomposite

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	56	103	151
Normal Stress (psf)	5000	10000	15000
Corrected Peak Shear Stress (psf)	2238	3687	4534
Corrected Large Displacement Shear Stress (psf)	1306	1693	2477
Peak Secant Angle (degrees)	24.1	20.2	16.8
Large Displacement Secant Angle (degrees)	14.6	9.6	9.4
Asperity for shiny side (mils)	36.2	34.8	36.8

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

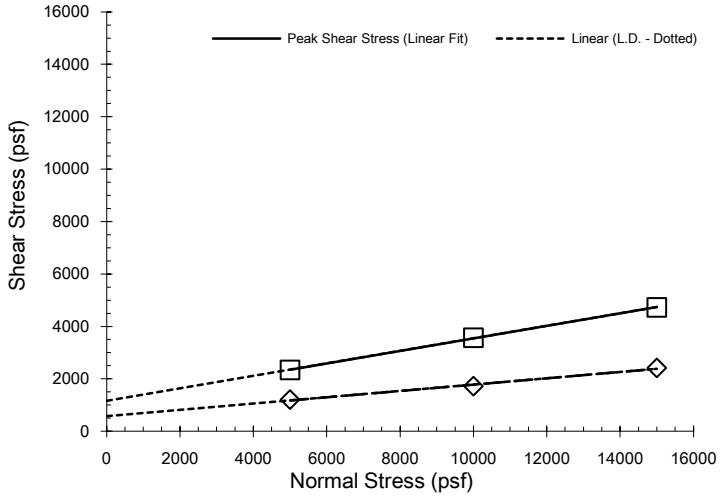
Interface Friction Test Report

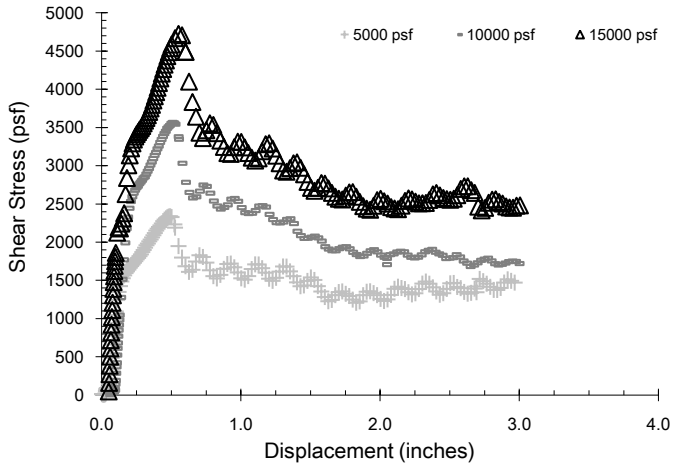
Client: **Brantley Engineering**
Project: **JED Cell 11**
Date: 03-04-2015 to 03-06-2015

TRI Job#: G150073
Test Method: ASTM D6243

John M. Allen, P.E., 03/09/2015
Quality Review/Date

Tested Interface: Compacted Subbase vs. Bentomat ST GCL (330) vs. Agru 60 mil HDPE Microspike Geomembrane (G15F081010) vs. Skaps TN270-2-6 Double-sided Geocomposite (63241010001) vs. Agru 60 mil HDPE Microspike Geomembrane (G15F081010)





Test Results		
	Peak	Large Displacement (@ 3.0 in.)
Friction Angle (degrees):	13.4	6.9
Y-intercept or Adhesion (psf):	1158	572

Shearing occurred at the geocomposite/primary geomembrane interface.

Test Conditions

Upper Box &	Compacted Subbase remolded to 95% of maximum dry density at the optimum mositure content or 97.3 pcf at 15.70%
Floating	Bentomat ST GCL (white side up)
Floating	Agru 60 mil HDPE Microspike geomembrane (shiny side up) over Skaps TN270-2-6 double-sided geocomposite
Lower Box	Agru 60 mil HDPE Microspike geomembrane (shiny side up)

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Test Data

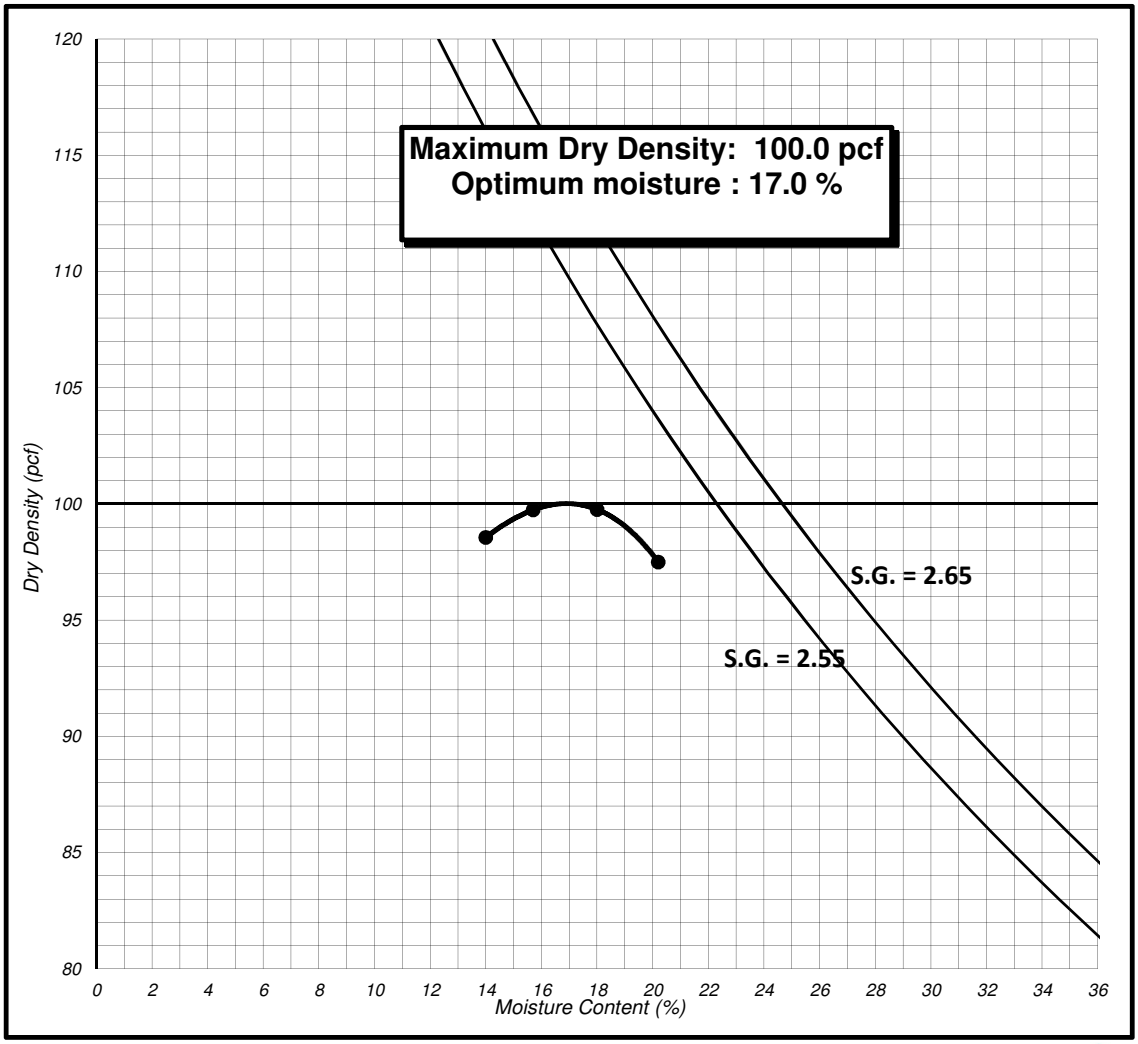
Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	56	103	151
Normal Stress (psf)	5000	10000	15000
Corrected Peak Shear Stress (psf)	2339	3567	4725
Corrected Large Displacement Shear Stress (psf)	1207	1720	2416
Peak Secant Angle (degrees)	25.1	19.6	17.5
Large Displacement Secant Angle (degrees)	13.6	9.8	9.1
Asperity for shiny side (mils)	36.8	35.8	35.8

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

MAXIMUM DENSITY TEST ASTM D 698
Method A

Job Name	TRI / Precision Geosynthetic Lab. # G150073	**Date:**	2/23/2015
Job No.	2001-068	**By:**	LD
Boring/Sample No.	C # 102457		
Description:	Brown, F. Sand		

Mold Volume (cf): **0.0333**	Hammer (lbs): **5.5**	Blows: **25**	Layers: **3**		
Specimen	A	B	C	D	E
Total Wet Weight (grs)	**3805**	**3783**	**3737**	**3810**	
Weight of Mold (grs)	2025	2038	2038	2038	
Wet Weight of Soil (grs)	1780	1745	1699	1772	
Wet Density (pcf)	117.7	115.4	112.4	117.2	
Moisture Can No.					
Dry Weight					
Moisture Content (%)	**18.0**	**15.7**	**14.0**	**20.2**	
Dry Density (pcf)	99.8	99.7	98.6	97.5	



Geo-Logic ASSOCIATES

APPENDIX G
Subgrade Acceptance Certificates

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
SECondary panels P-1 THRU P-29

CQA REPRESENTATIVE:

Date: 5-5-15

Signature:

Name: Kevin Cosby

Title: CQA.

CONTRACTORS REP:

Date: 5-5-15

Signature:

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/5/15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: Foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary Panels P-30 THRU P-48

CQA REPRESENTATIVE:

Date: 5-6-15

Signature: [signature]

Name: Kevin Lesley

Title: CQA

CONTRACTORS REP:

Date: 5-6-15

Signature: [signature]

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/6/15

Signature: [signature]

Name: Jorge Gomez

Title: Foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary Panels P-49 THRU P-57

CQA REPRESENTATIVE:

Date: 5-7-15

Signature:

Name: Kevin Lesley

Title: CQA

CONTRACTORS REP:

Date: 5-7-15

Signature: Michael Rowley

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/7/15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary Panels P-58 THRU P-64 & P-79

CQA REPRESENTATIVE:

Date: 5-8-15

Signature:

Name: Kevin Lesley

Title: CQA

CONTRACTORS REP:

Date: 5-8-15

Signature: Michael Rowley

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5-8-15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary panels P-65 THRU P-78
P-79 was deployed previously

CQA REPRESENTATIVE:

Date: 5-9-15

Signature:

Name: Kevin LESLEY

Title: CQA

CONTRACTORS REP:

Date: 5-9-15

Signature: Michael Rowley

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/9/15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: Foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary Panels P-80 THRU P-89

CQA REPRESENTATIVE:

Date: 5-11-15

Signature:

Name: Kevin Lesley

Title: CQA

CONTRACTORS REP:

Date: 5-11-15

Signature: Michael Rowley

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/11/15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: Foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary Panels P-90 THRU P-95

CQA REPRESENTATIVE:

Date: 5-12-15

Signature: [signature]

Name: Kevin LESLEY

Title: CQA

CONTRACTORS REP:

Date: 5-12-15

Signature: [signature]

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/12/15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: Foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary Panels P-96 THRU P-113

CQA REPRESENTATIVE:

Date: 5-13-15

Signature: [signature]

Name: Kevin Lesley

Title: CQA

CONTRACTORS REP:

Date: 5-13-15

Signature: [signature]

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/13/15

Signature: [signature]

Name: Jorge Gomez

Title: Foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary Ponds P-114 THRU P-116

CQA REPRESENTATIVE:

Date: 5-14-15

Signature:

Name: Kevin Leslie

Title: CQA

CONTRACTORS REP:

Date: 5-14-15

Signature: Michael Rowley

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/14/15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
Secondary Panels P-117 THRU P-130

CQA REPRESENTATIVE:

Date: 5-15-15

Signature:

Name: Kevin Leslie

Title: CQA

CONTRACTORS REP:

Date: 5-15-15

Signature:

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5-15-15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
SEcondary Panels P-131 - THRU P-143

CQA REPRESENTATIVE:

Date: 5-16-15

Signature: [signature]

Name: Kevin Lesley

Title: QCA

CONTRACTORS REP:

Date: 5-16-15

Signature: [signature]

Name: Michael Rawley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/16-15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: Foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
SECondary Panels P-144 THRU P-151

CQA REPRESENTATIVE:

Date: 5-19-15

Signature: [signature]

Name: Kevin Cosley

Title: CQA.

CONTRACTORS REP:

Date: 5-19-15

Signature: [signature]

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 5/19/15

Signature: Jorge Gomez

Name: Jorge Gomez

Title: Foreman

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
SECONDARY PANELS P-152 THRU P-156

CQA REPRESENTATIVE:

Date: 7-6-15

Signature:

Name: Kevin Losey

Title: Field Tech, CQA

CONTRACTORS REP:

Date: 7-6-15

Signature:

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 7/6/15

Signature:

Name: Jorge Ballantes

Title: Superintendent

BRANTLEY ENGINEERING, LLC.

Brantley
Engineering, LLC

SUBGRADE ACCEPTANCE

PROJECT NAME: JED Cell 11 Construction

PROJECT NUMBER: 2015-101

OWNER: Omni Waste of Osceola County, LLC

ENGINER: Geosyntec

LOCATION: St. Cloud, Florida

I, undersigned, a duly appointed representative of Brantley Engineering, LLC, have visually observed the soil subgrade surface described below, and found it to be an acceptable surface on which to install _____ Geosynthetic Clay Liner(GCL) _____ Geocomposite _____ Geotextile _____HDPE.

The certification is based on subterranean inspections and tests performed by Brantley Engineering and visual observations of the subgrade only. Brantley makes no representations or warranties regarding conditions which may exist below the prepared surface of the subgrade. The subgrade conforms to the project specifications for installation of geosynthetics.

Area Being Accepted:
SECONDARY PANELS P-157 THRU P-180

CQA REPRESENTATIVE:

Date: 7-7-15

Signature:

Name: Kevin Losloy

Title: CQA

CONTRACTORS REP:

Date: 7-7-15

Signature:

Name: Michael Rowley

Title: Project Manager

INSTALLERS REPRESENTATIVE:

Date: 7/7/15

Signature:

Name: Jorge Barrantes

Title: Superintendent

APPENDIX H
Geomembrane Installation
(Secondary Layer)

Section 1
Geomembrane Panel Deployment Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-5-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
1	7084	76	37'	225'	8325	60	E.P.	S.W. CNR. / JED Cell 10
2		76	20'		450			"
3		76	17'		382.5			
4		76	37		832.5			
5		76	40'		900			
6		77	41		922.5			
7		77	41		922.5			
8		77	41		922.5			
9		77	41		922.5			
10		77	41		922.5			
11	7084	77	41.5		933.75			
12	2015	77	42	225	945	60	EP	

PAGE APPROX. TOTAL (SQ FT): 9888.75
DAILY TOTAL (SQ FT): —
ACCUMULATED TOTAL (SQ FT): —

BRANTLE[illegible]IGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY ____ SECONDARY X OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-5-15
PAGE# 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
13	2015	77	445	22.5	1001.25	60	E.P.	
14	2015	77	45	22.5	1012.5			
15	2015	78	46	22.5	1035			
16	2015	78	46.5	22.5	1046.25			
17	2015	78	47	22.5	1057.5			
18	2015	78	48	22.5	1080			
19	2015	79	49	22.5	1102.5			
20	2015	79	49	22.5	1102.5			
21	2017	80	49	22.5	1102.5			
22	2017	80	47	22.5	1057.5			
23	2017	80	48	22.5	1080			
24	2017	81	48	22.5	1080	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 127575

DAILY TOTAL (SQ FT): ____

ACCUMULATED TOTAL (SQ FT): ____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY ____
SECONDARY X OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-5-15
PAGE# 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
25	2017	81	48 50	22.5	1080	60	EP	
26	2017	81	48	22.5	1080	60	EP	
27	2017	80	49	22.5	1102.5	60	EP	
28	2017	80	49 52	22.5	1102.5	60	EP	
29	2017	80	48	22.5	1080	60	EP	

PAGE APPROX. TOTAL (SQ FT): 5445
DAILY TOTAL (SQ FT): 28091.25
ACCUMULATED TOTAL (SQ FT): 28091.25

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
30	7088	71	50	22.5	1125	60	E.T.	
31	7088	71	50.5	22.5	1136.25			
32	7088	71	51	22.5	1147.5			
33	7088	71	52	22.5	1170			
34	7088	72	53.5	22.5	1203.75			
35	7088	72	53.5	22.5	1203.75			
36	7088	73	25	22.5	562.5			
37	7088	73	80	22.5	1800			
38	7088	73	63	22.5	1417.5			
39	1002	74	71.5	22.5	1608.75			
40	1002	75	203	22.5	4567.5			
41	1002	76	183	22.5	4117.5	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 21060

DAILY TOTAL (SQ FT): 35682

ACCUMULATED TOTAL (SQ FT): 63773.25

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15
PAGE# 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
42	~~6082~~	76	85	22.5	1912.5	60	EP	
43	6073	76	318	22.5	7155	60		
44	6073	76	73	22.5	1642.5	60		
45	6072	77	313	22.5	7042.5	60		
46	6072	77	190	22.5	4275	60		
47	7089	78	95	22.5	2137.5	60		
48	6073	78	8'	12'	96	60	↓	▱

PAGE APPROX. TOTAL (SQ FT): 14622
DAILY TOTAL (SQ FT): 35682
ACCUMULATED TOTAL (SQ FT): 63773.25

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-7-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
49	7089	79	138	22.5	3105	60	B.P.	
50	7089	79	12	7	84			
51	2018	79	510	22.5	11475			
52	7085	80	514	22.5	11565			
53	2016	83	511	22.5	114975			
54	6074	86	514	22.5	11565			
55	2020	86	503	22.5	113175			
56	2017	86	503	22.5	11317.5			
57	1012	85	502	22.5	11295	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 83221.5
DAILY TOTAL (SQ FT): 83221.5
ACCUMULATED TOTAL (SQ FT): 146994.75

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
58	1011	82	510	22.5	11475	60	E.P	
59	7086	83	511	22.5	11497.5			
60	2016	84	508	225	11430			
61	4081	83	508	22.5	11430			
62	3030	84	508	22.5	11430			
63	2021	85	500	22.5	11250			
64	2018	84	486	225	10935			
79	1013	84	4	22.5	90	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 79537.5

DAILY TOTAL (SQ FT): 79537.5

ACCUMULATED TOTAL (SQ FT): 226532.25

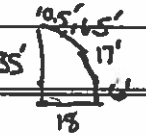
BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-9-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
65	1013	83	14	22.5	315	60	EP	
66	1013	83	28		630			
67	1013	84	45		1012.5			
68	1013	84	58		1305			
69	1013	84	81		1822.5			
70	1013	84	100		2250			
71	1013	85	118		2655			
72	1013	85	33		742.5			
73	2015	85	102	↓	2295			
74	2015	86	150	22.5	3375			
75	2015	87	34	18	612			
76	2015	88	–	225	761	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 17,775.5

DAILY TOTAL (SQ FT): 20790.5

ACCUMULATED TOTAL (SQ FT): 247,322.75

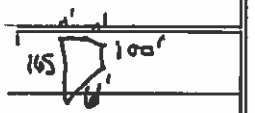
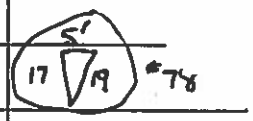
BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY ____ SECONDARY X OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-9-15
PAGE# 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION ~~SPECIAL~~ SHAPE
77	205	89	132	225	2970	60	EP	
79	2015	99	—	225	45	60	EP	

PAGE APPROX. TOTAL (SQ FT): 3015
DAILY TOTAL (SQ FT): 20790.5
ACCUMULATED TOTAL (SQ FT): 247232.7

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-11-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
80	5056	84	458	22.5	10305	60	EP	
81	5056	84	40	↓	900	↓	↓	
82	5064	84	397		8932.5			
83	5064	85	77		1732.5			
84	2014	85	345		7762.5			
85	3064	85	150		3375			
86	2023	86	253		5692.5			
87	2023	87	242		5445			
88	7089	86	146		3285			
89	1010	85	369	↓	8302.5	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 55732.5

DAILY TOTAL (SQ FT): 55732.5

ACCUMULATED TOTAL (SQ FT): 303055.25

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.12.15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
90	2019	83	307	22.5	6907.5	60	B.P.	
91	2019	84	202	↓	4545	↓	↓	
92	10016	85	102		2295			
93	91006	85	298		6705			
94	91006	85	104		2340			
95	5055	86	191		4297.5			

PAGE APPROX. TOTAL (SQ FT): 27244.5

DAILY TOTAL (SQ FT): 27244.5

ACCUMULATED TOTAL (SQ FT): 330,299.75

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.13.15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
96	5055		290	22.5	6525	60	GP	
97	2024		190	22.5	4275			
98	2024		—		7305			
99	2024		19		776.25			
100	2024		—		520			
101	5055		—		200			
102	2024		34	22.5	765			
103	2024		52		1176			
104	2024		56		1260			
105	4048		58		1305			
106	4048		59		1327.5			
107	4048		60	22.5	1350			

PAGE APPROX. TOTAL (SQ FT): 26778.75

DAILY TOTAL (SQ FT): 35373.75

ACCUMULATED TOTAL (SQ FT): 365673.5

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY ___ OTHER X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.13.15
PAGE# 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
108	4048		61	22.5	1372.5	60	BP	
109	4048		62	↓	1395	↓	↓	
110	4048		63		1417.5			
111	4048		64		1440.			
112	5058		65		1462.5			
113	5058		67	↓	1507.5	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 9595

DAILY TOTAL (SQ FT): 35373.75

ACCUMULATED TOTAL (SQ FT): 365,673.5

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY ____ SECONDARY X OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.14.15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
114	3029	87	510	22.5	11475	60	E.P.	
115	2022	87	510	22.5	11475	60	EP	
116	2024	86	14	3.5	49	60	EP	38 35

PAGE APPROX. TOTAL (SQ FT): 22,999

DAILY TOTAL (SQ FT): 22,999

ACCUMULATED TOTAL (SQ FT): 388,672.5

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-15-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
117	5058	83	53	22.5	1192.5	60	BP	
118	5058	84	55	↓	1237.5	↓	↓	
119	5058	83	57		1282.5			
120	5058	83	59		1327.5			
121	5058	83	60	↓	1350			
122	6065	83	60	22.5	1350			
123	6065	83	—	—	110.25			24 25 91 24.5 x 4.5
124	6065	82	—	—				33 59 15 41
125	6065	82	60	22.5	1350			
126	6065	82	62	22.5	1395			
127	6065	82	—	—	78			12 23 22 23 7
128	6065	81	—	—	1109	↓	↓	57 9 59 57 23

PAGE APPROX. TOTAL (SQ FT): 12,296.75
DAILY TOTAL (SQ FT): 15,199.25
ACCUMULATED TOTAL (SQ FT): 403871.75

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-15-15
PAGE# 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
129	6065	81	64	22.5	1440	60	EP	
130	6065	81	65	22.5	1462.5	60	EP	

PAGE APPROX. TOTAL (SQ FT): 2902.5
DAILY TOTAL (SQ FT): 15199.25
ACCUMULATED TOTAL (SQ FT): 403871.75

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5/6/15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
131	1008	77	165	225	3712.5	60	BP	
132	1008	77	40		900			
133	1008	78	160		3600			
134	1009	79	10		225			
135	1008	79	100		2250			
136	5058	79	115		2587.5			
137	1008	80	33		742.5			
138	1009	80	208		4680			
139	1009	81	249		5602.5			
140	1009	81	32		720			
141	3031	82	187		4207.5			
142		83	64	↓	1440	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 30667.5

DAILY TOTAL (SQ FT): 32,107.5

ACCUMULATED TOTAL (SQ FT): 435,979.25

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY ___ X ___ OTHER ___

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5/16/15
PAGE# 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
143	3031	84	64	22.5	1440	60	BP	

PAGE APPROX. TOTAL (SQ FT): 1440

DAILY TOTAL (SQ FT): 32,107.5

ACCUMULATED TOTAL (SQ FT): 435,979.25

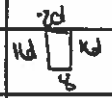
BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY ____ SECONDARY ____ X ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5·19·15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
144	1007	80	158	22.5	3,555	60	~~80~~	
145	1007	81	169	22.5	3802.5			
146	1007	82	161	–	3622.5			
147	5059	83	173	22.5	3892.5			1
148	5059	84	74	22.5	1665			
149	1007	85	–	–	682			
150	6065	86	13	22	286			
151	6065	87	–	22.5	100			

PAGE APPROX. TOTAL (SQ FT): 17605.5

DAILY TOTAL (SQ FT): 17605.5

ACCUMULATED TOTAL (SQ FT): 453,585

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-6-2015
PAGE#

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
P-152	7080	90	326	22.5	7,335	60	EP	
P-153	7080	91	165	22.5	3,713	60	EP	
P-154	5052	92	151	22.5	3,398	60	EP	
P-155	5052	90	338	22.5	7,605	60	EP	
P-156	6071	86	340	22.5	7,650	60	EP	

PAGE APPROX. TOTAL (SQ FT): 29,701
DAILY TOTAL (SQ FT): 29,701
ACCUMULATED TOTAL (SQ FT): 483,286

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X OTHER _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-2015
PAGE#

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
P-157	6071	81	153	22.5	3443	60	EP.	
P-158	3037	82	200	22.5	4500	60	EP	
P-159	3037	85	298	22.5	6705	60	EP	
P-160	3035	86	50	22.5	1125	60	EP	
P-161	3035	87	14	22.5	315	60	EP	
P-162	3035	87	10	22.5	225	60	EP	
P-163	3035	88	32	22.5	720	60	EP	
P-164	3035	88	42	22.5	945	60	EP	
P-165	3035	89	42	22.5	945	60	EP	
P-166	3035	89	44	22.5	990	60	EP	
P-167	3035	89	44	22.5	990	60	EP	
P-168	3035	89	44	22.5	990	60	EP	

PAGE APPROX. TOTAL (SQ FT): 21,893

DAILY TOTAL (SQ FT): 32,718

ACCUMULATED TOTAL (SQ FT): ~

BRANT[illegible]NGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY ___ X ___ OTHER _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-2015
PAGE#

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
P-169	3035	90	45	22.5	1013	60	EP	
P-170	3035	90	46	22.5	1035	60	EP	
P-171	4042	89	46	22.5	1035	60	EP	
P-172	4042	89	47	22.5	1058	60	EP	
P-173	4042	88	48	22.5	1080	60	EP	
P-174	4042	88	50	22.5	1125	60	EP	
P-175	4042	87	51	22.5	1148	60	EP	
P-176	4042	86	52	22.5	1170	60	EP	
P-177	4042	85	53	22.5	1193	60	EP	
P-178	4042	84	8	22.5	180	60	EP	
P-179	3035	86	22	5	495	60	EP	
P-180	3035	86	13	2	293	60	EP	

PAGE APPROX. TOTAL (SQ FT): 10,825
DAILY TOTAL (SQ FT): 32,718
ACCUMULATED TOTAL (SQ FT): 516,004 FT^2

Section 2
Geomembrane Trial Seam Log

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ____
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-5-15 PAGE# 1

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
TF #2	1500	80	A059	RG	12	850	—	—	INSIDE	129	125	133	117	127							
									OUTSIDE	129	125	130	117	135	165	152	169	134	168	P	E.P.
TF #1	1600	72	A059	RG	12	850	—	—	INSIDE	139	136	133	135	132							
									OUTSIDE	133	135	122	121	133	147	144	164	160	178	P	E.P.
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET	PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
SM	1	0826	72	A059	RG	12	850	—	—	INSIDE	117	104	116	104	107	155	157	159	156	154	P	E.T.
SM										OUTSIDE	122	107	105	115	115							
SM	2	0900	75	WE A056	RZ	12	850	—	—	INSIDE	117	123	120	129	129	152	140	160	166	150		
SM										OUTSIDE	122	125	113	123	122							
TEST	3	0910	75	A056	RZ	10	850	—	—	INSIDE	124	121	128	121	122	139	144	154	140	131		
TEST										OUTSIDE	127	126	117	138	116							
SM	4	1300	76	A056	RZ	12	850	—	—	INSIDE	108	112	118	111	115	133	128	129	137	139		
SM										OUTSIDE	119	115	112	105	112							
TEST	5	1305	76	A056	RZ	10	850	—	—	INSIDE	120	116	117	122	118	121	126	123	130	133		
TEST										OUTSIDE	123	127	121	126	122							
SM	6	1300	76	A059	RG	13	850	—	—	INSIDE	115	112	109	113	123	124	137	143	146	139		
SM										OUTSIDE	117	108	120	115	119							
TEST	7	1309	76	A059	RG	12	850	—	—	INSIDE	128	119	119	123	117	140	139	138	132	144		
TEST										OUTSIDE	134	125	123	115	127							
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ____
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-7-15 PAGE# 1

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
1	0834	67	A047	JM	—	—	395	475	INSIDE	105	113	112	107	95	142	135	137	139	134	P	E.P.
									OUTSIDE	—	—	—	—	—							
2	930	76	A056	RZ	12	850	—	—	INSIDE	103	108	107	103	103	136	126	139	144	128		
									OUTSIDE	94	124	106	106	100							
3	930	76	A059	RG	13	850	—	—	INSIDE	117	119	115	121	125	150	133	147	164	153		
									OUTSIDE	109	123	118	126	128							
4	939	76	A056	RZ	10	850	—	—	INSIDE	119	124	126	132	126	138	146	144	147	135		
									OUTSIDE	122	123	131	129	117							
5	936	76	A059	RG	12	850	—	—	INSIDE	129	116	131	127	129	136	132	132	140	130		
									OUTSIDE	126	128	127	132	129							
6	1300	79	A047	JM	—	—	385	470	INSIDE	108	107	106	117	113	139	137	132	142	141		
									OUTSIDE	—	—	—	—	—							
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET	PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
S&S	1 TX	0930	1673	A047	JM	—	—	410	480	INSIDE	116	113	123	131	112	159	147	167	157	146	P	E.P.
										OUTSIDE	—	—	—	—	—							
T&T	2 TX	1315	82	A047	JM	—	—	395	480	INSIDE	125	116	118	124	117	130	134	138	135	132	P	E.P.
										OUTSIDE	—	—	—	—	—							
T&T	3	1315	82	A059	RG	12	850	—	—	INSIDE	121	128	124	126	126	147	137	138	138	136	P	E.P.
										OUTSIDE	127	122	116	124	120							
S&S	4	1315	82	A056	RZ	12	850	—	—	INSIDE	106	108	110	105	110	149	150	158	145	144	P	E.P.
										OUTSIDE	111	112	109	110	108							
S&S	5	1315	82	A059	RG	13	850	—	—	INSIDE	119	117	119	129	119	144	140	142	149	149	P	E.P.
										OUTSIDE	118	121	111	109	100							
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: _____
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-9-15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
TxT	1	0800	72°	A047	JM	—	—	405	480	INSIDE	98	118	125	111	106	145	146	139	151	151	P	E.P.
										OUTSIDE	—	—	—	—	—							
SxS	2	1030	78°	A059	RG	13	850	—	—	INSIDE	101	105	107	115	112	130	140	148	141	143		
										OUTSIDE	104	113	104	117	110							
TxT	3	1030	78°	A056	RZ	10	850	—	—	INSIDE	119	124	122	138	125	140	137	133	137	138		
										OUTSIDE	124	121	120	135	136							
TxT	4	1039	78°	A059	RG	12	850	—	—	INSIDE	115	115	120	133	124	132	136	130	137	138		
										OUTSIDE	114	118	114	132	123							
										INSIDE												
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-11-15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET	PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
T-T	1	916	77°	A047	JM	—	—	400	480	INSIDE	101	101	108	111	112	141	141	138	139	139	P	E.P.
										OUTSIDE	—	—	—	—	—							
S-S	2	1121	80°	A056	RZ	12	850	—	—	INSIDE	98	101	105	107	99	142	139	143	143	143		
										OUTSIDE	105	99	108	114	104							
S-S	3	1121	80°	A059	CH	13	850	—	—	INSIDE	96	96	103	101	96	135	133	133	146	135		
										OUTSIDE	106	107	96	109	102							
T-T	4	1145	86	A056	RZ	11	850	—	—	INSIDE	131	130	123	126	132	132	132	133	134	134		
										OUTSIDE	124	125	130	129	136							
T-T	5	1004	88	A047	JM	—	—	395	475	INSIDE	138	133	133	128	137	146	148	153	143	135	↓	↓
										OUTSIDE	—	—	—	—	—							
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY [illegible]NEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-12-15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
S to S	1	1000	88	A056	C.H.	13	850	—	—	INSIDE	105	101	118	98	99								
										OUTSIDE	99	104	103	108	119	138	133	136	132	134	P	EP
T to T	2	1000	88	A056	C.H.	12	850	—	—	INSIDE	114	116	116	120	117								
										OUTSIDE	119	126	120	125	128	132	120	128	121	124	P	EP
S to S	3	1020	88	A059	M.S.	11	850	—	—	INSIDE	109	98	98	106	105								
										OUTSIDE	111	106	105	109	103	128	128	128	137	150	P	EP
T to T	4	200	98	A047	C.H	—	—	470	500	INSIDE	116	114	117	109	111								
										OUTSIDE	—	—	—	—	—	120	121	123	125	123	P	EP
T to T	5	220	98	A037	E.R.	—	—	400	460	INSIDE	122	123	122	122	125								
										OUTSIDE	—	—	—	—	—	122	123	125	125	122	P	EP
										INSIDE												
										OUTSIDE												
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5·13·15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET	PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
S to S	1	1000	88	A059	CH	13	850	—	—	INSIDE	100	101	102	108	105	125	146	129	144	131	P	BP
										OUTSIDE	96	102	102	102	105							
S to T	2	1000	88	A059	CH	11	850	—	—	INSIDE	118	120	126	100	119	137	141	124	140	133	P	BP
										OUTSIDE	123	115	127	127	129							
S to S	3	1010	88	A056	MS	11	850	—	—	INSIDE	104	100	103	109	125	146	130	150	143	139	P	BP
										OUTSIDE	104	120	110	103	126							
T to T	4	1020	90	A056	MS	13	850	—	—	INSIDE	119	119	112	119	115	123	121	127	137	121	P	BP
										OUTSIDE	118	123	113	128	121							
S to S	5	330	90	A056	MS	13	850	—	—	INSIDE	110	120	128	97	95	137	130	139	129	122	P	BP
										OUTSIDE	120	128	95	96	100							
T to T	6	338	90	A057	CH	11	850	—	—	INSIDE	100	95	104	93	107	128	133	145	139	122	P	BP
										OUTSIDE	99	98	95	111	108							
										INSIDE												
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-14-15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
T to T	1	800	80	A047	JM	—	—	465	495	INSIDE	130	111	127	117	126	130	133	136	140	134	P	BP
										OUTSIDE	—	—	—	—	—							
T to S	2	1055	88	A056	MS	10	850	—	—	INSIDE	104	97	110	95	128	127	127	124	132	131	P	BP
										OUTSIDE	107	117	111	110	103							
T to S	3	1057	88	A059	CH	10	850	—	—	INSIDE	112	98	113	103	105	131	129	135	128	132	P	BP
										OUTSIDE	106	99	108	113	105							
S to S	4	1055	88	A056	MS	11	850	—	—	INSIDE	111	114	103	110	115	132	129	136	133	133	P	BP
										OUTSIDE	107	99	105	111	109							
T to T	5	1250	90	A037	JM	—	—	416	490	INSIDE	128	127	127	131	126	128	128	127	130	129	P	BP
										OUTSIDE	—	—	—	—	—							
T to T	6	1255	90	A047	SMT	—	—	450	450	INSIDE	129	125	125	118	135	131	133	136	131	133	P	BP
										OUTSIDE	—	—	—	—	—							
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-15-15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET	PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
S to S	1	1130	90	A059	CH	13	850	—	—	INSIDE	97	94	92	101	109	123	127	130	157	125	P	BP
										OUTSIDE	99	96	102	108	106							
S to S	2	1130	90	A056	MS	11	850	—	—	INSIDE	112	116	109	107	103	134	132	133	135	130	P	BP
										OUTSIDE	104	103	108	105	103							
T to T	3	0800	80	A047	JM	—	—	460	490	INSIDE	98	108	91	115	100	124	135	148	145	145	P	BP
										OUTSIDE	—	—	—	—	—							
										INSIDE												
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.16.15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET	PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
S to S	1	1000	88	A059	CH	13	850	—	—	INSIDE	101	97	101	107	109	151	141	142	158	141	P	BP
										OUTSIDE	99	109	106	115	110							
T to S	2	1010	88	A059	CH	11	850	—	—	INSIDE	122	122	122	139	131	130	124	128	152	143	P	BP
										OUTSIDE	116	106	105	109	109							
S to S	3	1030	88	A056	JM	11	850	—	—	INSIDE	108	104	106	114	104	134	131	146	151	152	P	BP
										OUTSIDE	107	101	101	93	110							
T to T	4	1035	89	A056	JM	10	850	—	—	INSIDE	113	120	120	114	114	133	136	133	132	137	P	BP
										OUTSIDE	123	116	127	117	126							
										INSIDE												
										OUTSIDE												
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.18.15 PAGE# 1

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
1	860	70	A041	JM	—	—	455	490	INSIDE	111	124	101	131	122	154	154	148	156	152	P	BP
									OUTSIDE	—	—	—	—	—							
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									OUTSIDE												
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ____
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-19-15 PAGE# 1

	TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
T to T	1	890	70	A047	JM	—	—	455	490	INSIDE	111	124	101	131	122	154	154	148	156	152	P	BP
										OUTSIDE	-	—	—	—	—							
S to S	2	930	88	A059	CH	13	850	—	—	INSIDE	116	114	102	118	112	146	142	142	147	140	P	BP
										OUTSIDE	119	100	113	106	120							
S to T	3	935	88	A059	CH	11	850	—	—	INSIDE	139	111	126	134	119	131	136	130	132	127	P	BP
										OUTSIDE	111	126	116	105	105							
S to S	4	940	88	A056	MS	11	850	—	—	INSIDE	108	111	105	105	109	137	142	137	148	145	P	BP
										OUTSIDE	112	106	110	105	122							
S to S	5	940	88	A056	MS	10	850	—	—	INSIDE	126	126	134	139	127	131	132	136	160	128	P	BP
										OUTSIDE	128	119	138	148	128							
T to S	6	1300	84	A056	MS	11	850	—	—	INSIDE	124	114	118	118	105	143	136	139	140	138	P	BP
										OUTSIDE	111	117	110	112	114							
T to T	7	1338	84	A047	JM	—	—	450	480	INSIDE	124	115	132	132	129	135	137	134	140	134	P	BP
										OUTSIDE	—	—	—	—	—							
										INSIDE												
										OUTSIDE												
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										INSIDE												
										OUTSIDE												

Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENG[illegible]ERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-6-2015 PAGE# 1

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
S to S TF-1	1140	85	A056	MS	12	850	—	—	INSIDE	105	110	113	116	105	129	131	128	122	127	P	EP
									OUTSIDE	110	111	115	110	110							
S to S TF-2	1150	85	A059	RZ	12	850	—	—	INSIDE	126	123	119	117	120	130	129	135	136	137	P	EP
									OUTSIDE	122	124	121	119	122							
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-2015 PAGE# 1

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET	PEEL VALUE lbs/inch						SHEER VALUE lbs/inch					P/F	QA MON.
T to T TF-1	810	80	A056	MS	11	850	—	—	INSIDE	135	133	128	136	127	159	145	146	162	149	P	EP
									OUTSIDE	128	131	134	137	135							
S to S TF2	829	79	A056	MS	12	850	—	—	INSIDE	106	105	109	108	99	145	146	153	156	148	P	EP
									OUTSIDE	97	97	113	109	111							
S to S TF3	1248	90	A056	MS	13	850	—	—	INSIDE	104	98	96	93	102	138	132	133	135	135	P	EP
									OUTSIDE	96	99	95	108	95							
S to T TF-4	1255	90	A056	MS	13	850	—	—	INSIDE	120	112	116	120	111	139	127	147	135	135	P	EP
									OUTSIDE	111	96	109	103	119							
T to T TX-1	329	90	A008	RZ	—	—	450	480	INSIDE	120	122	120	138	120	145	141	140	137	140	P	EP
									OUTSIDE	—	—	—	—	—	—	—	—	*	—		
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENG[illegible]ERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-8-2015 PAGE# 1

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
TxT 82	0800	80	A008	RZ	—	—	450	480	INSIDE	109	111	108	105	103	159	145	144	149	147	P	EP
									OUTSIDE	—	—	—	—	—							
TxT 83	1248	90	A008	RZ	—	—	420	480	INSIDE	110	111	109	113	112	129	130	139	141	129	P	EP
									OUTSIDE	—	—	—	—	—							
									INSIDE												
									OUTSIDE												
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									OUTSIDE												

Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

Section 3
Geomembrane Fusion Seaming Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-5-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # 2059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1500	RC

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 0 Mileage: 0

PAGE NUMBER: 1

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
1/2	WEOS - EEOS	15:05	77	RZ	12	850	850	21	21		KL		5-6-15	EP
3/4	NEOS - SEOS	15:07	77					24	45				5-6-15	
4/5	NEOS - SEOS	15:09	78					43	88				5-6-15	
5/6	NEOS - SEOS	15:14	78					45	33	100		DFS-1	5-7-15	
6/7	NEOS - SEOS	15:18	76					46	79				5-6-15	
7/8	NEOS - SEOS	15:22	78					47	126				5-6-15	
8,9	NEOS - SEOS	15:25						47	173				5-6-15	
1/4	NEOS - SEOS	15:28						29	202				5-6-15	↓
1/3	NEOS - SEOS	15:29						5	207				5-6-15	EP
2/3	NEOS - SEOS	15:33						46	253				5-6-15	
9,10	NEOS - SEOS	15:36						46	299				5-6-15	
10,11	NEOS - SEOS	15:40						47	346				5-6-15	
11,12	NEOS - SEOS	15:43						48	394				5-6-15	
12,13	NEOS - SEOS	15:46						46	442				5-6-15	
13,14	NEOS - SEOS	15:49		↓	↓	↓	↓	48	5	485		DFS-2	5-6-15	↓

PAGE TOTAL: 590

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 5

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS),

DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE USION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-5-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1500	RG

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 1 Mileage: 5

PAGE NUMBER: 2

SEAM NUMBER	SEAM SECTION START * FINISH POINT * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
14 15	NEOS - SEOS	15:52		RZ	12	950	950	49'	53		KL		5-6-15	EP
15 16	NEOS - SEOS	15:56						49'	102				5-6-15	
16 17	NEOS - SEOS	15:59						49'	151				5-6-15	
17 18	NEOS - SEOS	16:02						49'	200				5-6-15	
18 19	NEOS - SEOS	16:05						50	250				5-6-15	
19 20	NEOS - SEOS	16:09						50	300				5-6-15	
20 21	NEOS - SEOS	16:13						51	351				5-6-15	
21 22	NEOS - SEOS	16:16						51	402				5-6-15	
22 23	NEOS - SEOS	16:20						50	452				5-6-15	
23 24	NEOS - SEOS	16:24						51	18	485		DES 3	5-6-15	
24 26	NEOS - SEOS	16:28						52	70				5-6-15	
25 26	NEOS - SEOS	16:34						52	122				5-6-15	
26 27	NEOS - SEOS	16:38						52	174				5-6-15	
27 28	NEOS - SEOS	16:41						52	226				5-6-15	
28 29	NEOS - SEOS	16:45		↓	↓	↓	↓	52	278		↓		5-6-15	↓

PAGE TOTAL: 758

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 278

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY E NEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15

LAYER:	
PRIMARY	
SECONDARY	
OTHER	

MACHINE # 2059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0826	RG
TF-6	1300	RG
TF-7	1309	RG

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 2 Mileage: 278

PAGE NUMBER: 3

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
29, 30	NEOS - SEOS	08:26		RZ	12	850	850	50	328		KL		5-6-15	EP
30, 31	NEOS - SEOS	8:30						50	378				5-6-15	
31, 32	NEOS - SEOS	8:34						51	429				5-6-15	
32, 33	NEOS - SEOS	8:37						51	480				5-6-15	
33, 34	NEOS - SEOS	8:39						52	42	490		DFS-4	5-6-15	
34, 35	NEOS - SEOS	8:42						53	95				5-6-15	
36, 37	WEOS - EEOS	10:30						51	146				5-6-15	
37, 38	WEOS - EEOS	1037						65	211				5-6-15	
38, 39	NEOS - SEOS	1050						22	233				5-6-15	
37, 39	WEOS - EEOS	1052						43	276				5-6-15	
39, 40	WEOS - EEOS	1120						62	338				5-6-15	
39, 40	WEOS - EEOS	1130						103	441				5-6-15	
40, 41	WEOS - EEOS	1150						180	136	485		DFS-6	5-6-15	
40, 42	WEOS - EEOS	1203						42	178				5-7-15	
41, 43	WEOS - EEOS	1506		↓	↓	↓	↓	173	351		↓		5-7-15	↓
								1048						

* RP DPOINTS FROM END OF SEAM (EOS),
DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 351
DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0826	RG
TF-6	1300	RG
TF-7	1309	RG

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 3 Mileage: 351

PAGE NUMBER: 4

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
42, 43	WEOS	EEOS	1519		RG	12	850		100	453		KL		5-7-15	EP
43, 45			1530					312	312	280	485		DFS-7	5-7-15	
45, 46			1600					192	192	472				5-7-15	
45, 47			1615					88	88	75	485			5-7-15	
46, 47			1630					22	22	97			DFS-8	5-7-15	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 716

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 97

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-7-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	0930	RG
TF-5	0930	RG

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 4 Mileage: 97

PAGE NUMBER: 5

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING NON DESTRUCTIVE TESTING TEST DATE	QA MON.
46.51	WEOS	EEOS	10:30		RG	13	850	850	1466	283		KL		5-7-15	EP
47.51			10:59						115	398				5-7-15	
49.51			11:15						174	87	485		DFS-10	5-7-15	
51.52			11:30						502	104	485		DFS 11	5-8-15	
52.53			1420						501	120	485		DFS 12	5-8-15	
54.55			1510						502	137	485		DFS 13	5-8-15	
56.57	↓	↓	1635		↓	↓	↓	↓	501	153	485	↓	DFS 14	5-5-15	↓

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 2481

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 153

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1315	RG
TF-5	1315	RG

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 5 Mileage: 153

PAGE NUMBER: 6

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
57.58	West	EOS	13:00	79°	RG.	13	850°	850°	506'	174	485	KL	DFS-17	5-9-15	EP
59.60	↓	↓	13:44	84°	↓	↓	↓	↓	506'	195	485	KL	DFS-19	5-9-15	↓
61.62			14:25	82°					505'	215	485	KL	DFS-21	5-9-15	
63.64			16:10	80°					506'	236	485	KL	DFS-23	5-9-15	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 2023

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 236

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY [illegible]NEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-9-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	1038	RG
TF-4	1039	RG

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 6 Mileage: 236

PAGE NUMBER: 7

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
65,66	BEOS	EEOS	1000		RG	13	850	850	19	255		KL		5-11-15	EP
66,67	WEOS	EEOS	1003						35	290				5-11-15	
68,74			1010						22	312				5-11-15	
67,68			1013						48	360				5-11-15	
69,74			1019						4	364			Capped by 10B —		
68,69			1020						65	429				5-11-15	
69,70			1026						87	31	485		DFS-25	5-11-15	
70,71			1036						109	140				5-11-15	
71,73			1046						100	240				5-11-15	
71,72			1056						25	265				5-11-15	
73,74	↓	↓	1103						145	410				5-11-15	
72,74	WEOS	EEOS	1115						39	449				5-11-15	
75,76	NEOS	SEOS	1118						22	471				5-11-15	
74,78	WEOS	EEOS	1120						17	3	485		DFS-26	5-11-15	
76,77	WEOS	EEOS	1144		↓	↓	↓	↓	35	38		↓		5-11-15	↓

PAGE TOTAL: 772

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 38

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY E NEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-9-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	1038	RG
TF-4	1039	RG

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 7 Mileage: 38

PAGE NUMBER: 8

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
75,77	WEOS	EEOS	1146		RG	13	8.50	8.50	56	94		KL		5-11-15	EP
74,76	↓	↓	1156		↓	↓	↓	↓	4	98		↓		5-11-15	EP
74,75	↓	↓	1157		↓	↓	↓	↓	58	156		↓		5-11-15	EP
74,77	WEOS	EEOS	1203		↓	↓	↓	↓	61	217		↓		5-11-15	EP
76,78	WEOS	EEOS	1208		↓	↓	↓	↓	15	232		↓		5-11-15	EP

PAGE TOTAL: 179

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 232

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-11-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1121	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 8 Mileage: 232

PAGE NUMBER: 9

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT M[illegible]	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
80,82	WEOS	EEOS	11:30		CH	13	850	850	397	129	500	KL	DFS-28	5-12	EP
80,81	WEOS	EEOS	1205		↓	↓	↓	↓	49	178		KL		5-12	↓
82,84	WEOS	EEOS	1350						351	44	485	ICL	DFS-30	5-11	
82,83	WEOS	EEOS	1420						48	92		KL		5-12	
81,83	WEOS	EEOS	1424						36	128		KL		5-12	
85,88	WEOS	EEOS	1620						153	281		KL		5-12	
86,87	WEOS	EEOS	1632						250	46	485	KL	DFS-32	5-12	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 1284

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 46

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-12-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1020	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 9 Mileage: 46

PAGE NUMBER: 10

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
89.90	WEOS	EEOS	1015		CH	13	850	850	305	351		KL		5-12	EP
91.92	NEOS	SEOS	1050						22	373		KL		5-12	
94.95	NEOS	SEOS	1100						22	395		KL		5-12	
91.93	WEOS	EEOS	1110						197	107	485	KL	DES-33	5-12	
92.93	WEOS	EEOS	1132						98	205		KL		5-12	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS),
DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 644

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 205

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY E EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-13-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1000	
TF-2	1000	

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 10 Mileage: 905

PAGE NUMBER: 11

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
96,97	WEOS	EEOS	1043		CH	13	850	850	204	409		KL		5-14	EP
96,101	WEOS	EEOS	1105		CH	13	850		43	452		KL		5-14	
102,103	NEOS	SEOS	1345						46	13	485	KL	DFS-37	5-14	
103,104	NEOS	SEOS	1350						60	73		KL		5-14	
104,105	NEOS	SEOS	1400						55	129		KL		5-14	
105,106	NEOS	SEOS	1420						61	189		KL		5-14	
100,106	WEOS	EEOS	1450						22	211		KL		5-14	
100,105	WEOS	EEOS	1452						22	233		KL		5-14	
100,104	WEOS	EEOS	1454						22	255		KL		5-14	
99,104	WEOS	EEOS	1556						22	277		KL		5-14	
99,103	WEOS	EEOS	1557						14	291		KL		5-14	
99,103	WEOS	EEOS	1554						8	299		KL		5-14	
99,102	WEOS	EEOS	1600						28	327		KL		5-14	
106,107	NEOS	SEOS	1635						62	389		KL		5-14	
107,108	NEOS	SEOS	1642		↓	↓	↓	↓	61	450		KL		5-14	↓

PAGE TOTAL: 730

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 450

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-13-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1060	CH
TF-2	1000	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 11 Mileage: 450

PAGE NUMBER: 12

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
108,109	NEOS - SEOS		1650		CH	13	850	850	63	28	485	KL	DFS 36	5-14	EP
109,110	NEOS - SEOS		1700						65	93		KL		5-14	
101,111	EEOS - WEOS		1724						22	115		KL		5-14	
101,110	EEOS - WEOS		1726						3	118		KL		5-14	
97,110	EEOS - WEOS		1727						19	137		KL		5-14	
97,109	EEOS - WEOS		1729						22	159		KL		5-14	
97,108	EEOS - WEOS		1730						22	181		KL		5-14	
97,107	EEOS - WEOS		1732						22	203		KL		5-14	
100,107	EEOS - WEOS		1733		↓	↓	↓	↓	3	206		KL	capped by 15M	5-14	↓

PAGE TOTAL: 241

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 206

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY E EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-14-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1057	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 12 Mileage: 206

PAGE NUMBER: 13

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
89, 114	Neos.	Seos	11:30		CH	10	850	850	24	230		KP		5-14	EP
87, 114	Neos.	Seos	11:32		CH	10	850		27	257				5-14	
86 114			11:34						27	284				5-14	
83 114			11:36						28	312				5-14	
81 114			11:38						28	340				5-14	
80 114			11:40						26	366				5-14	
64 114			11:42						23	389				5-14	
63 114			11:44						27	416				5-14	
65 114			11:46						27	443				5-14	
66 114			11:48						27	470				5-14	
67 114			11:50						27	12	485		DFS-38	5-14	
68 114			11:52						27	39				5-14	
69 114			11:54						27	66				5-14	
70 114			11:56						27	93				5-14	
71 114	Neos	Seos	11:58		↓	↓	↓	↓	27	120		↓		5-14	↓

PAGE TOTAL: 399

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 120

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-14-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1057	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 13 Mileage: 120

PAGE NUMBER: 14

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
72.114	NEOS - SEOS		1137		CH	10	950	850	27	147		KL		5-14	EP
74.114	NEOS - SEOS		1142		↓	↓	↓	↓	22	169		KL		5-14	↓
35 114	NEOS - SEOS		1143		↓	↓	↓	↓	27	196		KL		5-14	↓

PAGE TOTAL: 76

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 196

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-15-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1130	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 14 Mileage: 196

PAGE NUMBER: 15

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
118, 119	WEOS - EEOS		1140		CH	13	850	1850	60'	256		KL		5-19	EP
120, 121	WEOS - EEOS		1150						61'	317				5-19	
121, 122	WEOS - EEOS		1200						63'	380				5-19	
125, 126	SEOS - NEOS		1330						62	442				5-19	
128, 129	SEOS - NEOS		1340						63	20	485		DFS-41	5-18	
127, 128	SEOS - NEOS		1345						24	44				5-19	
126, 128	SEOS - NEOS		1400						37	81				5-19	
126, 127	SEOS - NEOS		1419						25'	106				5-19	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 395

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 1106

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-16-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1000	CH
TF-2	1010	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 15 Mileage: 106

PAGE NUMBER: 16

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET: WEDGE	INDICATOR: WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
132,133	NEOS * SEOS	1000		CH	11	850	850	22	128		KL		5-18	EP
131, 133	SEOS * NEOS	1010		CH	11			154	287		KL		5-18	
131, 137	EEOS * WEOS	1018		CH				26	313		KL		5-18	
135, 136	SEOS * NEOS	1030		CH				22	335		KL		5-18	
134, 136	NEOS * SEOS	1035		CH				114	449		KL		5-18	
133, 134	EEOS * WEOS	1040		CH				22	471		KL	CAP 35Q	7-8	KL
133, 136	EEOS * WEOS	1045		CH				8	479		KL		5-18	EP
133, 135	EEOS * WEOS	1056		CH				38	32	485	KL	DFS-43	5-18	
132, 135	EEOS * WEOS	1059		CH				50	82		KL		5-18	
137, 134	SEOS * NEOS	1103		CH				22	104		KL		5-18	
136, 138	EEOS * WEOS	1115		CH				8	112		KL		5-18	
134, 138		1125		CH				115	227		KL	CAP 35R	7-8	KL
135, 137		1132		CH				90	317		KL		5-18	EP
135, 138		1135		CH				21	338		KL		5-18	
136, 139	↓ ↓	1143		CH	↓	↓	↓	208	61	485	KL	DFS-44	5-18	↓

PAGE TOTAL: 925

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 61

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-4-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-16-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1000	CH
TF-2	1010	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 16 Mileage: 61

PAGE NUMBER: 17

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
137.139	EEOS WEOS	1202		CH	11	8050	B50	43	104		KL		5-18	EP
140.141	NEOS SEOS	1250						22	126		KL		5-18	EP
139.141	EEOS WEOS	1255						183	309		KL		5-18	EP
139.140	EEOS WEOS	1316						47	356		KL		5-18	EP
115.141	EEOS WEOS	1325		↓	↓	↓	↓	186	57	485	KL	OFS-45	5-18	EP

PAGE TOTAL: 481

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 57

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-19-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0930	CH
TF-3	0935	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 19 Mileage: 57

PAGE NUMBER: 18

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
140, 144	SEOS NEOS	0940		CH	11	850	850	39	96		KL		5-19-15	EP
139, 144	" "	0944						33	129		KL		5-19-15	EP
143, 144	" "	0950						58	187		KL		5-19-15	EP
14F, 147 E.	NEOS R320	1001						50	237		~		5-20-15	KL
14F, 147 E.	R320-R321	1006						35	272		~		5-20-15	~
14F, 89 E.	NEOS-SEOS	1010						22	294		~		5-20-15	~
14F, 147 W.	NEOS R320	1013						50	344		~		5-20-15	~
14F, 147 W.	R320-R321	1018						35	379		~		5-20-15	~
14F, 89 W	NEOS SEOS	1020		↓	↓	↓	↓	22	401		~		5-20-15	~

PAGE TOTAL: 130

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 401

DAILY TOTAL WELDED (FT)

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0900	RZ
TF-3	0910	RZ
TF-4	1300	RZ
TF-5	1305	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 0 Mileage: 0

PAGE NUMBER: 1

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
1, 36	WEOS - EEOS		1055		RZ	10	850	850	41	41		KL		5-6-15	EP
5, 36	WEOS - EEOS		1102			10			13	54		KL		5-6-15	
5, 37	WEOS - EEOS		1103			10			10	64				5-6-15	
6, 37	WEOS - EEOS		1104						22	86				5-6-15	
7, 37	WEOS - EEOS		1106						22	108	100		DFS-5	5-6-15	
8, 37	WEOS - EEOS		1108						10	118				5-7-15	
9, 39	WEOS - EEOS		1115						14	32				5-7-15	
9, 39	WEOS - EEOS		1117						22	54				5-6-15	
10, 39	WEOS - EEOS		1119						22	76				5-6-15	
11, 39	WEOS - EEOS		1145						7	83				5-6-15	
11, 40	WEOS - EEOS		1146						15	98				5-6-15	
12, 40	WEOS - EEOS		1148						22	120				5-7-15	
13, 40	WEOS - EEOS		1150						22	142				5-7-15	
41, 42	NEOS - SEOS		1202						22	164				5-7-15	
17, 43	WEOS - EEOS		1535		↓	↓	↓	↓	18	182		↓	Capped by B-16	—	↓

PAGE TOTAL: 282

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 182

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY EN[illegible]ERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0900	RZ
TF-3	0910	RZ
TF-4	1300	RZ
TF-5	1305	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 1 Mileage: 182

PAGE NUMBER: 2

SEAM NUMBER	SEAM SECTION START * FINISH POINT * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
16,43	WEOS EEOS	1536		RZ	10	6050	850	22	204		KL		5-7-15	EP
19,48	WEOS EEOS	1539						22	226				5-7-15	
43,48	↓ ↓	1541						7	233				5-7-15	
44,48	↓ ↓	1543						19	252				5-7-15	
44,45	NEOS SEOS	1550						25	277				5-7-15	
42,44	WEOS - EEOS	1554						4	281				5-7-15	
14,48	WEOS - EEOS	1428						18	299				5-7-15	
15,42	WEOS - EEOS	1430						12	311				5-7-15	
16,42	WEOS - EEOS	1432						23	344				5-7-15	
17,43	WEOS - EEOS	1535						18	362				5-7-15	
20,48	WEOS - EEOS	1541						5	367				5-7-15	
20,44	WEOS - EEOS	1542						17	384				5-7-15	
22,44	WEOS - EEOS	1543						23	407				5-7-15	
22,44	WEOS - EEOS	1545		↓	↓	↓	↓	9	416		↓		5-7-15	↓
17,42	CAPPED BY 3Q		—	—	—	—	—	—	—	—	—	—	—	—

PAGE TOTAL: 234

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 416

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-7-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0930	RZ
TF-4	0939	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 2 Mileage: 416

PAGE NUMBER: 3

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
47, 49	NEOS - SEOS		10:52		RZ	12	850	850	22	438		KL		5-7-15	EP
44, 49	NEOS	SEOS	10:55						81	34	485		DFS-9	5-7-15	
50, 49	WEOS	EEOS	11:02						25	59				5-7-15	
44, 50	NEOS - SEOS		11:10						9	68				5-7-15	
22, 50	WEOS - EEOS		11:20						13	81				5-7-15	
23, 50	WEOS - EEOS		11:22						13	94				5-7-15	
23, 49	WEOS - EEOS		11:24						10	104				5-7-15	
24, 49	WEOS - EEOS		11:26						22	126				5-7-15	
25, 49	WEOS - EEOS		11:26						22	148				5-7-15	
26, 49	WEOS - EEOS		11:38						17	165				5-11-15	
26, 51	WEOS - EEOS		11:39						5	170				5-11-15	
27, 51	WEOS - EEOS		11:40						22	192				5-11-15	
53, 54	WEOS - EEOS		14:52						501	209	485		DFS-15	5-8-15	
55, 56	WEOS - EEOS		16:25		↓	↓	↓	↓	501	225	485	↓	DFS-16	5-8-15	↓

PAGE TOTAL: 1263

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 225

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-4	1315	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 3 Mileage: 225

PAGE NUMBER: 4

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
58,59	WEOS	EEOS	1325	87	RZ	12	850	850	506	246	485	KL	DFS-18	5-8-15	EP
60,61	↓	↓	1415	83	↓	↓	↓	↓	505	266	485	KL	DFS-20	5-8-15	↓
62,63	↓	↓	1548	81	↓	↓	↓	↓	505	286	485	KL	DFS-22	5-8-15	↓

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 1516

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 286

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY EI EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-9-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1030	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 4 Mileage: 286

PAGE NUMBER: 5

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
62,65	NEOS-EEOS	1030	82	RZ	10	950°	850°	22	308		KL		5-14-15	EP
61,66	NEOS-SEOS	1033	82					22	330		KL		5-11-15	
60,67	NEOS-SEOS	1036	82					22	352		KL		5-11-15	
59,79	NEOS-SEOS	1050	82					22	374		KL		5-11-15	
58,69	NEOS-SEOS	1054	83					22	396		KL		5-11-15	
57,70	NEOS-SEOS	1116	83					22	418		KL		5-11-15	
56,71	NEOS-SEOS	1119	83					22	440		KL		5-11-15	
55,73	NEOS-SEOS	1120	83					22	462		KL		5-11-15	
24,77	WEOS-EEOS	1210	84					20	482		KL		5-11-15	
25,77	WEOS-EEOS	1212	84					22	19	485	KL	DFS-24	5-11-15	
30,77	WEOS-EEOS	1214	84					22	41		KL		5-11-15	
31,77	WEOS-EEOS	1216	84					22	63		KL		5-11-15	
32,77	WEOS-EEOS	1218	84					22	85		KL		5-11-15	
33,77	WEOS-EEOS	1220	85					22	107		KL		5-11-15	
34,77	WEOS-EEOS	1222	85	↓	↓	↓	↓	22	129		KL		5-11-15	↓

PAGE TOTAL: 328

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 129

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-5-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1030	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 5 Mileage: 124

PAGE NUMBER: 6

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
35.77	WEOS	EEOS	1226	86	RZ	10	850	850	8'	137		KL		5-11-15	EP
54.74	NEOS	SEOS	1302	86					22'	159				5-11-15	
53.78	NEOS	SEOS	1304	87					5	164				5-11-15	
53.76			1305	87					15	179				5-11-15	
52.76			1307	87					7	186				5-11-15	
52.77			1308	87					13	199				5-11-15	
51.77			1310	87					13	212				5-11-15	
72.73	NEOS	SEOS	1317	87					22	234				5-11-15	

PAGE TOTAL: 165

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 234

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-11-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	11:21	RZ
TF-4	1145	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 6 Mileage: 234

PAGE NUMBER: 7

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
64,90	WEOS EEOS	11:15		RZ	12	850	850	451	197	485	KL	DES-27	5-12	EP
91,92	NEOS SEOS	12:00		"	"	"	"	22	219		KL		5-12	"
95,96	NEOS SEOS	13:01		"	"	"	"	22	241		KL		5-12	"
93,94	" "	13:10		"	"	"	"	22	263		KL		5-12	"
94,95	WEOS EEOS	1430		"	"	"	"	152	415		KL		5-12	"
84,86	WEOS EEOS	1444		"	"	"	"	192	125	485	KL	DES-29	5-12	"
86,86	" "	1500		"	"	"	"	72	197		KL		5-12	"
87,88	NEOS SEOS	16:19		"	"	"	"	22	219		KL		5-12	"
88,89	WEOS SEOS	1645		"	"	"	"	147	366		KL		5-12	"
87,89	WEOS SEOS	1700		↓	↓	↓	↓	242	123	485	KL	DES-31	5-12	↓

PAGE TOTAL: 1344

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 123

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-12-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1000	CH
TF-2	1050	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 7 Mileage: 123

PAGE NUMBER: 8

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
90.91	WEOS	CEOS	1024		MS	11	850	850	200	323		KL		5-12	EP
90.92	↓	↓	1043		↓	↓	↓	↓	99	427		KL		5-12	↓
93.94	↓	↓	1116		↓	↓	↓	↓	106	93	485	KL	DES-34	5-12	↓
93.95	↓	↓	1127		↓	↓	↓	↓	188	231		KL		5-12	↓

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 593

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 231

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY F EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-13-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1010	MS
TF-4	1020	MS
TF-5	1530	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 8 Mileage: 231

PAGE NUMBER: 9

SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
94,96	WEOS	EEOS	1025		MS	11	850	850	104	335		KL		5-12	ED
95,96	WEOS	EEOS	1035						186	336	485		DES-35	5-13	
97,101	NEOS	SEOS	1058						8	44				5-14	
98,100	NEOS	SEOS	1106						17	61				5-14	
97,98	WEOS	EEOS	1123						60	121				5-14	
97,100	WEOS	EEOS	1130						68	189				5-14	
98,99	WEOS	EEOS	1140						43	232				5-14	
110,111	NEOS	SEOS	1642						66	298				5-14	
111,112	NEOS	SEOS	1705						66	364				5-14	
112,113	NEOS	SEOS	1713						68	432				5-14	
96,113	EEOS	WEOS	1740						22	454				5-14	
96,112	EEOS	WEOS	1743						6	460				5-14	
101,112	EEOS	WEOS	1744		↓	↓	↓	↓	16	476		↓		5-14	↓

PAGE TOTAL: 730

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 476

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLE EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-14-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	1055	MS
TF-4	1055	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 9 Mileage: 476

PAGE NUMBER: 10

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
114,115	S EOS	W EOS	12:55		MS	11	850	850	498	484	490	KL	DES-39	5-18	EP
35,116	N EOS	S EOS	1452		↓	↓	↓	↓	28	22	490		DES-40	5-18	EP
114,116	N EOS	S EOS	1500		↓	↓	↓	↓	28	50		↓	–	5-18	EP

PAGE TOTAL: 574

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 50

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-15-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	1130	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 10 Mileage: 50

PAGE NUMBER: 11

SEAM NUMBER	SEAM SECTION START POINT *	FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
117, 118	WEOS	EEOS	1140		MS	11	850	850	58	108		KL		5-19	EP
119, 120	WEOS	EEOS	1157						61	169		KL		5-19	
120, 124	WEOS	EEOS	1206						37	206		KL		5-19	
123, 124	SEOS	NEOS	1210						26	232		KL		5-19	
122, 123	WEOS	EEOS	1215						76	308		KL		5-19	
124, 125	SEOS	NEOS	13:10						61	319		KL		5-19	
129, 130	SEOS	NEOS	1355		↓	↓	↓	↓	62	381		KL		5-18	↓

PAGE TOTAL: 331

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 381

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTL EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-16-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	10:30	JM
TF-4	10:35	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 11 Mileage: 3801

PAGE NUMBER: 12

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET: WEDGE	INDICATOR: WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
117,131	EEOS - WEOS	1033		JM	10	850	850	22	403		KL		5-19	EP
118,131	EEOS - WEOS	1035		JM				22	425		KL		5-19	
119,131	EEOS - WEOS	1037		JM				22	447		KL		5-19	
120,131	EEOS - WEOS	1039		JM				22	469		KL		5-19	
121,131	EEOS - WEOS	1043		JM				22	6	485	KL	DFS-42	5-19	
122,131	EEOS - WEOS	1045		JM				23	29				5-19	
124,131	EEOS - WEOS	1110		JM				10	39				5-19	
125,131	EEOS - WEOS	1111		JM				22	61				5-19	
126,131	EEOS - WEOS	1113		JM				19	80				5-19	
126,132	EEOS - WEOS	1114		JM				4	84			Cap Ped	by R-263	
128,132	EEOS - WEOS	1135		JM				11	95				5-18	
129,132	EEOS - WEOS	1136		JM				18	113				5-18	
129,135	EEOS - WEOS	1138		JM				5	118				5-18	
130,135	EEOS - WEOS	1139		JM				24	142				5-18	
130,142	SEOS - NEOS	1200		JM				64	206				5-18	

PAGE TOTAL: 310

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 206

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTL EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-16-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1030	JM
TF-4	1035	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 12 Mileage: 206

PAGE NUMBER: 13

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
142,143	SEOS	NEOS	1250		JM	10	450	450	65	271		KL		5-18	EP
137,143	SEOS	WEOS	1306		JM	↓	↓	↓	14	265		KL		5-18	EP
139,143	SEOS	WEOS	1308		JM	↓	↓	↓	6	251		KL		5-18	EP

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 85

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 291

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S NEJAD
Date: 5-29-15

BRANTLE EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-19-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-4	0940	MS
TF-4	0940	MS
TF-4	1300	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 13 Mileage: 291

PAGE NUMBER: 14

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
144,145	SOOS NEOS	1050		MS	11	850	850	163	454		KL		5-19	EP
145,146	SOOS - 14B	1252		MS				880'	57	485	KL	DFS-46	5-19	
145,146	14B - NEOS	1305		MS				79'	136		KL		5-19	
146,147'	NEOS SOOS	1330		MS				160'	296		KL		5-19	
147,150'	NEOS SOOS	1346	90	MS				18'	314		KL		5-19	
147,148	NEOS SOOS	1418		MS				72	386		KL		5-19	
147,149	" "	1425		MS				99	10	475	KL	DFS 47	5-19	
113,148	" "	1450		MS				69	79		KL		5-20	
96,148	" "	1510	95	MS				12	91		KL		5-20	
96,149	" "	1512		MS				18	101		KL		5-20	
95,149	" "	1535						22	123		KL		5-20	
93,149	" "	1537						22	145		KL		5-20	
92,149	" "	1540						22	167		KL		5-20	
90,149	" "	1543						22	189		KL		5-20	
89,147	NEOS EOOS	1610						22	211		KL		5-20	

PAGE TOTAL: 880

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 211

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-19-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-4	0940	MS
TF-5	0940	MS
TF-6	1300	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 14 Mileage: 211

PAGE NUMBER: 15

SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
89, 150	WEOS	EEOS	1614		MS	11	850	850	22	233		KL		5-20-15	EP
85, 145			1617						12	245				5-20	
114, 145			1619						10	255				5-20	
114, 144			1620						14	269				5-20	
115, 144			1622						11	280				5-20	
144, 151			1623						15	295				5-20	
115, 151			1630						9	304				5-20	
141, 151	SEOS	NEOS	1632						10	314				5-20	
140, 151	EEOS	WEOS	1634						15	329				5-20	
146, 150	WEOS	EOOS	11040						22	351				5-20	
145, R290	SEOS	NEOS	1650						14	365				5-20	
150, R290	SEOS	NEOS	1653						14	379				5-20	
149, 149	WEOS	EEOS	1659						10	389				5-20	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 178

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 389

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-6-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	11:40	MS
TF-2	11:50	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 15 Mileage: 389

PAGE NUMBER: 16

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
115,152	NEOS SEOS	1522	93	MS	12	850	850	307	266	450	KL	DFS 48	7-7-15	EP
152,153	NEOS SEOS	1603	94	"	11	850	850	168	434		KL		7-7-15	EP
153,154	NEOS EOS	1620	94	"	12	850	850	22	456		KL		7-7-15	EP
152,154	NEOS SEOS	1623	94	"	12	850	850	151	147	460	KL	DFS-49	7-7-15	EP
153,155	NEOS SEOS	1652	93	"	12	850	850	175	322		KL		7-7-15	EP
154,155	NEOS SEOS	1708	91	"	12	850	850	159	31	450	KL	DFS-50	7-7-15	EP
155,156	NEOS SEOS	1730	90	"	12	850	850	340	371		KL		7-7-15	EP

PAGE TOTAL: 1342

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 371 ✓

DAILY TOTAL WELDED (FT): 1342

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-4-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF 1	0810	MS
TF-2	0825	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 16 Mileage: 371

PAGE NUMBER: 17

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
156, 157	NEOS SEOS	0930	75	MS	12	850	850	153	74	450	KL	DFS-51	7-7-15	EP
157, 158	NEOS EEOS	1048	83	"	11	850	850	22	96		KL		7-7-15	EP
156, 158	NEOS SEOS	0951	83	"	12	850	850	202	298		KL		7-7-15	EP
157, 159	NEOS SEOS	1038	84	"	12	850	850	154	452		KL		7-7-15	EP
158, 159	NEOS SEOS	1052	85	"	12	850	850	146	138	460	KL	DFS-52	7-7-15	EP
158, 160	NEOS SEOS	1104	86	"	12	850	850	51	189		KL		7-7-15	EP
159, 160	NEOS EEOS	1117	87	"	11	850	850	22	211		KL		7-7-15	EP
162, 163	NEOS EEOS	1146	89	"	12	850	850	29	240		KL		7-7-15	EP
163, 164	NEOS EEOS	1150	90	"	12	850	850	42	282		KL		7-7-15	EP
164, 165	NEOS EEOS	1155	90	"	12	850	850	41	323		KL		7-7-15	EP
161, 162	SEOS NEOS	1257	91	"	12	850	850	24	347		KL		7-7-15	EP
161, 163	SEOS NEOS	1300	90	"	12	850	850	21	368		KL		7-7-15	EP
159, 161	SEOS NEOS	1305	89	"	12	850	850	38	406		KL		7-7-15	EP
159, 163	SEOS NEOS	1308	89	"	12	850	850	3	409		KL		7-7-15	EP
159, 164	SEOS NEOS	1309	89	"	12	850	850	22	431		KL		7-7-15	EP

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 970

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 431 ✓

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # 4056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	12.48	MS
TF-4	12:55	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 17 Mileage: 431

PAGE NUMBER: 18

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
159,165	SEOS	NEOS	1311	94	MS	12	850	850	22	453		KL		7-7-15	EP
165,166	WEOS	EEOS	1314	94	MS	12	850	850	42	35	460	KL	DFS-53	7-7-15	EP
166,167	WEOS	EEOS	1318	93	MS	12	850	850	44	79		KL		7-7-15	EP
167,168	WEOS	EEOS	1322	93	"	12	850	850	45	124		KL		7-7-15	EP
168,169	WEOS	EEOS	1327	93	"	12	850	850	46	170		KL		7-7-15	EP
169,170	WEOS	EEOS	1335	93	"	12	850	850	48	218		KL		7-7-15	EP
159,166	SEOS	NEOS	1340	94	"	12	850	850	22	240		KL		7-7-15	EP
159,167	SEOS	NEOS	1348	94	"	12	850	850	22	262		KL		7-7-15	EP
159,168	SEOS	NEOS	1350	94	"	12	850	850	22	284		KL		7-7-15	EP
159,169	SEOS	NEOS	1352	94	"	12	850	850	22	306		KL		7-7-15	EP
159,170	SEOS	NEOS	1354	94	"	12	850	850	22	328		KL		7-7-15	EP
170,171	WEOS	EEOS	1403	93	"	12	850	850	49	377		KL		7-7-15	EP
171,172	WEOS	EEOS	1408	92	"	12	850	850	54	431		KL		7-7-15	EP
172,173	WEOS	EEOS	1413	92	"	12	850	850	53	34	450	KL	DFS-54	7-7-15	EP
159,171	SEOS	NEOS	1422	92	"	12	850	850	22	56		KL		7-7-15	EP

PAGE TOTAL: 535

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 56 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1248	MS
TF-4	1255	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 18 Mileage: 54

PAGE NUMBER: 19

SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
159,172	SEOS	NEOS	1424	92	MS	12	850	850	22	78		KL		7-7-15	EP
159,173	SEOS	NEOS	1426	92	"	12	850	850	22	100		KL		7-7-15	EP
173,174	SEOS	NEOS	1430	91	"	12	850	850	55	155		KL		7-7-15	EP
174,175	SEOS	NEOS	1435	91	"	12	850	850	56	211		KL		7-7-15	EP
175,176	SEOS	NEOS	1442	90	"	12	850	850	55	266		KL		7-7-15	EP
176,177	SEOS	NEOS	1449	89	"	12	850	850	54	320		KL		7-7-15	EP
177,180	SEOS	NEOS	1528	89	"	12	850	850	25	345		KL		7-7-15	EP
179,180	SEOS	NEOS	1531	88	"	12	850	850	3	348		KL		7-7-15	EP
177,179	SEOS	NEOS	1532	88	"	12	850	850	28	376		KL		7-7-15	EP
117,180	SEOS	NEOS	1535	88	"	12	850	850	24	400		KL		7-7-15	EP
117,179	SEOS	NEOS	1538	87	"	12	850	850	26	426		KL		7-7-15	EP
160,178	SEOS	NEOS	1542	87	"	12	850	850	22	448		KL		7-7-15	EP
159,174	SEOS	NEOS	1547	86	"	12	850	850	22	20	450	KL	DSF 55	7-7-15	EP
159,175	SEOS	NEOS	1549	86	"	12	850	850	10	30		KL		7-7-15	EP
160,175	SEOS	NEOS	1550	86	"	12	850	850	12	42		KL		7-7-15	EP

PAGE TOTAL: 436

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 42 V

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	1248	MS
TF-4	1255	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 19 Mileage: 42

PAGE NUMBER: 20

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
160, 176	SEOS	NEOS	1553	84	MS	12	850	850	22	64		KL		7-7-15	EP
160, 177	SEOS	NEOS	1555	83	"	12	850	850	17	81		KL		7-7-15	EP
177, 178	SEOS	NEOS	1556	83	"	12	850	850	5	86		KL		7-8-15	EP
141, 152	WEOS	EEOS	1605	82	"	12	850	850	22	108		KL		7-8-15	EP
139, 154	WEOS	EEOS	1608	82	"	12	850	850	22	130		KL		7-8-15	EP
138, 155	WEOS	EEOS	1631	79	"	12	850	850	22	152		KL		7-8-15	EP
134, 156	WEOS	EEOS	1634	79	"	12	850	850	22	174		KL		7-8-15	EP
133, 39N	WEOS	EEOS	1636	74	"	12	850	850	20	194		KL		7-8-15	EP
131, 39P	WEOS	EEOS	1639	73	"	12	850	850	20	214		KL		7-8-15	EP
158, 39N	WEOS	EEOS	1645	73	"	12	850	850	21	235		KL		7-8-15	EP
178, 39P	WEOS	EEOS	1647	73	"	12	850	850	21	256		KL		7-8-15	EP

PAGE TOTAL: 214

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 256 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

Section 4
Geomembrane Extrusion Seaming Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
1	0930	JM
2	1315	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 0 Mileage: 0

PAGE NUMBER: 1

EXTRUSION SEAMING									VACUUM TESTING				
SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
55 T-FN	NEOS	SEOS	930	78	JM	22	22		BP	5-18-15	BV	P	BP	
54	N	S	1000	79		22	44			5-16-15				
53	N	S	1030	80		22	66			5-16-15				
52	N	S	1100	81		22	88			5-16-15				
51	N	S	1130	82		29	17	100		5-16-15				DSX -1
46	N	S	1:30	83		15	32			5-16-15				
45	N	S	1:40	84		22	54			5-16-15				
43	N	S	2:10	83		22	76			5-16-15				
41	N	S	2:40	84		22	98			5-16-15				
40	N	S	300	85		22	120			5-16-15				
38	N	S	313	85		15	135			5-16-15				
38	N	S	351	85		7	142			5-16-15				
37	N	S	400	84		20	162			5-16-15	↓	↓	↓	
36 ↓	N	S	432	84		18	180		↓	5-16-15	BV	P	BP	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 280

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 0

DAILY TOTAL WELDED (FT): 280

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY E[illegible]NEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
1	0930	JM
2	1315	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 1 Mileage: 180

PAGE NUMBER: 2

EXTRUSION SEAMING										VACUUM TESTING				
SEAM NUMBER	* SEAM SECTION START POINT	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
1 TIEW	NEOS	SBOS	820	84	JM	6	186		EP	5-16-15	EV	P	EP	
2 ~	NEOS	SBOS	825	84	"	5	191		EP	5-16-15	EV	P	EP	
2 ~	NEOS	SBOS	830	84	↓	14	205		EP	5-16-15	EV	P	EP	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 25

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 180

DAILY TOTAL WELDED (FT): 205

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-11-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
1	916	JM
5	1300	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 2 Mileage: 205

PAGE NUMBER: 3

EXTRUSION SEAMING										VACUUM TESTING				
SEAM NUMBER	* SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
63 TRIAL	NEOS SEOS	1030	83	JM	17	222		EP	5-18-15	EV	P	EP	
62 "	NEOS SEOS	1050	84	JM	19	241							
61 "	NEOS SEOS	1135	84	JM	19	260							
60 "	NEOS SEOS	1155	85	JM	18.5	278.5							
59 "	NEOS SEOS	1516	86	JM	19	297.5							
58 "	NEOS SEOS	218	86	JM	19	316.5							
57 "	NEOS SEOS	226	86	JM	19	335.5							
56 "	NEOS SEOS	303	86	JM	19	354.5			5-18-15	EV	P	EP	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 149.5

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 205

DAILY TOTAL WELDED (FT): 354.5

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-12-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
4	200 PM	CH
5	220 PM	C.R.

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 3 Mileage: 354.5

PAGE NUMBER: 4

EXTRUSION SEAMING										VACUUM TESTING				
SEAM NUMBER	* SEAM SECTION START POINT	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
80 T18-1N	NEOS	SEOS	2:30	88	CH	19.5			BP	5-18-15	BY	P	BP	
64 ~	NEOS	SEOS	2:39	88	CH	19				5-18-15	~	P	~	
85 ~	NEOS	SEOS	3:33	87	CH	19.5				5-18-15	~	P	~	
84 ~	NEOS	SEOS	3:41	96	CH	20.5				5-18-15	~	P	~	
82 ~	NEOS	SEOS	3:49	84	CH	20.5				5-18-15	~	P	~	
90 ~	NEOS	SEOS	4:38	83	CH	16.5				5-18-15	~	P	~	
89 ~	NEOS	SEOS	4:46	83	CH	19.5	485	SR DX5-2		5-18-15	~	P	~	DSX-2
88 ~	NEOS	SEOS	4:53	83	CH	19.5	19.5			5-18-15	~	P	~	

PAGE TOTAL: 154.5

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 19.5

DAILY TOTAL WELDED (FT): -

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-14-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TX-1	0800	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 4 Mileage: 20

PAGE NUMBER: 5

EXTRUSION SEAMING									VACUUM TESTING				
SEAM NUMBER	* SEAM SECTION START POINT *	FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
102 TBW	N805	S803	915	82	JM	26	46		E.P.	5-18-15	BV	P	EP	
99			940	83	~	19	65							
98			954	84	~	20	75/10	DSX-4						DSX-4
97			1015	84	~	20	30							
96			1030	85	~	20	50							
94			1145	86	~	11	61							
93			122	87	~	8	69			↓	↓	↓	↓	
91	↓	↓	145	88	~	17	86		↓	5-18-15	BV	P	EP	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 141

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 86 ✓

DAILY TOTAL WELDED (FT): 141

REVIEWED BY : S. NEJAD
DATE : 5-29-15

Section 5
Geomembrane Defect, Repair, and Vacuum Test Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 1

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	5,6	10' S OF NEOS	DF	5-5	DFS-1	5-7	P	2.5×5	A047	JM	EP	5-13	EV	P	KL
B	13,14	9' N OF SEOS	DF	5-5	DFS-2	5-7	P	2×5.5	A047	JM	"	5-13	EV	P	KL
C	23,24	18' S OF NEOS	DF	5-5	DFS-3	5-9	P	2×5.5	A047	JM	"	5-13	EV	P	KL
D	33,34	10' S OF NEOS	DF	5-6	DFS-4	5-12	P	2×5	A037	ER	KL	5-18	EV	P	KL
F	40,41	95' W OF EEOS	DF	5-6	DFS-6	5-9	P	2×5.5	A047	JM	EP	5-13	EV	P	KL
G	7,37	8' W OF EEOS	DF	5-6	DFS-5	5-7	P	2.5×5	A047	JM	EP	5-13	EV	P	KL
H	43,45	37' E OF WEOS	DF	5-7	DFS-7	5-9	P	6.5×1.5	A047	JM	"	5-13	EV	P	KL
J	45,47	13' E OF WEOS	DF	5-7	DFS-8	5-7	P	2×6	A047	JM	"	5-13	EV	P	KL
K	2,3	SW CORNER @ PLANT	EXT	5-5	FUSION SEAM	5-6		—	—	—	—	—	—	—	—
M	1,2,3	T	T	5-6	—	5-7	P	2.5×2.5	A047	JM	EP	5-13	EV	P	KL
N	52,53	145 W of DFS-12	B.O.	5-7	—	5-9	P	2.5×3	A047	JM	EP	5-13	EV	P	KL
P	57	6 E / 7' S.	T	5-7	—	5-9	P	2×2	A047	JM	EP	5-13	EV	P	KL
Q	44,49	34' W OF EEOS	DF	5-7	DFS-9	5-9	P	2×5	A047	JM		5-14	EV	P	KL
R	49,51	87' W OF EEOS	DF	5-7	DFS-10	5-9	P	2×5	A047	JM		5-14	EV	P	KL
S	51,52	104' W OF EEOS	DF	5-7	DFS-11	5-9	P	2×5	A047	JM		5-14	EV	P	KL
T	52,53	120' W OF EEOS	DF	5-7	DFS-12	5-9	P	2×5	A047	JM		5-14	EV	P	KL
W	54,55	137' W OF EEOS	DF	5-7	DFS-13	5-9	P	2×5	A047	JM		5-14	EV	P	KL
X	53,54	209' W OF EEOS	DF	5-7	DSF-15	5-9	P	2×5	A047	JM		5-14	EV	P	KL
Y	56,57	153' W OF EEOS	DF	5-7	DSF-14	5-9	P	2×5	A047	JM		5-15	EV	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6/11/15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 2

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	55, 56	225 W of EEOS	DF	5-7-15	DFS-16	P	P	2x6	047	JM	KL	5-13	EV	P	KL
B	51 Tie IN	12'S of NEOS	DX	5-8-15	DXS-1	P	5-9	2x6	047	JM	KL	5-16	EV	P	KL
C	57, 58	174' W of EEOS	DF	5-8-15	DFS-17	P	5-9	2x6	047	JM	KL	5-16	EV	P	KL
D	58, 59	246' W of EEOS	DF	5-8-15	DFS-18	P	5-9	2x5	047	JM	KL	5-13	EV	P	KL
F	59, 60	195' W of EEOS	DF	5-8-15	DFS-19	P	5-9	2x9	047	JM	KL	5-13	EV	P	KL
G	60, 61	266' W of EEOS	DF	5-8-15	DFS-20	P	5-9	2x6	047	JM	KL	5-13	EV	P	KL
H	61, 62	215' W of EEOS	DF	5-8-15	DFS-21	P	5-9	2x9	047	JM	KL	5-13	EV	P	KL
J	62, 63	286' W of EEOS	DF	5-8-15	DFS-22	P	5-9	2x5	047	JM	KL	5-13	EV	P	KL
K	63, 64	236' W of EEOS	DF	5-8-15	DFS-23	P	5-9	2x5	047	JM	KL	5-13	EV	P	KL
M	74, 75	7' E of WEOS	IO	5-9-15		P	5-12	2x9	057	SM	KL	5-18	EV	P	KL
N	29, 77	14' W of EEOS	DF	5-9-15	DFS-24	P	5-12	2x5	057	SM	KL	5-18	EV	P	KL
P	P3, LK	NEOS @ P-2	T	5-7-		P	5-7	2x2	047	JM	KL	5-16	EV	P	KL
Q	P2, LK	WEOS @ Tie IN	T	5-7-		P	5-7	2x2	047	JM	KL	5-16	EV	P	KL
R	P3	7'N, 6' E of SEC	CUT	5-9-15		P	5-9	2x2	047	JM	KL	5-16	EV	P	KL
S	P2, P3	NEOS @ P1	T	5-9-15		P	5-7	2x2	047	JM	KL	5-13	EV	P	KL
T	P1, P2	EEOS	T	Covered By F4		—	—	—	—	—	—	—	—	—	—
W	P1, P4, P36	INT.	T	5-9		P	5-7	4x4	047	JM	KL	5-13	EV	P	KL
X	P2, T.I.	5'S of NEOS	T	5-7-15		P	5-9	2x4	047	JM	KL	5-16	EV	P	KL
Y	P1, P2	@ Tie IN	T	5-7-15		P	5-9	2x2	047	JM	KL	5-13	EV	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY / SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	R6	T@ P6, P7 + P37	T	5-7-15		5-7-15	P	2x2	A047	JM	EP	5-13-15	EV	P	EP
B	R7	T@ P7, P8 + P37	T	5-7-15		5-7-15	P	2x2	A047	JM	EP	↓	↓	↓	↓
C	R31	T@ P8, P37 + P39	T	5-7-15		5-7-15	P	2x2	A047	JM	EP	↓	↓	↓	↓
D	R8	T@ P8, P9 + P39	T	5-7-15		5-7-15	P	2x2	A047	JM	EP	5-13-15	EV	P	EP
F	R9	T@ P9, P10 + P39	T	5-7-15		5-7-15	P	3x3	A047	JM	EP	5-18-15	EV	P	EP
G	R10	T@ P10, P11 + P39	T	5-7-15		5-7-15	P	2x2	↓	↓	↓	5-18-15	EV	P	EP
H	R32	T@ P11, P39 + P40	T	5-7-15		5-7-15	P	2.5x2.5				5-18-15	EV	P	EP
J	R11	T@ P11, P12 + P40	T	5-7-15		5-7-15	P	2x2				5-13-15	EV	P	EP
K	R12	T@ P12, P13 + P40	T	5-7-15		5-7-15	P	2x2				↓	↓	↓	↓
M	R13	T@ P13, P14, P40 + P42	T	5-7-15		5-7-15	P	7x10							
N	R14	T@ P14, P15 + P42	T	5-7-15		5-7-15	P	2x2				↓	↓	↓	↓
P	R15	T@ P15, P16 + P42	T	5-7-15		5-7-15	P	2x2				5-13-15	EV	P	EP
Q	R16	INT@ P16, P17, P42 + P43	T	5-7-15		5-7-15	P	45x10				5-13-15	EV	P	EP
R	R17	T@ P17, P18 + P43	T	5-7-15		5-7-15	P	2x2				5-13-15	EV	P	EP
S	R18	INT@ P18, P19, P43 + P48	X	5-7-15		5-7-15	P	35x35				5-13-15	EV	P	EP
T	R19	T@ P19, P20 + P48	T	5-7-15		5-7-15	P	2x2				5-18-15	EV	P	EP
W	R49	T@ P20, P44 + P48	T	5-7-15		5-7-15	P	3x3				5-18-15	EV	P	EP
X	R20	T@ P20, P21, + P44	T	5-7-15		5-7-15	P	2x2				5-18-15	EV	P	EP
Y	R21	T@ P21, P22 + P44	T	5-7-15		5-7-15	P	3x3				5-18-15	EV	P	EP

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

5-13-15

PAGE# 4

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	VACUUM TEST: DATE	TECH ID	P/F	QA MON.
A	R50	T @ P22, P49 + P50	T	5-7-15		5-7-15	P	3x3	A047	JM	BP	5-16-15	EV	P	BP
B	R22	T @ P22, P23 + P50	T	5-7-15		5-7-15	P	3x3	A047	JM	BP	"	"	"	"
C	R53	Y @ P23, P49 + P50	Y	5-7-15		5-7-15	P	3x3	A047	JM	BP	"	"	"	"
D	R23	T @ P23, P24 + P49	T	5-7-15		5-9-15	P	2x2	A047	JM	BP	↓	↓	↓	↓
F	R4	INT @ P1, P4, P5 + P36	INT	5-7-15		5-7-15	P	4x4	A047	JM	BP	5-16-15	EV	P	BP
G	R35	INT @ P5, P36 + P37	INT	5-7-15		5-7-15	P	2x2	A047	JM	BP	5-16-15	EV	P	BP
H	R5	T @ P5, P6 + P37	T	5-7-15		5-7-15	P	2x2	A047	JM	BP	5-16-15	EV	P	BP
J	R35	T @ P37, P38 + P39	T	5-7-15		5-7-15	P	35x35	A047	JM	BP	5-16-15	EV	P	BP
K	R55	T @ P38, P39 + P40	T	5-7-15		5-7-15	P	2.5x2.5	A047	JM	BP	5-13-15	EV	P	BP
M	R33	T @ P40, P41 + P42	T	5-7-15		5-7-15	P	2x2	A047	JM	BP	5-18-15	EV	P	BP
N	R30	T @ P41, P42 + P43	T	5-7-15		5-7-15	P	3x3	A047	JM	BP	5-18-15	EV	P	BP
P	R58	16' W P40 I 35' S of P41	D	5-9-15		5-9-15	P	2x2	A045	JM	BP	5-16-15	EV	P	BP
Q	P-21	P21, 6' E of P20-21 CHANGE OF SLOPE	D	5-9-15		5-9-15	P	2x2	A047	JM	BP	5-18-15			
R	P-21	P21, 6' E of P20-21 N. Edge C.O.S.	D	5-9-15		5-9-15	P	2x2				5-18-15			
S	P-21	P21, 6' E of P20-21 N. Edge C.O.S.	D	5-9-15		5-9-15	P	2x2				5-18-15			
T	P-21	P21, 25' N. of P21-22 N. Edge C.O.S.	D	5-9-15		5-9-15	P	2x2	↓	↓	↓	5-18-15	↓	↓	↓
W	R39	P42, 35' W. of E.E. of P42-43	D	5-7-15		5-7-15	P	2x2	A047	JM	BP	5-13-15	EV	P	BP
X	A40	P42, 22' W. of E.E. of P42-43	D	5-7-15		5-7-15	P	2x2	A047	JM	BP	5-13-15	EV	P	BP
Y	R47	T @ P45, P46 + P47	T	5-7-15		5-7-15	P	3x3	A047	JM	BD	5-13-15	EV	P	BP

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
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DF - FUSION DESTRUCTIVE
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PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 5

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	69, 70	31' W OF EEOS	DF	5-9-15	DFS-25	5-7	P	2x5	047	JM	KL	5-18	EV	P	KL
B	74, 78	3' W OF EEOS	DF	5-9-15	DFS-26	5-4	P	2x5	047	JM	KL	5-18	EV	P	KL
C	44, 49, 50	T	T	5-7-15		5-7	P	2x3	047	JM	KL	5-18	EV	P	KL
D	43, 44, 49	T	T	5-7-15		5-7	P	2x2	"	"	KL	5-13	EV	P	KL
F	43, 45, 44	T	T	5-7-15		5-7	P	4x5	"	"	KL	5-13	EV	P	KL
G	44, 45, 47, 49	4 WAY	INT	5-7-15		5-7	P	4x5	"	"	KL	5-13	EV	P	KL
H	47, 49, 51	T	T	5-7-15		5-7	P	2x2	"	"	KL	5-13	EV	P	KL
J	45, 47	30' W OF EEOS	BO	5-7-15		5-7	P	2x2	"	"	KL	5-13	EV	P	KL
K	20, 21	1' N OF SEOS	BO	5-7-15		5-8	P	2x4	"	"	KL	5-13	EV	P	KL
M	52, 53	269' W OF EEOS	BO	5-7-15		5-9	P	2x3	"	"	KL	5-13	EV	P	KL
N	46, 47, 51	T	T	5-7-15		5-7	P	3x3	"	"	KL	5-13	EV	P	KL
P	1, 36	E @ TIE IN	T	5-7-15		5-8	P	2x2	"	"	KL	5-16	EV	P	KL
Q	36, 37, T.IN	T	T	5-7		5-8	P	2x2	"	"	KL	5-16	EV	P	KL
R	37, 39, T.IN	T	T	5-7		5-8	P	3x2	"	"	KL	5-16	EV	P	KL
S	38, 40, T.IN	T	T	5-7		5-8	P	3x3	"	"	KL	5-16	EV	P	KL
T	40, 41, T IN	T	T	5-7		5-8	P	2x2	"	"	KL	5-16	EV	P	KL
W	41, 43, T IN	T	T	5-7		5-8	P	2x2	"	"	KL	5-16	EV	P	KL
X	41, 43	7' E OF WEOS	D	5-7		5-8	P	2x2	"	"	KL	5-16	EV	P	KL
Y	45, 46 T IN	@ TIE IN	T	5-8		5-8	P	2x2	"	"	KL	5-16	EV	P	KL

DEFECTS TYPES

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T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY / SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

5-11-15 → 5-12-15

PAGE# 6

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	24/25/49	T @ P24, P25 + P49	T	5-11-15		5-11-15	P	25×5	A047	AJ	E.P.	5-18-15	EV	P	EP
B	25/26/49	T @ P25, P26 + P49	T	↓		↓	↓	2×3	↓		↓	↓	↓	↓	↓
C	26/49/51	T @ P26, P49 + P51	T					2×1							
D	26/27/51	T @ P26, P27 + P51	T					2×2							
F	27/28/51/77	INT @ P27, P28, P51 + P77	INT	↓		↓	↓	6×8	↓		↓	↓	↓	↓	↓
G	51/52/77	T @ P51, P52 + P77	T	5-11-15		5-11-15	P	2×3	A047	AJ	EP	5-18-15	EV	P	EP
H	81/82/83	T @ P81, P82 + P83	T	5-12-15		5-11-15	P	2×2	A037	SMT	EP	5-15-15	EV	P	ER
J	82/83	P82-83, 9' W of 6N	CUT	5-12-15		5-11-15	P	2×2	A037	SMT	EP	5-15-15	EV	P	ER
K	87/88/89	T @ P87, P88 + P89	T	5-12-15		5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
M	87/89	97' E of WEOS	CUT			5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
N	P87+P89	INT @ P85, P86, P87 + P88	INT	5-12-15		5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
P	84/85/86	T @ P84, P85 + P86	T	5-12-15		5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
Q	P-84	P84, 80' W. /6' S.	D	5-12-15	GRAN NO PUNCTURES	5-20-15	P	6"	A047	JM	EP	5-18-15	EV	P	EP
R	90/91/92	T @ P90, P91 + P92	T	5-12-15		5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
S	91/92/93	T @ P91, P92 + P93	T	5-12-15		5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
T	91/92	P91-92, 7.5' E, P90-92 7.5' N	D	5-12-15		5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
W	91/92	P91-92, 15' E, P90-92 7.5' N	D	5-12-15		5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
X	93/94/95	T @ P93, P94 + P95	T	5-12-15		5-14-15	P	2×2	A047	JM	EP	5-18-15	EV	P	EP
Y	52/76/77	T @ P52, P76 + P77	T	5-12-15		5-12-15	P	2×2	A037	ER	EP	5-18-15	EV	P	EP

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
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ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
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PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 7

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	46, 51, TIN	T	T	5-7-15		5-8	P	2x2	047	JM	KL	5-16	EV	P	KL
B	51, 52 TIN	T	T	5-7-15		5-8	P	2x2	047	JM	KL	5-16	EV	P	KL
C	52, 53 TIN	T	T	5-7-15		5-8	P	2x3	047	JM	KL	5-16	EV	P	KL
D	53, 54 TIN	T	T	5-7-15		5-8	P	3x3	"	"	KL	5-16	EV	P	KL
F	54, 55 TIN	T	T	5-7-15		5-8	P	3x3	"	"	KL	5-16	EV	P	KL
G	55, 56, TIN	T	T	5-7-15		5-11	P	2x3	"	"	KL	5-16	EV	P	KL
H	56, 57. TIN	T	T	5-7-15		5-11	P	2x3	"	"	KL	5-18	EV	P	KL
J	57, 58, TIN	T	T	5-8-15		5-11	P	2x3	"	"	KL	5-18	EV	P	KL
K	58, 59. TIN	T	T	5-8-15		5-11	P	2x4	"	"	KL	5-18	EV	P	KL
M	P-57	7'W & 10's OF TIN	D	5-8-15		5-11	P	2x2	"	"	KL	5-18	EV	P	KL
N	P 57	31'E, 2'S IN NWC	D	5-8-15		5-9	P	2x2	"	"	KL	5-17	EV	P	KL
P	P-57	25'E, 5'S, NWC	D	5-8-15		5-9	P	2x3	"	"	KL	5-18	EV	P	KL
Q	P-59	2'E, 7's, NWC	D	5-9-15		5-11	P	2x2	"	"	KL	5-18	EV	P	KL
R	59, 60, TIN	T	T	5-9-15		5-11	P	2x4	"	"	KL	5-18	EV	P	KL
S	60, 61 TIN	T	T	5-9-15		5-11	P	2x2	"	"	KL	5-18	EV	P	KL
T	P-61	3'E, 7'S OF NWC	D	5-9-15		5-11	P	2x2	"	"	KL	5-18	EV	P	KL
W	P-61	7'S, 11' E OF NWC	D	5-9-15		5-11	P	2x2	"	"	KL	5-18	EV	P	KL
X	61, 62, TIN	T	T	5-9-15		5-11	P	2x4	"	"	KL	5-18	EV	P	KL
Y	P-62	2' E, 75' WEST	D	5-9-15		5-11	P	2x3	"	"	KL	5-18	EV	P	KL

DEFECTS TYPES

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OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
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REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 8

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	64, 80	197' W of EEOS	DF	5-11-15	DFS-27	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
B	80, 82	129' W of EEOS	DF	5-11-15	DFS-28	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
C	84, 86	125' W of EEOS	DF	5-11-15	DFS-29	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
D	82, 84	44' W of EEOS	DF	5-11-15	DFS-30	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
F	87, 89	123' W of EEOS	DF	5-11-15	DFS-31	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
G	86, 87	46' W of EEOS	DF	5-11-15	DFS-32	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
H	89, TIE IN	5' From SEOS	DX	5-12-15	DXS-2	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
J	91, 93	107' W of EEOS	DF	5-12-15	DFS-33	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
K	93, 94	43' W of EEOS	DF	5-12-15	DFS-34	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
M	95, 96	36' W of EEOS	DF	5-13-15	DFS-35	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
N	108, 109	28' N of SEOS	DF	5-13-15	DFS-36	5-15	P	2x5	047	JM	KL	5-18	EV	P	KL
P	102, 103	13' N of SEOS	DF	5-13-15	DFS-37	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
Q	67, 114	12' N of SEOS	DF	5-14-15	DFS-38	5-14	P	2x5	047	JM	KL	5-15	EV	P	KL
R	114, 115	14' N of SEOS	DF	5-14-15	DFS-39	5-14	P	2x5	047	JM	KL	5-18	EV	P	KL
S	60, 10-C	TAKEN From 10-C	DX	5-14-15	DXS-3	5-14	P	2x5	047	JM	KL	5-15	EV	P	KL
T	35, 116	22' N of SEOS	DF	5-14-15	DFS-40	5-18	P	2x5	047	JM	KL	5-18	EV	P	KL
W	98, TIE IN	4' S of NEOS	DX	5-15-15	DXS-4	5-15	P	2x5	047	JM	KL	5-18	EV	P	KL
X	62, TIE IN	8'S of NEOS + 1' EAST	D	5-11-15	—	5-14	P	2x3	047	JM	KL	5-18	EV	P	KL
Y	62,	7'S, 8'E of TIE IN	D	5-11-15	—	5-14	P	2x5	047	JM	KL	5-15	EV	P	KL

DEFECTS TYPES
BO - BURNOUT
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OTHER _____

REPAIR TYPES
P - PATCH
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REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
X SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

5-12-15

PAGE# 9

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	REPAIR: TYPE	REPAIR: APPROX SIZE	REPAIR: MACH ID #	REPAIR: WELD TECH	REPAIR: QA MON.	VACUUM TEST: DATE	VACUUM TEST: TECH ID	VACUUM TEST: P/F	VACUUM TEST: QA MON.
A	52/53/76	T@ PS2, PS3 + P76	T	5-12-15		5-12-15	P	2×2	A037		EP	5-18-15	EV	P	EP
B	53/76/78	T@ PS3, P76 + P78	T	5-12-15				2×2							
C	53/54/74/78	PS3, PS4, P74 + P78	INT	5-12-15				2×2							
D	74/76/78	T@ P74, P76 + P78	T	5-12-15				2×2							
F	74/75/76	T@ P74, P75 + P76	T	5-12-15				2×2							
G	75/76/77	T@ P75, P76 + P77	T	5-12-15				2×2				5-18-15	EV	P	EP
H	74/75/77	T@ P74, P75 + P77	T	5-12-15				2×4				5-18	EV	P	EP
J	35/74/77	T@ P35, P74 + P77	T	5-12-15		5-12-15	P	5.5×2	A037	BR		5-18-15	EV	P	EP
K	34/35/77	T@ P34, P35 + P77	T	5-12-15				2×2				5-15-15	EV	P	~
M	33/34/77	T@ P33, P34 + P77	T	5-12-15				2×2				5-15-15	EV	P	~
N	32/33/77	T@ P32, P33 + P77	T	5-12-15				2.5×2.5				5-14	EV	P	~
P	31/32/77	T@ P31, P32 + P77	T	5-12-15				2.5×2.5				5-14	EV	P	~
Q	30/31/77	T@ P30, P31 + P77	T	5-12-15				2×2				5-14	EV	P	~
R	29/30/77	T@ P29, P30 + P77	T	5-12-15				2×2				5-14	EV	P	~
S	28/29/77	T@ P28, P29 + P77	T	5-12-15				3×9				5-14	EV	P	~
T	54/55/73/74	PS4, PS5, P73 + P74	INT	5-12-15				2.5×2.5				5-15-15	EV	P	EP
W	55/56/71/73	PS5, PS6, P71 + P73	INT	5-12-15				2×2							
X	56/57/70/71	PS6, PS7, P70 + P71	INT	5-12-15				2×2							
Y	57/58/69/70	PS7, PS8, P69 + P70	INT	5-12-15		5-12-15		2×5.5				5-15-15	EV	P	EP

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

5-12-15

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	68/69/79	T@P68,P69+P79	T	5-12-15		5-14-15	P	3x3	A037	SMT	BP	5-15-15	BV	P	BP
B	58/59/69/79	PS8,PS9,P69+P79	INT			5-14-15	P	2x2	A037	SMT	BP	5-15-15			
C	59/60/67/68/79	PS9,P60,P67,P68+P79	INT			5-14-15	P	3x7	A037	SMT	BP	5-15-15			
D	60/61/66/67	P60,P61,P66+P67	INT			5-14-15	P	2x16	A037	SMT	BP	5-15-15			
F	61/62/65/66	P61,P62,P65+P66	INT			5-14-15	P	3x3	A037	SMT	BP	5-15-15			
G	62/63/65/114	P62,P63,P65+P114	INT			5-14-15	P	2x3	A037	SMT	BP	5-15-15	BV	P	BP
H	62/63/Tie in	Tie in, P62+P63	T			5-11-15	P	2x2	A047	JM		5-18-15	BV	P	BP
J	62/Tie in	Tie in, P62	T			5-11-15	P	2x2	A047	JM					
K	63/Tie in	Tie in P63	T			5-12-15	P	2x2	A047	CH					
M	63/64/Tie in	Tie in, P63+P64	T			5-12-15	P	3x3	A047	CH					
N	64/Tie in	Tie in P64	T			5-12-15	P	2x2	A047	CH					
P	64/80/Tie in	Tie in P64+P80	T			5-12-15	P	2x2	A047	CH					
Q	P-80 @ Tie in	Tie in P80	T			5-12-15	P	2x2	A047	CH					
R	80/82/Tie in	Tie in P80+P82	T			5-12-15	P	2x2	A047	CH					
S	82/Tie in	Tie in P82	T			5-12-15	P	2x2	A047	CH					
T	82/84/Tie in	Tie in P82+P84	T			5-12-15	P	2x4	A047	CH					
W	84/Tie in	Tie in P84	T			5-12-15	P	2x2	A047	CH					
X	84/85/Tie in	Tie in P84+P85	T			5-12-15	P	2x3	A047	CH					
Y	85/Tie in	Tie in P85	T			5-18-15	P	2x2	A047	CH		5-18-15	BV	P	BP

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WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

5-13-15

PAGE# 11

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	VACUUM TEST: DATE	TECH ID	P/F	QA MON.
A	85/88/Tie	Tie in P85 + P88	T	5-13-15		5-13-15	P	2x2	A047	CH	BP	5-18-15	BV	P	BP
B	88/Tie in	Tie in P88	T	↓		↓	↓	2x2	↓	↓	↓	↓	↓	↓	↓
C	88/89/Tie in	Tie in P88 + P89	T					2x2							
D	89/Tie in	Tie in P89	T					2x2							
F	89/90/Tie	Tie in P89+90	T					2x2							
G	90/Tie in	Tie in P90	T					2x3							
H	94/95/96	TIE P94, P95 + P96	T			5-15-15	P	2x2	A047	JM	BP	5-18-15	BV	P	BP
J	96/97/101	TIE P96, P97 + P101	T			5-14-15	P	2x2	A047	JM	BP	5-18-15	BV	P	BP
K	97/98/100	Tie P97, P98 + P100	T			5-15-15	P	2x2	A047	JM	BP	5-18-15	BV	P	BP
M	102/Tie in	Tie in P102	T	5-14-15		5-14-15	P	2x2	A047	JM	BP	↓	↓	↓	↓
N	99/102/Tie in	Tie in P99 + P102	T	↓		5-15-15	P	2x2	A047	JM	BP				
P	99/Tie in	Tie in P99	T			5-14-15	P	2x2	A047	JM	BP				
Q	98/99/Tie	Tie in P98 + P99	T			5-15-15	P	2x3	A047	JM	BP				
R	98/Tie in	Tie in P98	T			5-14-15	P	2x2	A047	JM	BP				
S	97/98/Tie in	Tie in P97 + P98	T			5-15-15	P	2x4	A047	JM	BP				
T	97/Tie in	Tie in P97	T			5-14-15	P	2x2	A047	JM	BP				
W	96/97/Tie	Tie in P96 + P97	T			5-15-15	P	2x3	A047	JM	BP				
X	96/Tie in	Tie in P96	T			5-14-15	P	2x2	A047	JM	BP				
Y	94/96/Tie	Tie in P94 + P96	T			5-15-15	P	25x25	A047	JM	BP	5-18-15	BV	P	BP

DEFECTS TYPES

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T - THREE PANEL INTERSECTION
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WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	VACUUM TEST: DATE	TECH ID	P/F	QA MON.
A	P89 SECNR	78'W. of P114, 8'N of P87	D	5-14-15	TRIM UNDER PIPE	5-14-15	P	2x2	A047	JH	BP	5-18-15	BV	P	BP
B	94 / TIC in	TIE W P94	T	5-14-15		5-14-15	P	2x2	A047	JM	BP	"	"	"	"
C	93/94/TIC	TIE W P93-P94	T	5-14-15		5-14-15	P	3x9				"	"	"	"
D	93 / TIC in	TIE W P93	T	5-14-15		5-14-15	P	2x2				"	"	"	"
F	91/93/TIC	TIE W P91-P93	T	5-14-15		5-14-15	P	3x14				"	"	"	"
G	91 / TIC in	TIE W P91	T	5-14-15		5-14-15	P	2x2	↓	↓	↓	"	"	"	"
H	90/91/TIC	TIE IN P90-P91	T	5-14-15		5-14-15	P	2x4	A047	JH	BP	5-18-15	BV	P	BP
J	63/64/114	TIE IN P63, P64-P114	T	5-14-15		5-14-15	P	3x6	A037	SMT	BP	5-15-15	BV	P	BP
K	P63	5'W of NE CNR.	D	5-14-15		5-14-15	P	2.5x2.5	A037	SMT	BP	5-15-15	BV	P	BP
M	64/80/114	TIE P64, P80-P114	T	5-14-15		5-14-15	P	2x4	A037	SMT	BP	5-15-15	BV	P	BP
N	80/81/114	TIE P80, P81-P114	T	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
P	80/81/82	TIE P80, P81-P82	T	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
Q	81/83/114	TIE P81, P83-P114	T	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
R	82/83/84	TIE P82, P83-P84	T	5-14-15		5-14-15	P	2.5x2.5	A037	SMT	BP	5-15-15	BV	P	BP
S	83/84/86	TIE P83, P84-P86	T	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
T	83/86/114	TIE P83, P86-P114	T	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
W	86/87/114	TIE P86, P87-P114	T	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
X	87/89/114	TIE P87, P89-P114	T	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
Y	96/112/113	TIE P96, P112-P113	T	5-14-15		5-14-15	P	2x2	A047	JH	BP	5-18-15	BV	P	BP

DEFECTS TYPES

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VL - VACCUM LEAK
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WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	VACUUM TEST: DATE	TECH ID	P/F	QA MON.
A	35 74, 114	T	T	5-14-15		5-14	P	2x2	057	SMT	KL	5-15	EV	P	KL
B	72,74, 114	T	T	5-14		5-14	P	2x2	057	SMT	KL	5-15	EV	P	KL
C	71,72, 114	T	T	5-14		5-14	P	2x2	057	SMT	KL	5-15	EV	P	KL
D	70, 71, 114	T	T	5-14		5-14	P	2x2	057	SMT	KL	5-15	EV	P	KL
F	69, 70, 114	T	T	5-14		5-14	P	2x2	057	SMT	KL	5-15	"	P	KL
G	68, 69 114	T	T	5-14		5-14	P	2x2	057	SMT	KL	5-15	"	P	KL
H	67 68, 114	T	T	5-14		5-14	P	2x2	057	SMT	KL	5-15	"	P	KL
J	66, 67 114	T	T	5-14		5-14	P	2x2	057	SMT	KL	5-15	"	P	KL
K	65, 66 114	T	T	5-14		5-14	P	2x2	057	SMT	KL	5-15	EV	P	KL
M	63 65 114	T	T	5-14-15		5-15	P	2x2	047	JM		5-18	EV		KL
N	103, 104	CREST OF SLOPE	PT	5-14-15		5-15	P	2x2	047	JM		5-18	EV		KL
P	104, 105	CREST OF SLOPE	PT	5-14-15		5-15	P	2x2	047	JM	"	5-18	EV		KL
Q	72, 73, 74	T	T	5-14-15		5-14	P	2x2	057	SMT	KL	5-15	EV		KL
R	72, 73, 71	T	T	5-14-15		5-14	P	2x2	057	SMT	KL	5-15	EV		KL
S	128, 129	20' N OF SEDS	DF	5-15-15	DFS-41	5-19	P	2x5	047	JM		5-27	JJ		KL
T	115, 141	26' N OF SEDS	IO	5-16-15	—	5-18	P	2x2	047	JM		5-27	JJ		KL
W	121, 131	6' E OF WEDS	DF	5-16-15	DFS-42	5-19	P	2x5	047	JM		5-27	JJ		KL
X	133, 135	32' E OF WEDS	DF	5-16-15	DFS-43	5-19	P	2x5	047	JM		5-27	VT	P	KL
Y	136, 139	61' E OF WEDS	DF	5-16-15	DFS-44	5-18	P	2x5	047	JM	"	5-27	VT	P	KL

DEFECTS TYPES

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REPAIR TYPES

P - PATCH
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REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 14

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	115,141	57 E OF W605	DF	5-16-15	DFS-45	5-19	P	2x4	047	JM	KL	5-27	JJ	P	KL
B	150,145,146		T	5-19-15		5-20	P	2x3	047	"	"	5-27	JJ	P	KL
C	145, 146	57'S OF N605	DF	5-19-15	DFS-46	5-19	P	2x4	047	JM	KL	5-26	JJ	P	KL
D	147, 149	10' N OF S605	DF	5-19-15	DFS-47	5-20	P	3x4	047	JM	KL	5-26	JJ	P	"
F	146, 147	90'S@ SUMP #6 P-87	EXT	5-19-15	FUSED/pressure tested	5-20	C	2x100	1059	MS	KL	SEE PRESS. TEST LOG			
G	115,141, 151		T	5-20 16		5-20	P	2x2	047	JM	KL	5-27	JJ	P	↓
H	140,141, 151		T	5-20 16		5-20	P	2x2	047	"	"	5-27	JJ	P	KL
J	140,144, 151		T	5-20 16		5-20	P	3x3	047	"	"	5-27	JJ	P	"
K	115,144, 151		T	5 20 16		5-20	P	2x2	047	"	"	5-27	JJ	P	"
M	114,115, 144		T	5 20 16		5-20	P	3x4	"	"	"	5-27	JJ	P	"
N	144,145, 114		T	5 20 16		5-20	P	2x2	"	"	"	5-27	JJ	P	↓
P	139,140,144		T	5 20 16		5-20	P	2x2	"	JM	"	5-27	JJ	P	KL
Q	139,143,144		T	5 20 16		5-20	P	2x2	"	JM	"	5-27	JJ	P	"
R	144,145	5'N OF S605 1'E	D	5 20 16		5-20	P	1x1	047	JM	"	5-26	JJ	P	"
S	89,114,145		T	5 20 16		5-20	P	3x3	"	"	"	5-27	JJ	P	"
T	145,146,89		T	5 20 16		5-20	P	3x3	"	"	"	5-26	JJ	P	"
W	147,150,89		T	5 2016		5-20	P	3x3	"	"	"	5-26	JJ	P	"
X	146,150,147		T	5 2016		5-20	P	2x4	"	"	"	5-26	JJ	P	↓
Y	89,90,149,147		INT	5-2016		5-20	P	4x7		"	↓	526	JJ	P	KL

DEFECTS TYPES

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REPAIR TYPES

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REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	REPAIR: TYPE	REPAIR: APPROX SIZE	REPAIR: MACH ID #	REPAIR: WELD TECH	REPAIR: QA MON.	VACUUM TEST: DATE	VACUUM TEST: TECH ID	VACUUM TEST: P/F	VACUUM TEST: QA MON.
A	P112	6' W of S.E. CNR	D	5-14-15		5-14-15	P	2x4	A047	JM	E.P.	5-18-15	EV	P	EP
B	P112	5'N, 6' W of S.E. CNR	D	5-14-15				2x2							
C	P112	7'E, 4'N of S.W. CNR	D	5-14-15				2x2							
D	P112	3'E, 3'N of S.W. CNR	D	5-14-15				2x2							
F	101/111/112	T@ P101, P111 + P112	T	5-14-15				2x2							
G	97/101/110/111	P97, P101, P110 + P111	INT	5-14-15				2x7							
H	97/109/110	T@ P97, P109 + P110	T	5-15-15		5-15-15	P	2x2	A047	JM	EP				
J	97/108/109	T@ P97, P108 + P109	T	5-15-15				2x2							
K	97/107/108	T@ P97, P107 + P108	T	5-15-15				2x2							
M	97/100/107	T@ P97, P100 + P107	T	5-15-15				2x5							
N	P96	12' E of N.W. CNR	D	5-15-15				2x2							
P	100/106/107	T@ P100, P106 + P107	T	5-15-15				2.5x2.5							
Q	100/105/106	T@ P100, P105 + P106	T	5-15-15				2x2							
R	100/104/105	T@ P100, P104 + P105	T	5-15-15				2x2							
S	98/100/104	T@ P98, P100 + P104	T	5-15-15				2x2							
T	98/103/104	T@ P98, P103 + P104	T	5-15-15				2x2							
W	98/99/103	T@ P98, P99 + P103	T	5-15-15				2x2							
X	99/102/103	T@ P99, P102 + P103	T	5-15-15				2x2				5-18-15	EV	P	EP
Y	43/45/TIE-IN	T@ P45 + P45	T	5-8-15		5-8-15	P	2x2	A047	JM	P	5-16-15	EV	P	EP

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
X SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 16

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	P45	2'E, 6'N of SW CNR	D	5-8-15		5-18-15	P	2x2	A047	JM	BP	5-16	BV	P	BP
B	117/118/131	T@P117, P118+P131	T	5-16-15		5-19-15	"	2x2	"	"	"	5-27	VT	P	KL
C	118/119/131	T@P118, P119+P131	T	5-16-15		"	"	2x2	"	"	"	5-27	JJ	P	KL
D	119/120/131	T@P119, 120+P131	T	5-16-15		"	"	2x2	"	"	"	5-27	JJ	P	KL
F	129/121/131	T@P120, 121+P131	T	5-16-15		"	"	2x2	"	"	"	5-27	JJ	P	KL
G	121/122/131	T@P121, P122+P131	T	5-16-15		"	"	2x2	"	"	"	5-27	VT	P	KL
H	122/124/131	T@P122, P124+P131	T	5-16-15		5-19-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
J	122/123/124	T@P122, P123+P124	T	5-16-15		5-19-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
K	124/125/131	T@P124, P125+P131	T	5-16-15		5-19-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
M	125/126/131	T@P125, P126+P131	T	5-16-15		5-19-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
N	126/127/128	T@P126, P127+P128	T	5-16-15		5-19-15	P	2x4	A047	JM	BP	5-27	JJ	P	KL
P	126/128/131	T@P126, P128+P131	T	5-16-15		5-19-15	P	2x12	A047	JM	BP	5-27	JJ	P	KL
Q	126/131/132	T@P126, P131+P132	T	5-16-15		5-19-15	P	2.5x2.5	A047	JM	BP	5-27	JJ	P	KL
R	128/129/132	T@P128, P129+P132	T	5-16-15		5-19-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
S	129/132/135	T@P129, 132+P135	T	5-16-15	S covers T	5-19-15	P	2x7	A047	JM	BP	5-27	JJ	P	KL
T	129/130/135	T@P129, P130+P135	T	5-16-15	" " "	5-19-15	—	—	—	—	—	5-27	JJ	P	KL
W	130/135/142	T@P130, P135+P142	T	5-16-15	W covers X	5-19-15	P	2x6	A047	JM	BP	5-27	JJ	P	KL
X	135/137/142	T@P135, P137+P142	T	5-16-15	" " "	5-19-15	—	—	—	—	—	5-27	JJ	P	KL
Y	137/142/143	T@P137, P142+P143	T	5-16-15		5-19-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP

CNR- CORNER

PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 17

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	VACUUM TEST: DATE	TECH ID	P/F	QA MON.
A	137/139/143	TOP 137, P139 + P143	T	5-16-15		5-19-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
B	137/138/139	TO P137, P138 + P139	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
C	135/137/138	TO P135 P137 + P138	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
D	132/133/135	TO P132, P133 + P135	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	RR	P	KL
F	131/132/133	TO P131, P132 + P133	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	RR	P	KL
G	133/134/136	TO P133, P134 + P136	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	VT	P	KL
H	133/135/136	TO P133, P135 + P136	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	VT	P	KL
J	135/136/138	TO P135 P136 + P138	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	RR	P	KL
K	134/136/138	TO P134, P136 + P138	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	VT	P	KL
M	139/140/141	TO P139, P140 + P141	T	5-16-15		5-18-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
N	P142 + P143	4' N. of TO P137, P142 + P143	D	5-18-15		5-19-15	P	2x2	A047	JM	BP	5-27	JJ	P	KL
P	P64	79' W. of EOS 7'S. of P64/P80	D	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
Q	P64	87' W. of EOS, 7'S. of P64/P80	D	5-14-15		5-14-15	P	2x2	A037	SMT	BP	5-15-15	BV	P	BP
R	P94 P96	12' N. of TP94, P95 + P96	D	5-15-15		5-15-15	P	2x2	A047	JM	BP	5-18-15	BV	P	BP
S	←	→		→	NOT USED	←									→
T	←	→		→	NOT USED	←									→
W	←	→		→	NOT USED	←									→
X	←	→		→	NOT USED	←									→
Y	←	→		→	NOT USED	←									→

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 18

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	REPAIR: TYPE	REPAIR: APPROX SIZE	REPAIR: MACH ID #	REPAIR: WELD TECH	REPAIR: QA MON.	VACUUM TEST: DATE	VACUUM TEST: TECH ID	VACUUM TEST: P/F	VACUUM TEST: QA MON.
A	P-19 / TIC in	P-19 @ TIC in	D	5-21-15		5-21-15	P	2x2	A037	LA		5-21-15	EV	P	EP
B	19 / TIC in	P19 TIE W, 1'N of PS NW cor	T					2x2							
C	18 / 19 / TIC in	TIE P18+P19	T					3x7							
D	18/19/20	TIE P18, P19+P20	T					3x3	A047	JM					
F	17/18/TIC in	TIE P17 +P18	T					2x5	A047	JM					
G	17/18/20/21	P17, P18, P20 +P21	INT					3x7	A047	JM					
H	16/17/21/22	P16 P17 P21 +P22	INT					2x4	A047	JM		5-21-15	EV	P	EP
J	16/22/23	TIE P16, P22, P23	T					2x2	A047	JM		5-22-15	JJ	P	EP
K	P16	1'N of OF P8	D					2x2	A047	JM					
M	16/23/24	TIE P16, P23+P24	T					3x3	A047	JM					
N	13/14/16	TIE P13, P14+P16	T					2x2	A047	JM					
P	16/24/25	TIE P16, P24+P25	T					2x2	A047	JM					
Q	14/15/16/25	P14, P15, P16, P25+P26	INT					2x14	A047	JM					
R	15/26/27	TIE P15, P26+P27	T					2x2	A047	JM					
S	15/27/28	TIE P15, P27+P28	T					2x2	A047	JM					
T	12/15/28/29	P12, P15, P28+P29	INT			5-21-15	P	2x7	A037	LA		5-22-15	JJ	P	EP
W	12/14/15	TIE P12, P14+P15	T			5-21-15	P	2x2	A047	JM					
X	P15	3' SE of NW CNR	D			5-21-15	P	2x2	A047	JM					
Y	12/13/14	TIE P12, P13+P14	T			5-21-15	P	2x2	A047	JM					

DEFECTS TYPES

- BO - BURNOUT
- CO - CHANGE OF OVERLAP
- CUT - CUT
- D - DAMAGE
- CR - CREASE
- DF - FUSION DESTRUCTIVE
- DX - EXTRUSION DESTRUCTIVE
- ED - EQUIP. DAMAGE
- EXT - PANEL EXTENTION
- FM - FISHMOUTH
- FS - FAILED SEAM
- INT - INTERSECTION
- IO - INSUFFICIENT OVERLAP
- PT - PRESSURE TEST CUT
- T - THREE PANEL INTERSECTION
- VL - VACCUM LEAK
- WR - WRINKLE
- WS - WELDER RESTART
- OTHER _____
- OTHER _____

REPAIR TYPES

- P - PATCH
- C - CAP
- RS - RECONSTRUCTED SEAM
- G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

See Primary for # continuation.

PAGE# 19

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	146, 147	79'S OF NEOS	FM	5-19-		5-19	P	3x5	047	JM	KL	5-26	JJ	P	KL
B	35, 114, 116	T	T	5-18		5-18	P	2x2	047	JM	KL	5-26	JJ	P	KL
C	145	94'S, 4' EAST	D	5-19-15		5-21	P	2x2	047	JM	KL	5-26	"	P	KL
D	90, 92, 149	T	T	5-20-15		5-20	"	2x2	047	JM	KL	5-26	"	P	KL
F	92, 93, 149	T	T	5-20-15		5-20	"	2x2	047	JM	KL	5-26	"	P	KL
G	93, 95, 149	T	T	5-20-15		5-20	"	2x2	047	JM	KL	5-26	JJ	P	KL
H	95, 96, 149	T	T	5-20-15		5-20	"	2x2	047	JM	KL	5-26	JJ	P	KL
J	96, 148, 149	T	T	5-20-15		5-20	"	2x2	047	JM	KL	5-26	JJ	P	KL
K	96, 113, 148	T	T	5-20-15		5-20	"	2x2	"	"	"	5-26	JJ	P	KL
M	147	SUMP	FM	5-20-15		5-20	"	3x15	"	"	"	5-26	JJ	P	KL
N	147	SUMP	FM	5-20-15		5-20	"	3x10	"	"	"	5-26	JJ	P	KL
P	146, 147	SOUTH END OF SUMP	FM	5-20-15		5-20	"	4x22	"	"	"	5-26	JJ	P	KL
Q	147	SUMP	FM	5-20-15		5-20	"	2x2	"	"	"	5-26	JJ	P	KL
R	147, 148, 149	T	T	5-20-15		5-20	"	2x2	"	"	"	5-26	JJ	P	KL
S	96, 148, 149	T	T	5-20		5-20	"	2x2	"	"	"	5-26	JJ	P	KL
T	96, 113, 148	T	T	5-20		5-20	"	5x6	"	"	"	5-27	JJ	P	KL
W	115, 141	57' W of CCO1	B.O	5-18-15		5-20	"	2x3	"	"	"	5-27	JJ	P	KL
X	89, 147, 14F	T	T	5-19-15		5-20	"	2x3	"	"	"	5-26	JJ	P	KL
Y	146, 147	35' N of SCO5	EXT	5-20-15	ON 14 F	5-20	"	2x2	"	"	"	5-26	JJ	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

continued from Primary.

PAGE# 39

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	REPAIR: TYPE	REPAIR: APPROX SIZE	REPAIR: MACH ID #	REPAIR: WELD TECH	REPAIR: QA MON.	VACUUM TEST: DATE	VACUUM TEST: TECH ID	VACUUM TEST: P/F	VACUUM TEST: QA MON.
A	115, 152	184' N OF SEOS	DF	7-6-15	DFS 48	7-7	P	3x5	008	RZ	KL	7-8	ER	P	KL
B	115	174'N 1'W	CUT	7-6-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
C	152, 154	4'N OF SEOS	DF	7-6-15	DFS-49	7-7	P	2x5	008	RZ	KL	7-8	ER	P	KL
D	154, 155	31'S OF NEOS	DF	7-6-15	DFS-50	7-	P	2x5	008	RZ	KL	7-8	ER	P	KL
F	155, 156	10'N OF SEOS	B.O.	7-6-15		7-8	P	3x8	008	RZ	KL	7-8	ER	P	KL
G	156, 157	79'N ... OF SEOS	DF	7-7-15	DFS-51	7-8	P	2x5	008	RZ	KL	7-8	ER	P	KL
H	158, 159	8'N OF SEOS	DF	7-7-15	DFS-52	7-7	P	2x5	008	RZ	KL	7-8	ER	P	KL
J	165, 166	6'E OF WEOS	DF	7-7-15	DFS-53	7-7	P	3x5	008	RZ	KL	7-8	ER	P	KL
K	172, 173	15'E OF WEOS	DF	7-7-15	DFS-54	7-8	P	2x5	008	RZ	KL	7-8	ER	P	KL
M	159, 174	20'S OF NEOS	DF	7-7-15	DSF 55	7-8	P	2x10	008	RZ	KL	7-8	ER	P	KL
N	133, 158	WEOS TO EEOS	IO	7-7-15	CAPPED SEAM	—	C	FUSED - SEE			SEAM		LO	G	KL
P	131, 178	WEOS TO EEOS	IO	7-7-15	CAPPED SEAM	—	C	FUSED - SEE			SEAM		LO	G	KL
Q	161162, 163	T	T	7-7-15		7-8	P	2x2	008	RZ	KL	7-8	ER	P	KL
R	159, 161, 163	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
S	159, 163, 164	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
T	159, 164, 165	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
W	159, 165, 166	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
X	159, 166, 167	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
Y	159, 167, 168	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
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DF - FUSION DESTRUCTIVE
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PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 40

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION: DESCRIPTION	DEFECT TYPE	DATE	REMARKS	REPAIR: DATE	REPAIR: TYPE	REPAIR: APPROX SIZE	REPAIR: MACH ID #	REPAIR: WELD TECH	REPAIR: QA MON.	VACUUM TEST: DATE	VACUUM TEST: TECH ID	VACUUM TEST: P/F	VACUUM TEST: QA MON.
A	159, 174 +175	T	T	7-8-15		7-8-15	P	2x2	A008	RZ	EP	7-8-15	RZ	P	EP
B	159, 160 + 175	T	T	7-8-15		7-8-15	P	2x2	A008	RZ	EP	7-8-15	ER	P	EP
C	160, 175 +176	T	T	7-8-15		7-8-15	P	2x2	A008	RZ	EP	7-8-15	ER	P	EP
D	160, 176 + 177	T	T	7-8-15		7-8-15	P	2x2	A008	RZ	EP	7-8-15	ER	P	EP
F	160, 177+178	T	T	7-8-15		7-8-15	P	3x3	A008	RZ	EP	7-8-15	ER	P	EP
G	158, 160+178	T	T	7-8-15		7-8-15	P	4x10	A008	RZ	EP	7-9-15	LL	P	EP
H	117	9'S. WELD	D	7-8-15		7-8-15	P	2x2	A008	RZ	EP	7-9-15	LL	P	EP
J	47, 177, 179+180	INT	INT	7-8-15		7-8-15	P	3x5	A008	RZ	EP	7-9-15	LL	P	EP
K															
M															
N															
P															
Q															
R															
S															
T															
W															
X															
Y															

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 4

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	152, 153+154	T	T	7-6-15		7-7-15	P	2x2	A088	RZ	EP	7-8	ER	P	EP
B	153, 154+155	T	T	7-6-15		7-7-15	P	2x2	A088	RZ	EP	7-8	ER	P	EP
C	155	25'S, 10'W	D	7-6-15		7-7-15	P	2x2	A088	RZ	KL	7-9	LL	P	EP
D	115, 152	128'S	PT	7-7-15		7-7-15	P	3x3	A088	RZ	EP	7-8	ER	P	EP
F	115	93'S, 6"E.	G+W	7-7-15		7-7-15	P	6"	A088	RZ	EP	7-8	ER	P	EP
G	155, 156	164'S	PT	7-7-15		7-7-15	P	3x3	A088	RZ	EP	7-8	ER	P	EP
H	115, 141+152	T	T	7-7-15		7-8-15	P	6x12	A008	RZ	EP	7-9	LL	P	EP
J	139, 141, 152+154	INT	INT	7-7-15		7-8-15	P	2x3	A008	RZ	EP	7-9	LL	P	EP
K	138, 139, 154+155	INT	INT	7-7-15		7-8-15	P	2x5	A008	RZ	EP	7-9	LL	P	EP
M	134, 138, 155+156	INT	INT	7-7-15		7-8-15	P	2x19	A008	RZ	EP	7-9	LL	P	EP
N	133, 134, 156+158	INT	INT	7-7-15		7-8-15	P	2x5	A008	RZ	EP	7-9	LL	P	EP
P	156, 158	23'S.	PT	7-7-15		7-8-15	P	2x2	A008	RZ	EP	7-9	LL	P	EP
Q	156, 158	42'S.	D	7-7-15		7-8-15	P	2x2	A008	RZ	EP	7-8	ER	P	EP
R	156, 158	65'S	D	7-7-15		7-8-15	P	2x4	A008	RZ	EP	7-9	LL	P	EP
S	156, 158	73'S.	D	7-7-15		7-8-15	P	2x2	A008	RZ	EP	7-9	LL	P	EP
T	158, 160	T	T	7-7-15		7-8-15	P	2x4	A008	RZ	EP	7-9	LL	P	EP
W	156, 157+158	T	T	7-7-15		7-7-15	P	2x2	A088	RZ	EP	7-8	ER	P	EP
X	157, 158+159	T	T	7-7-15		7-7-15	P	2x2	A088	RZ	EP	7-8	ER	P	EP
Y	152, 153	S. END OF SEAM	PT	7-8-15		7-8-15	P	3x4	A008	RZ	EP	7-8	ER	P	EP

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY
SECONDARY X

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	159, 168, 169	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
B	159, 169, 170	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
C	159, 171, 172	T	T	7-7-15		7-7	P	2x2	008	RZ	KL	7-8	ER	P	KL
D	159, 172, 173	T	T	7-7-15		7-8	P	2x2	008	RZ	KL	7-8	ER	P	KL
F	161, 162	SEOS	PT	7-8-15		7-8	P	3x4	008	RZ	KL	7-8	ER	P	KL
G	153, 155	SEOS	PT	7-8-15		7-8	P	2x4	008	RZ	KL	7-8	ER	P	KL
H	163	WEOP @ ANC. TRCH.	EXT	7-8-15		7-8	P	4x2x2	008	RZ	KL	7-8	ER	P	KL
J	159, 172, 173		T	7-8-15		7-8	P	2x2	008	RZ	KL	7-8	ER	P	KL
K	39M, 174	FROM #A008 MACH.	DX	7-8-15	DXS-5	7-8	P	2x5	008	RZ	KL	7-8	ER	P	KL
M	177, 177, 180, 131, 178	INT	INT	7-8-15		7-8	P	6x11	008	RZ	KL	7-9	ER	P	KL
N	133	1'N, 7'E	D	7-8-15		7-8	P	2x2	008	RZ	KL	7-9	ER	P	KL
P	115	319'N, 5'W	D	7-8-15		7-8	P	2x2	008	RZ	KL	7-9	ER	P	KL
Q															
R															
S															
T															
W															
X															
Y															

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

Section 6
Geomembrane Non-Destructive Pressure Test Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
29/30	NE OS	SE OS	1	AL	916	921	30	29	P	Y	EP	
28/29			2		916	921	30	30				
27/28			3		917	922	30	29				
26/27			4		917	922	30	30				
25/26			5		925	930	30	30				
30/31			1		938	943	30	29				
31/32			2		944	949	30	30				
32/33			3		944	949	30	29				
33/34			4		946	951	30	30				
34/35			5		956	1001	30	30				
24/25			1		1033	1038	30	30				
23/24			2		1034	1039	30	30				
22/23			3		1035	1040	30	28				
21/22			4		1035	1040	30	28				
20/21			5		1038	1043	30	29				
19/20			1		1051	1056	30	30				
18/19			2		1052	1057	30	29				
17/18			3		1053	1058	30	30				
16/17			4		1054	1059	30	30				
15/16			1		1137	1142	30	30				

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15
PAGE# 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
14/15	NE OS	SE OS	2	A.L.	1038	1143	30	30	P	Y	B.P.	
13/14	↓	↓	3	↓	1139	1144	30	30	↓	↓	↓	
12/13			4		1140	1145	30	30				
11/12			5		1140	1145	30	30				
10/11			1		1156	1201	30	30				
9/10			2		1157	1202	30	29				
8/9			3		1159	1204	30	29				
7/8	↓	↓	4		1200	1205	30	30				
6/7	NEOS	SEOS	5		1200	1205	30	28				
4/5	NEOS	SEOS	1		157	202	30	30				
1/4	EEOS	WEOS	2		157	202	30	29				
1/36	EEOS	WEOS	3		157	202	30	29				
3/4	NEOS	SEOS	1		150	155	30	30				
1/3	EEOS	WEOS	2		150	155	30	30				
1/2	EEOS	WEOS	3		150	155	30	30				
2/3	EEOS	WEOS	4		120	125	30	29				
5/36	EEOS	WEOS	1		303	308	30	30				
36/37	EEOS	WEOS	2		303	308	30	30				
5/37	EEOS	WEOS	3		303	308	30	30				
4/37	EEOS	WEOS	1	↓	307	312	30	30	↓	↓	↓	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: _____
SECONDARY: X
OTHER: _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-6-15
PAGE# 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
7/37	WEOS	EEOS	2	AL	307	312	30	29	P	Y	E.P.	
37/38	WEOS	EEOS	1	↓	321	326	30	30	↓	↓	↓	
37/39	WEOS	EEOS	2		321	326	30	30				
R1/2	WEOS	EEOS	1		120	125	30	30				
R1/3	NEOS	SEOS	2		120	125	30	30				
38/39	NEOS	SEOS	3	↓	321	326	30	29	↓	↓	↓	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY E NEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-7-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
38-40	WEOS	EEOS	1	AL	804	809	30	29	P	Y	GP	
39-40	WEOS	EEOS	2	AL	804	809	30	30				
9-39	WEOS	EEOS	3	AL	805	810	30	30				
10-39	WEOS	EEOS	4	AL	805	810	30	30				
11-39	WEOS	EEOS	1	AL	939	944	30	30				
11-40	WEOS	EEOS	2	AL	939	944	30	30				
40-41	WEOS	EEOS	1	AL	940	945	30	30				
41-42	WEOS	EEOS	2	AL	940	945	30	30				
40-42	WEOS	EEOS	3	AL	940	945	30	30				
12-40	WEOS	EEOS	1	AL	957	1002	30	30				
13-40	WEOS	EEOS	2	AL	957	1002	30	30				
14-42	WEOS	EEOS	1	AL	1029	1034	30	30				
15-42	WEOS	EEOS	2	AL	1029	1034	30	28				
41-43	WEOS	EEOS	1	AL	1036	1041	30	30				
18-43	WEOS	EEOS	1	AL	1106	1111	30	28				
19-48	WEOS	EEOS	2	AL	1106	1111	30	29				
43-48	WEOS	EEOS	3	AL	1106	1111	30	30				
44-48	WEOS	EEOS	1	AL	1112	1117	30	30				
43-48	WEOS	EEOS	2	AL	1112	1117	30	30				
3-6	NEOS	SEOS	1	AL	758	803	30	29				

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY INEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: A
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-7-15
PAGE# 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
8-37	WEOS	EEOS	1	AL	800	805	30	30	P	Y	BR	
37-39	WEOS	EEOS	2	AL	800	805	30	30				
8-39	WEOS	EEOS	3	AL	800	805	30	29				
43-45	WEOS	EEOS	1	AL	119	124	30	30				
45-47	WEOS	R 47	1	AL	125	130	30	29		N		
45-47	R 47	EEOS	2	AL	125	130	30	29		Y		30'
47-49	NEOS	SEOS	3	AL	125	130	30	30				
44-49	WEOS	EEOS	4	AL	125	130	30	30				
45-46	WEOS	EEOS	1	AL	157	202	30	29				
49-51	WEOS	EEOS	1	AL	145	150	30	30				
47-51	WEOS	EEOS	2	AL	145	150	30	30				
46-47	NEOS	SEOS	1	AL	157	202	30	28				
46-51	WEOS	EEOS	2	AL	157	202	30	30				
20-48	WEOS	EEOS	1	AL	300	305	30	28				
20-44	WEOS	EEOS	2	AL	300	305	30	30				
21-44	WEOS	EEOS	3	AL	301	306	30	28				
22-44	WEOS	EEOS	4	AL	301	306	30	30				
22-50	WEOS	EEOS	5	AL	301	306	30	29				
45-49	WEOS	EEOS	1	AL	125	130	30	30				Covered by R43
42-43	WEOS	EEOS	2	AL	1036	1041	30	30				

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY INEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ____
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-7-15
PAGE# 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
45-46	WEOS	EEOS	1	AL	157	202	30	29	P	Y	EP	
24-49	WEOS	EEOS	2	AL	328	336	30	30	P	Y	E.P.	
23-49	WEOS	EEOS	3	AL	325	330	30	28	P	Y	EP.	
49-50	WEOS	SEOS	4	AL	324	329	30	30	P	Y	EP.	
23-50	WEOS	SEOS	5	AL	324	329	30	30	P	Y		
17-43	WEOS	SEOS	1	AL	1101	1106	30	30	P	Y		
43-45	WEOS	EEOS	2	AL	119	124	30	30	P	Y		
44-45	NEOS	SEOS	3	AL	119	124	30	30	P	Y		
43-44	WEOS	EEOS	4	AL	1112	1117	30	30	P	Y	↓	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY INEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
S1-S2	WEOS	EEOS	1	AL	920	925	30	28	P	Y	B.P.	
S3-S4	WEOS	EEOS	2	AL	919	924	30	28	↑	Y	↑	
S2-S3	WEOS	R56	1	AL	940	945	30	30		N		
S2-S3	R56	EEOS	2	AL	940	945	30	30		Y		
S4-S5	WEOS	EEOS	1	AL	914	919	30	28		Y		
S5-S6	WEOS	EEOS	2	AL	913	918	30	29	↓	Y	↓	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. HEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-9-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
56-57	WEOS	EEOS	1	AL	856	901	30	28	P	Y	BP	
57-58	WEOS	EEOS	2	↓	857	902	30	28	↓	↓	↓	
58-59	WEOS	EEOS	3		858	903	30	29				
59-60	WEOS	EEOS	4		859	904	30	30				
60-61	WEOS	EEOS	5		859	904	30	30				
61-62	WEOS	EEOS	1		911	916	30	30				
62-63	WEOS	EEOS	2		912	917	30	30				
63-64	WEOS	EEOS	3	↓	912	917	30	30	↓	↓	↓	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-1-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
65-66	WEOS	EEOS	1	RR	835	840	30	30	P	Y	BP	
61-66	WEOS	EEOS	5		840	845	30	30				
60-67	NEOS	SEOS	3		8450	859	30	30				
67-68	WEOS	EEOS	4		855	900	30	30				
59-79	NEOS	SEOS	2		909	914	30	30				
68-79	NEOS	SEOS	1		909	914	30	30				
58-69	NEOS	SEOS	2		920	925	30	30				
68-69	WEOS	EEOS	3		920	923	30	30				
69-70	WEOS	EEOS	4		937	942	30	30				
57-70	NEOS	SEOS	1		937	942	30	30				
70-71	NEOS	EEOS	2		958	1003	30	30				
56-71	NEOS	SEOS	3		938	1003	30	30				
71-73	WEOS	EEOS	4		1014	1019	30	30				
55-73	NEOS	SEOS	2		1014	1019	30	30				
73-74	WEOS	EEOS	1		1035	1040	30	30				
54-74	NEOS	SEOS	2		1035	1040	30	30				
74-78	WEOS	EEOS	3		1050	1100	30	30				
53-78	NEOS	SEOS	1		1100	1105	30	30	P			
76-78	WEOS	EEOS	2		1105	1110	30	30	P			
74-76	WEOS	EEOS	1		1115	1120	30	30	P			

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ____
SECONDARY: X
OTHER: ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-11-15
PAGE# 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
75-76	NEOS	SEOS	3	RR	1130	1135	30	30	P	Y	EP	
74-75	WEOS	2M	1		1135	1140	30	30		N		
74-75	2M	EEOS	2		1245	1250	30	30		Y		
74-77	WEOS	EEOS	1		1255	100	30	30				
35-74	WEOS	EEOS	2		1258	103	30	30				
35-77	WEOS	EEOS	1		100	105	30	29				
53-76	NEOS	SEOS	3		121	126	30	30				
52-76	NEOS	SEOS	2		122	127	30	30				
75-77	WEOS	EEOS	1		128	133	30	29				
76-77	WEOS	EEOS	2		1248	1253	30	30				
52-77	NEOS	SEOS	3		133	138	30	30				
51-77	NEOS	SEOS	1		134	139	30	30				
77-34	WEOS	EEOS	2		145	150	30	30				
33-77	WEOS	EEOS	1		147	153	30	30				
30-77	WEOS	EEOS	2		205	210	30	29				
29-77	WEOS	EEOS	3		205	210	30	28				
29-77	WEOS	EEOS	2		215	220	30	30				
27-51	WEOS	EEOS	1		215	220	30	28				
26-51	WEOS	EEOS	2		216	221	30	30				
26-49	WEOS	EEOS	3		221	226	30	30				

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-11-15
PAGE# 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
25-49	WEOS	EEOS	1	JM	221	226	30	30	P	Y	BP	
32-77	WEOS	EEOS	2	JM	157	202	30	30	P	Y	BP	
31-77	WEOS	EEOS	3	JM	157	202	30	30	P	Y	BP	
82-84	WEOS	EEOS	2	JM	835	840	30	30	P	Y	BP	
71-72	WEOS	EEOS	2	JM	1025	1030	30	30	P	Y	BP	
71-73	WEOS	EEOS	1	JM	1014	1019	30	30	P	Y	BP	
72-73	WEOS	EEOS	3	JM	1025	1030	30	30	P	Y	BP	
73-74	WEOS	EEOS	1	JM	1035	1040	30	30	P	Y	BP	
72-74	WEOS	EEOS	2	JM	1030	1035	30	29	P	Y	BP	
66-67	WEOS	EEOS	1	JM	845	850	30	30	P	Y	BP	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-11

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-13-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
95-96	WEOS	EEOS	3	RR	244	249	30	30	P	Y	EP	
94-96	WEOS	EEOS	4	RR	245	250	30	30	P	Y	~	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: _____
SECONDARY: X
OTHER: _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-12-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
64-80	WEOS	EEOS	2	RR	745	750	30	30	P	Y	B.P.	
80-81	WEOS	EEOS	1		755	800	30	30		Y		
80-82	WEOS	EEOS	2		817	822	30	30		Y		
81-83	WEOS	EEOS	1		803	808	30	30		Y		
82-83	WEOS	6J	2		817	822	30	29		N		
82-83	6J	EEOS	1		817	822	30	30		Y		
83-86	WEOS	EEOS	2		838	843	30	30		Y		
83-84	WEOS	SEOS	1		838	843	30	29		Y		
84-86	WEOS	EEOS	2		852	857	30	30		Y		
84-85	WEOS	EEOS	1		907	912	30	29		Y		
85-86	WEOS	SEOS	2		858	903	30	30		Y		
86-87	WEOS	EEOS	1		852	857	30	30		Y		
85-88	WEOS	EEOS	3		907	912	30	30		Y		
87-88	WEOS	SEOS	1		912	917	30	30		Y		
88-89	WEOS	EEOS	2		935	946	30	30		Y		
87-89	WEOS	6M	1		925	930	30	30		N		
87-89	6M	EEOS	2		945	950	30	30		Y		
89-90	WEOS	EEOS	3		255	300	30	30		Y		
90-91	WEOS	EEOS	1		310	315	30	30		Y		
90-92	WEOS	EEOS	2		310	315	30	30		Y		

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.12.15
PAGE# 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
91-92	NEOS	SEOS	2	RR	312	317	30	28	P	Y	EP	
91-93	WEOS	EEOS	1		320	325	30	30		Y		
92-93	WEOS	EEOS	2		320	325	30	30		Y		
93-94	WEOS	EEOS	1		324	329	30	30		Y		
93-95	WEOS	EEOS	2		324	329	30	30		Y		
94-95	NEOS	SEOS	4		323	328	30	30		Y		
94-96	WEOS	EEOS	2		230	235	30	29	P	Y	EP	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY INEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-14-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
35-114	NEOS	SEOS	2	RR	1255	100	30	29	P	Y	EP	
74-114	NEOS	SEOS	1		1255	100	30	30				
72-114	NEOS	SEOS	3		135	140	30	30				
71-114	NEOS	SEOS	2		135	140	30	30				
70-114	NEOS	SEOS	1		155	200	30	30				
69-114	NEOS	SEOS	3		155	200	30	30				
68-114	NEOS	SEOS	2		158	203	30	30				
67-114	NEOS	SEOS	4		158	203	30	30				
66-114	NEOS	SEOS	3		204	209	30	30				
65-114	NEOS	SEOS	2		204	209	30	30				
64-114	NEOS	SEOS	1		220	225	30	30				
63-114	NEOS	SEOS	3		220	225	30	30				
80-114	NEOS	SEOS	1		225	230	30	30				
81-114	NEOS	SEOS	2		225	230	30	28				
83-114	NEOS	SEOS	4		225	230	30	29				
86-114	NEOS	SEOS	3		225	230	30	30				
87-114	NEOS	SEOS	2		230	235	30	30				
89-114	NEOS	SEOS	3		230	235	30	30				
62-65	NEOS	SEOS	1		100	105	30	30				
113-96	WEOS	EEOS	2	↓	300	305	30	30	↓	↓	↓	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: _____
SECONDARY: X
OTHER: _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.14.15
PAGE# 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
96 · 112	WEOS	EEOS	1	RR	300	305	30	30	P	Y	BP	
112 · 113	WEOS	SEOS	3		300	305	30	30				
96 · 113	WEOS	EEOS	2		300	305	30	30				
111 · 112	WEOS	SEOS	3		315	320	30	29				
101 · 111	WEOS	EEOS	1		315	320	30	30				
110 · 111	WEOS	SEOS	2		317	322	30	29				
97 · 101	WEOS	SEOS	3		321	326	30	30				
97 · 110	WEOS	EEOS	1		321	326	30	30				
109 · 110	WEOS	SEOS	2		323	328	30	30				
97 · 109	WEOS	EEOS	3		325	330	30	30				
97 · 108	WEOS	EEOS	1		325	330	30	27				
108 · 109	WEOS	SEOS	2		325	330	30	30				
101 · 117	WEOS	EEOS	3		312	317	30	30				
96 · 101	WEOS	EEOS	1		312	317	30	30				
107 · 108	WEOS	SEOS	2		328	333	30	28				
97 · 107	WEOS	EEOS	3		328	333	30	30				
98 · 107	WEOS	EEOS	1		330	335	30	30				
97 · 100	WEOS	EEOS	2		330	335	30	30				
106 · 107	WEOS	SEOS	3		333	338	30	28				
100 · 106	WEOS	EEOS	2	↓	333	338	30	28	↓	↓	↓	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : J. NEJAD
DATE : 5.29.15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.14.15
PAGE# 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
105-106	NEOS	SEOS	3	RL	340	335	30	30	P	Y	BP	
100-105	WEOS	SEOS	1		343	348	30	29				
104-105	NEOS	SEOS	2		348	353	30	30				
100-104	WEOS	SEOS	3		343	348	30	30				
98-100	NEOS	SEOS	3		350	355	30	30				
97-98	WEOS	SEOS	1		350	355	30	30				
98-104	WEOS	SEOS	2		354	359	30	30				
98-103	WEOS	SEOS	4		354	359	30	30				
103-104	NEOS	SEOS	2		334	339	30	29				
98-99	WEOS	SEOS	5		355	400	30	30				
99-103	WEOS	SEOS	1		357	402	30	30				
102-103	NEOS	SEOS	2		400	405	30	30				
99-102	WEOS	SEOS	3		357	402	30	29				
96-97	WEOS	SEOS	4		320	325	30	30				

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-18-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
131-133	NEOS	SEOS	2	AL	194	199	30	28	P	Y	BP	
134-136	NEOS	SEOS	1	AL	125	130	30	30	P	Y	BP	
133-136	NEOS	SEOS	4	AL	125	130	30	30	P	Y	BP	
136-138	NEOS	SEOS	3	AL	126	131	30	28	P	Y	BP	
138-139	NEOS	SEOS	1	AL	130	135	30	29	P	Y	BP	
139-141	NEOS	SEOS	2	AL	135	140	30	30	P	Y	BP	
137-141	NEOS	SEOS	3	AL	136	141	30	28	P	Y	BP	
137-115	NEOS	SEOS	4	AL	136	141	30	30	P	Y	BP	
140-141	NEOS	SEOS	2	AL	234	239	30	29	P	Y	BP	
139-140	NEOS	SEOS	1	AL	234	239	30	28	P	Y	BP	
137-139	NEOS	SEOS	3	AL	232	237	30	30	P	Y	BP	
137-138	NEOS	SEOS	2	AL	232	237	30	29	P	Y	BP	
135-137	NEOS	SEOS	4	AL	232	237	30	29	P	Y	BP	
135 138	NEOS	SEOS	3	AL	230	235	30	30	P	Y	BP	
135-136	NEOS	SEOS	2	AL	230	235	30	30	P	Y	BP	
133-135	NEOS	SEOS	6	AL	231	236	30	30	P	Y	BP	
132-133	NEOS	SEOS	6	AL	231	236	30	29	P	Y	BP	
132-135	NEOS	SEOS	7	AL	231	236	30	30	P	Y	BP	
131-132	NEOS	SEOS	8	AL	231	236	30	30	P	Y	BP	
137-143	NEOS	SEOS	1	AL	437	442	30	30	P	Y	BP	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY E NEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-18-15
PAGE# 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
N2-143	NEOS	SEOS	2	AL	437	442	30	29	P	Y	ED	
B7-142	WEOS	EEOS	4	AL	437	442	30	30	P	Y	EP	
130-142	NEOS	SEOS	3	AL	438	443	30	30	P	Y	EP	
130-135	WEOS	EEOS	5	AL	439	444	30	30	P	Y	EP	
129-130	NEOS	SEOS	6	AL	439	444	30	28	P	Y	EP	
129-135	WEOS	EEOS	7	AL	439	444	30	30	P	Y	EP	
129-132	WEOS	EEOS	1	AL	440	445	30	29	P	Y	EP	
128-129	NEOS	SEOS	9	AL	440	445	30	30	P	Y	EP	
128-132	WEOS	SEOS	10	AL	440	445	30	30	P	Y	EP	
139,143	EEOS	WEOS	4	AL	443	4:48	30	29	P	Y	KL	
35,116	NEOS	SEOS	6	AL	451	4:56	30	30	P	Y	KL	
114,116	NEOS	SEOS	3	AL	4:58	5:03	30	30	P	Y	KL	
114,115	NEOS	SEOS	7	AL	458	5:03	30	30	P	Y	KL	
115,141	NEOS	SEOS	8	AL	458	5:03	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY E[illegible]JEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-19-15
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
121-131	NEOS	SEOS	1	AL	834	839	30	29	P	Y	~	
121-122	WEOS	EEOS	2	AL	834	839	30	30	P	Y	~	
122-131	NEOS	SEOS	3	AL	834	839	30	30	P	Y	~	
122-124	WEOS	EEOS	4	AL	839	844	30	29	P	Y	~	
124-131	NEOS	SEOS	2	AL	840	845	30	30	P	Y	~	
128-131	NEOS	SEOS	3	AL	840	845	30	28	P	Y	~	
124-125	NEOS	SEOS	1	AL	840	845	30	28	P	Y	~	
125-126	NEOS	SEOS	4	AL	844	849	30	30	P	Y	~	
126-131	NEOS	SEOS	5	AL	844	849	30	30	P	Y	~	
126-128	NEOS	SEOS	6	AL	854	859	30	30	P	Y	~	
126-127	NEOS	SEOS	1	AL	903	908	30	30	P	Y	~	
127-128	NEOS	SEOS	2	AL	903	908	30	30	P	Y	~	
122-123	WEOS	EEOS	3	AL	914	919	30	30	P	Y	~	
123-124	WEOS	EEOS	4	AL	914	919	30	30	P	Y	~	
117-131	NEOS	SEOS	1	AL	946	951	30	30	P	Y	~	
117-118	NEOS	EEOS	2	AL	946	951	30	30	P	Y	~	
118-131	NEOS	SEOS	3	AL	946	951	30	29	P	Y	~	
118-119	WEOS	SEOS	21	AL	947	952	30	28	P	Y	~	
119-131	NEOS	SEOS	5	AL	947	952	30	28	P	Y	~	
119-120	WEOS	SEOS	6	AL	947	952	30	30	P	Y	~	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: _____
SECONDARY: X
OTHER: _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.19.15
PAGE# 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
120-131	NEOS	SEOS	7	AL	947	952	30	29	P	Y	BP	
120-121	NEOS	SEOS	1	AL	948	953	30	30	P	Y	BP	
140-144	NEOS	SEOS	1	RR	145	150	30	29	P	N	BP	
139-144	NEOS	SEOS	2	RR	155	200	30	30	P	Y	BP	
143-144	NEOS	SEOS	3	RR	155	200	30	30	P	Y	BP	
144-145	NEOS	SEOS	1	RR	240	240	30	30	P	Y	BP	
145-146	14B	SEOS	2	RR	240	245	30	30	P	N	BP	
146-147	NEOS	SEOS	3	RR	331	336	30	30	P	Y	BP	
143-146	NEOS	14B	1	AL	349	354	30	30	P	Y	BP	
146-147	NEOS	SEOS	2	RR	255	300	30	28	P	Y	BP	
147-150	NEOS	SEOS	1	RR	255	300	30	30	P	Y	BP	
147-148	NEOS	SEOS	3	AL	258	303	30	28	P	Y	BP	
147-149	NEOS	SEOS	4	AL	258	303	30	30	P	Y	BP	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: 4
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-2015
PAGE# 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
140-151	WEOS	EEOS	3	AL	739	744	30	30	P	Y	ED	
144-151	NEOS	SEOS	2	AL	739	744	30	30	P	Y	EP	
141-151	NEOS	SEOS	1	AL	740	745	30	28	P	Y	EP	
115-151	WEOS	EEOS	4	AL	740	745	30	30	P	Y	EP	
115-144	WEOS	EEOS	5	AL	740	745	30	28	P	Y	EP	
114-144	WEOS	EEOS	6	AL	740	745	30	28	P	Y	EP	
114-143	WEOS	EEOS	7	AL	741	746	30	29	P	Y	EP	
89-145	WEOS	EEOS	8	AL	741	746	30	28	P	Y	EP	
89-150	WEOS	EEOS	10	AL	743	748	30	30	P	Y	EP	
89-149	WEOS	EEOS	9	AL	743	748	30	30	P	Y	EP	
90-149	NEOS	SEOS	1	AL	802	807	30	28	P	Y	EP	
92-149	NEOS	SEOS	3	AL	802	807	30	28	P	Y	EP	
93-149	NEOS	SEOS	2	AL	803	808	30	29	P	Y	EP	
95-149	NEOS	SEOS	4	AL	803	808	30	30	P	Y	EP	
148-149	WEOS	EEOS	8	AL	826	831	30	28	P	Y	EP	
95-149	NEOS	SEOS	6	AL	826	831	30	30	P	Y	EP	
96-148	WEOS	EEOS	7	AL	826	830	30	30	P	Y	EP	
113-148	NEOS	SEOS	5	AL	832	837	30	30	P	Y	EP	
146,150	EEOS	WEOS	2	AL	836	841	30	30	P	Y	KL	
145,R290	NEOS	SEOS	1	AL	840	845	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-20-15
PAGE# 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
150, R290	NEOS	S005	6	AL	846	851	30	30	P	Y	KL	
14F, 147E.	NEOS	R320	2	AL	14:02	14:07	30	30	P	N	KL	
14F, 147 E.	R320	R321	1	AL	14:03	14:08	30	29	P	Y	KL	
14F, 89E.	NEOS	S005	3	AL	14:04	14:09	30	30	P	Y	KL	
14F, 147W.	NEOS	R320	4	AL	14:02	14:07	30	30	P	N	KL	
14F, 147W.	R320	R321	6	AL	14:03	14:08	30	30	P	Y	KL	
14F, 89W.	NEOS	S005	5	AL	14:04	14:09	30	30	P	Y	KL	
147, 149	NEOS	S005	2	AL	14:58	1503	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-2015
PAGE# 1 OF 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
115, 152	SEOS	NEOS	1	UM	935	940	30	30	P	Y	EP	INCOMPLETE
152, 153	SEOS	NEOS	2	UM	938	943	30	29	P	Y	EP	
153, 155	SEOS	NEOS	4	UM	948	953	30	30	P	Y	EP	
155, 156	SEOS	NEOS	3	UM	954	959	30	30	P	Y	EP	
115, 152	SEOS	NEOS	1	UM	1006	1011	30	30	P	Y	EP	COMPLETE
152, 154	SEOS	NEOS	2	UM	1007	1012	30	30	P	Y	EP	
153, 154	EEOS	WEOS	3	UM	1019	1024	30	30	P	Y	EP	
154, 155	SEOS	NEOS	4	UM	1025	1030	30	30	P	Y	EP	
156, 157	SEOS	NEOS	2	UM	1038	1043	30	30	P	Y	EP	
156, 158	SEOS	NEOS	1	UM	1038	1043	30	30	P	Y	EP	
157, 158	EEOS	WEOS	3	UM	1044	1049	30	30	P	Y	EP	
156, 160	SEOS	NEOS	4	UM	200	205	30	30	P	Y	EP	
159, 160	EEOS	WEOS	2	UM	206	211	30	30	P	Y	EP	
158, 159	SEOS	NEOS	1	UM	213	218	30	30	P	Y	EP	
157, 159	SEOS	NEOS	3	UM	213	218	30	30	P	Y	EP	
161, 162	SEOS	NEOS	2	UM	249	254	30	29	P	Y	EP	
162, 163	EEOS	WEOS	4	UM	249	254	30	30	P	Y	EP	
161, 163	SEOS	NEOS	1	UM	249	254	30	30	P	Y	EP	
159, 163	SEOS	NEOS	3	UM	251	256	30	30	P	Y	EP	
159, 164	EEOS	WEOS	5	UM	251	256	30	30	P	Y	EP	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY E[illegible]EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-2015
PAGE# 2 of 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
163,164	EEOS	WEOS	6	UM	251	256	30	28	P	Y	EP	
164,165	EEOS	WEOS	7	UM	252	257	30	30	P	Y	EP	
159,165	SEOS	NEOS	1	UM	340	345	30	29	P	Y	EP	
159,166	SEOS	NEOS	2	UM	340	345	30	30	P	Y	EP	
165,166	EEOS	WEOS	3	UM	340	345	30	30	P	Y	EP	
166,167	EEOS	WEOS	4	UM	341	346	30	30	P	Y	EP	
159,167	SEOS	NEOS	8	UM	342	347	30	30	P	Y	EP	
159,168	SEOS	NEOS	9	UM	342	347	30	30	P	Y	EP	
167,168	EEOS	WEOS	10	UM	342	347	30	30	P	Y	EP	
168,169	EEOS	WEOS	1	UM	400	405	30	30	P	Y	EP	
159,169	SEOS	NEOS	2	UM	400	405	30	30	P	Y	EP	
169,170	EEOS	WEOS	3	UM	401	406	30	30	P	Y	EP	
159,170	SEOS	NEOS	4	UM	401	406	30	29	P	Y	EP	
170,171	EEOS	WEOS	5	UM	402	407	30	30	P	Y	EP	
159,171	SEOS	NEOS	6	UM	402	407	30	30	P	Y	EP	
171,172	EEOS	WEOS	7	UM	414	419	30	30	P	Y	EP	
159,172	SEOS	NEOS	8	UM	414	419	30	30	P	Y	EP	
172,173	EEOS	WEOS	9	UM	415	420	30	30	P	Y	EP	
159,173	SEOS	NEOS	10	UM	415	420	30	30	P	Y	EP	
173,174	EEOS	WEOS	5	UM	416	421	30	30	P	Y	EP	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : 8-6-15
DATE : S. NEJAD

BRANTLEY EI[illegible]IEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: _____
SECONDARY: X
OTHER: _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-7-2015
PAGE# 3 of 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
159,174	SEOS	NEOS	6	UM	416	421	30	30	P	Y	EP	
174,175	EEOS	WEOS	1	UM	440	445	30	30	P	Y	EP	
159,175	SEOS	NEOS	2	UM	440	445	30	30	P	Y	EP	
160,175	SEOS	NEOS	3	UM	441	446	30	30	P	Y	EP	
175,176	EEOS	WEOS	7	UM	441	446	30	30	P	Y	EP	
160,176	SEOS	NEOS	8	UM	441	446	30	30	P	Y	EP	
176,177	EEOS	WEOS	9	UM	442	447	30	30	P	Y	EP	
160,177	SEOS	NEOS	10	UM	442	447	30	29	P	Y	EP	
159,161	SEOS	NEOS	4	UM	450	455	30	29	P	Y	EP	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-16-15

BRANTLEY EI JEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY:
SECONDARY: X
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-8-2015
PAGE# 1 of 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
177,179	EEOS	WEOS	7	UM	827	832	30	30	P	Y	EP	
177,180	EEOS	WEOS	8	UM	827	832	30	30	P	Y	EP	
117,179	EEOS	WEOS	9	UM	827	832	30	30	P	Y	EP	
117,180	EEOS	WEOS	10	UM	827	832	30	29	P	Y	EP	
177,178	SEOS	NEOS	1	UM	840	845	30	30	P	Y	EP	
160,178	EEOS	WEOS	2	UM	840	845	30	30	P	Y	EP	
39P,131	EEOS	WEOS	3	UM	840	845	30	30	P	Y	EP	
39P, 178	EEOS	WEOS	4	UM	840	845	30	30	P	Y	EP	
39N, 158	EEOS	WEOS	5	UM	853	902	30	29	P	Y	EP	
39N, 133	EEOS	WEOS	6	UM	853	902	30	29	P	Y	EP	
134, 156	EEOS	WEOS	7	UM	910	915	30	29	P	Y	EP	NW END
134, 156	EEOS	WEOS	8	UM	910	915	30	30	P	Y	EP	NE END
138, 155	EEOS	WEOS	9	UM	910	915	30	30	P	Y	EP	
139, 154	EEOS	WEOS	10	UM	915	921	30	30	P	Y	EP	
141, 152	EEOS	WEOS	1	UM	917	922	30	30	P	Y	EP	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

Section 7
Geomembrane Destructive Samples Laboratory Results

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/13/2015

May 13, 2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of fifteen (15) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **May 13, 2015**

REFERENCE TRI JOB NO.: G150348

DATE RECEIVED: May 13, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI-CA CONTROL NUMBER*
1. DFS-1 P5/ 6	103860
2. DFS-3 P24/ 23	103861
3. DFS-5 P7/ 37	103883
4. DFS-6 P40/ 41	103884
5. DFS-7 P43/ 45	103885
6. DFS-8 P45/ 47	103886
7. DFS-9 P44/ 49	103887
8. DFS-10 P49/ 51	103888
9. DFS-11 P51/ 52	103889
10. DFS-12 P52/ 53	103890
11. DFS-13 P54/ 55	103891
12. DFS-14 P56/ 57	103892
13. DFS-15 P53/ 54	103893
14. DFS-16 P55/ 56	103894
15. DSX-1 Tie in/ P51	103895

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D6392	Shear Bond Strength
2. ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 8.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

9 Pages Total *(including this sheet)*

GAI-LAP

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150348**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-1	**103860**	153	> 50%	BRK		1 Outside	119	0	SE1	
P5/ 6		176	> 50%	BRK		2 Outside	118	0	SE1	
		171	> 50%	BRK		3 Outside	147	0	SE1	
		179	> 50%	BRK		4 Outside	126	0	SE1	
		175	> 50%	BRK		5 Outside	147	0	SE1	
						AVG:	**131**			91
						STD. DEV.	**15**			
						1 Inside	134	0	SE1	
						2 Inside	143	0	SE1	
						3 Inside	124	0	SE1	
						4 Inside	142	0	SE1	
						5 Inside	138	0	SE1	
	AVG.	**171**			120	**AVG:**	**136**			91
	STD. DEV.	**10**				STD. DEV.	**8**			
DFS-3	**103861**	157	> 50%	BRK		1 Outside	121	0	SE1	
P24/ 25		170	> 50%	BRK		2 Outside	145	0	SE1	
		165	> 50%	BRK		3 Outside	128	0	SE1	
		170	> 50%	BRK		4 Outside	149	0	SE1	
		144	> 50%	BRK		5 Outside	132	0	SE1	
						AVG:	**135**			91
						STD. DEV.	**12**			
						1 Inside	117	0	SE1	
						2 Inside	126	0	SE1	
						3 Inside	109	0	SE1	
						4 Inside	145	0	SE1	
						5 Inside	119	0	SE1	
	AVG:	**161**			120	**AVG:**	**123**			91
	STD. DEV.	**11**				STD. DEV.	**14**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150348**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-5	**103883**	162	> 50%	BRK		1 Outside	144	0	SE1	
P7/ 37		162	> 50%	BRK		2 Outside	161	0	SE1	
		155	> 50%	BRK		3 Outside	152	0	SE1	
		161	> 50%	BRK		4 Outside	158	0	SE1	
		151	> 50%	BRK		5 Outside	153	0	SE1	
						AVG:	**154**			91
						STD. DEV.	**7**			
						1 Inside	128	0	SE1	
						2 Inside	141	0	SE1	
						3 Inside	127	0	SE1	
						4 Inside	137	0	SE1	
						5 Inside	148	0	SE1	
	AVG.	**158**			120	**AVG:**	**136**			91
	STD. DEV.	**5**				STD. DEV.	**9**			
DFS-6	**103884**	173	> 50%	BRK		1 Outside	128	0	SE1	
P40/ 41		183	> 50%	BRK		2 Outside	126	0	SE1	
		184	> 50%	BRK		3 Outside	124	0	SE1	
		172	> 50%	BRK		4 Outside	126	0	SE1	
		173	> 50%	BRK		5 Outside	132	0	SE1	
						AVG:	**127**			91
						STD. DEV.	**3**			
						1 Inside	136	0	SE1	
						2 Inside	134	0	SE1	
						3 Inside	130	0	SE1	
						4 Inside	129	0	SE1	
						5 Inside	123	0	SE1	
	AVG:	**177**			120	**AVG:**	**130**			91
	STD. DEV.	**6**				STD. DEV.	**5**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150348**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-7	**103885**	174	> 50%	BRK		1 Outside	137	0	SE1	
P43/ 45		162	> 50%	BRK		2 Outside	126	0	SE1	
		167	> 50%	BRK		3 Outside	135	0	SE1	
		173	> 50%	BRK		4 Outside	135	0	SE1	
		147	> 50%	BRK		5 Outside	114	0	SE1	
						AVG:	**129**			91
						STD. DEV.	**10**			
						1 Inside	131	0	SE1	
						2 Inside	131	0	SE1	
						3 Inside	124	0	SE1	
						4 Inside	122	0	SE1	
						5 Inside	112	0	SE1	
	AVG.	**165**			120	**AVG:**	**124**			91
	STD. DEV.	**11**				STD. DEV.	**8**			
DFS-8	**103886**	168	> 50%	BRK		1 Outside	112	0	SE1	
P45/ 47		164	> 50%	BRK		2 Outside	116	0	SE1	
		167	> 50%	BRK		3 Outside	122	0	SE1	
		161	> 50%	BRK		4 Outside	131	0	SE1	
		164	> 50%	BRK		5 Outside	119	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**7**			
						1 Inside	137	0	SE1	
						2 Inside	120	0	SE1	
						3 Inside	108	0	SE1	
						4 Inside	110	0	SE1	
						5 Inside	111	0	SE1	
	AVG:	**165**			120	**AVG:**	**117**			91
	STD. DEV.	**3**				STD. DEV.	**12**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 4.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150348**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-9	**103887**	168	> 50%	BRK		1 Outside	122	0	SE1	
P44/ 49		162	> 50%	BRK		2 Outside	121	0	SE1	
		166	> 50%	BRK		3 Outside	121	0	SE1	
		169	> 50%	BRK		4 Outside	112	0	SE1	
		165	> 50%	BRK		5 Outside	123	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**4**			
						1 Inside	128	0	SE1	
						2 Inside	125	0	SE1	
						3 Inside	126	0	SE1	
						4 Inside	114	0	SE1	
						5 Inside	131	0	SE1	
	AVG.	**166**			120	**AVG:**	**125**			91
	STD. DEV.	**3**				STD. DEV.	**6**			
DFS-10	**103888**	167	> 50%	BRK		1 Outside	130	0	SE1	
P49/ 51		165	> 50%	BRK		2 Outside	143	0	SE1	
		165	> 50%	BRK		3 Outside	125	0	SE1	
		165	> 50%	BRK		4 Outside	119	0	SE1	
		153	> 50%	BRK		5 Outside	130	0	SE1	
						AVG:	**129**			91
						STD. DEV.	**9**			
						1 Inside	140	0	SE1	
						2 Inside	115	0	SE1	
						3 Inside	115	0	SE1	
						4 Inside	118	0	SE1	
						5 Inside	119	0	SE1	
	AVG:	**163**			120	**AVG:**	**121**			91
	STD. DEV.	**6**				STD. DEV.	**11**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 5.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: ***Brantley Engineering, LLC***
PROJECT: ***JED Cell 11***
DATE REC'D: ***13-May-15***

MATERIAL: ***HDPE SEAM***
SEAM TYPE: ***Fusion Weld***
TRI JOB #: ***G150348***

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-11	**103889**	170	> 50%	BRK		1 Outside	128	0	SE1	
P51/ 52		166	> 50%	BRK		2 Outside	127	0	SE1	
		171	> 50%	BRK		3 Outside	150	0	SE1	
		173	> 50%	BRK		4 Outside	138	0	SE1	
		166	> 50%	BRK		5 Outside	123	0	SE1	
						AVG:	**133**			91
						STD. DEV.	**11**			
						1 Inside	122	0	SE1	
						2 Inside	121	0	SE1	
						3 Inside	118	0	SE1	
						4 Inside	111	0	SE1	
						5 Inside	112	0	SE1	
	AVG.	**169**			120	**AVG:**	**117**			91
	STD. DEV.	**3**				STD. DEV.	**5**			
DFS-12	**103890**	167	> 50%	BRK		1 Outside	153	0	SE1	
P52/ 53		171	> 50%	BRK		2 Outside	136	0	SE1	
		148	> 50%	BRK		3 Outside	151	0	SE1	
		156	> 50%	BRK		4 Outside	124	0	SE1	
		156	> 50%	BRK		5 Outside	144	0	SE1	
						AVG:	**142**			91
						STD. DEV.	**12**			
						1 Inside	119	0	SE1	
						2 Inside	118	0	SE1	
						3 Inside	117	0	SE1	
						4 Inside	114	0	SE1	
						5 Inside	121	0	SE1	
	AVG:	**160**			120	**AVG:**	**118**			91
	STD. DEV.	**9**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 5)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 6.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150348**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-13	**103891**	162	> 50%	BRK		1 Outside	137	0	SE1	
P54/ 55		163	> 50%	BRK		2 Outside	123	0	SE1	
		163	> 50%	BRK		3 Outside	117	0	SE1	
		165	> 50%	BRK		4 Outside	116	0	SE1	
		162	> 50%	BRK		5 Outside	125	0	SE1	
						AVG:	**124**			91
						STD. DEV.	**8**			
						1 Inside	115	0	SE1	
						2 Inside	111	0	SE1	
						3 Inside	127	0	SE1	
						4 Inside	107	0	SE1	
						5 Inside	116	0	SE1	
	AVG.	**163**			120	**AVG:**	**115**			91
	STD. DEV.	**1**				STD. DEV.	**7**			
DFS-14	**103892**	169	> 50%	BRK		1 Outside	142	0	SE1	
P56/ 57		159	> 50%	BRK		2 Outside	128	0	SE1	
		164	> 50%	BRK		3 Outside	126	0	SE1	
		171	> 50%	BRK		4 Outside	116	0	SE1	
		167	> 50%	BRK		5 Outside	144	0	SE1	
						AVG:	**131**			91
						STD. DEV.	**12**			
						1 Inside	116	0	SE1	
						2 Inside	114	0	SE1	
						3 Inside	113	0	SE1	
						4 Inside	114	0	SE1	
						5 Inside	117	0	SE1	
	AVG:	**166**			120	**AVG:**	**115**			91
	STD. DEV.	**5**				STD. DEV.	**2**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 6)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 7.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150348**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-15	**103893**	166	> 50%	BRK		1 Outside	120	0	SE1	
P53/ 54		159	> 50%	BRK		2 Outside	123	0	SE1	
		158	> 50%	BRK		3 Outside	115	0	SE1	
		168	> 50%	BRK		4 Outside	116	0	SE1	
		162	> 50%	BRK		5 Outside	110	0	SE1	
						AVG:	**117**			91
						STD. DEV.	**5**			
						1 Inside	115	0	SE1	
						2 Inside	122	0	SE1	
						3 Inside	114	0	SE1	
						4 Inside	111	0	SE1	
						5 Inside	115	0	SE1	
	AVG.	**163**			120	**AVG:**	**115**			91
	STD. DEV.	**4**				STD. DEV.	**4**			
DFS-16	**103894**	157	> 50%	BRK		1 Outside	112	0	SE1	
P55/ 56		170	> 50%	BRK		2 Outside	113	0	SE1	
		169	> 50%	BRK		3 Outside	114	0	SE1	
		165	> 50%	BRK		4 Outside	111	0	SE1	
		171	> 50%	BRK		5 Outside	113	0	SE1	
						AVG:	**113**			91
						STD. DEV.	**1**			
						1 Inside	111	0	SE1	
						2 Inside	110	0	SE1	
						3 Inside	117	0	SE1	
						4 Inside	121	0	SE1	
						5 Inside	118	0	SE1	
	AVG:	**166**			120	**AVG:**	**115**			91
	STD. DEV.	**6**				STD. DEV.	**5**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 7)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 8.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150348**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-May-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				PEEL EVALUATION				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DSX-1	**103895**	154	> 50%	BRK		1 Outside	151	0	SE3	
Tie in/ P51		151	> 50%	BRK		2 Outside	154	0	SE3	
		153	> 50%	BRK		3 Outside	118	0	SE3	
		150	> 50%	BRK		4 Outside	142	0	SE3	
		152	> 50%	BRK		5 Outside	142	0	SE3	
						AVG:	**141**			78
						STD. DEV.	**14**			
						1 Inside	N/A			
						2 Inside				
						3 Inside				
						4 Inside				
						5 Inside				
	AVG.	**152**			120	**AVG:**				
	STD. DEV.	**2**				STD. DEV.				

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 8)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/14/2015

May 14, 2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of ten (10) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **May 14, 2015**

REFERENCE TRI JOB NO.: G150351

DATE RECEIVED: May 14, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

	SAMPLE ID	***TRI-CA CONTROL NUMBER***
1.	DFS-2 P13/ 14	103906
2.	DFS-4 P33/ 34	103907
3.	DFS-17 P57/ 58	103908
4.	DFS-18 P58/ 59	103909
5.	DFS-19 P59/ 60	103910
6.	DFS-20 P60/ 61	103911
7.	DFS-21 P61/ 62	103912
8.	DFS-22 P62/ 63	103913
9.	DFS-23 P63/ 64	103914
10.	DFS-24 P29/ 77	103890

TESTS REQUIRED / PERFORMED:

	TEST METHOD	***DESCRIPTION***
1.	ASTM D6392	Shear Bond Strength
2.	ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 5.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

6 Pages Total *(including this sheet)*

GAI-LAP

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **14-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150351**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 14-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DSF-2	**103906**	166	> 50%	BRK		1 Outside	114	0	SE1	
P13/ 14		168	> 50%	BRK		2 Outside	123	0	SE1	
		169	> 50%	BRK		3 Outside	139	0	SE1	
		166	> 50%	BRK		4 Outside	112	0	SE1	
		162	> 50%	BRK		5 Outside	115	0	SE1	
						AVG:	**121**			91
						STD. DEV.	**11**			
						1 Inside	122	0	SE1	
						2 Inside	119	0	SE1	
						3 Inside	139	0	SE1	
						4 Inside	125	0	SE1	
						5 Inside	124	0	SE1	
	AVG.	**166**			120	**AVG:**	**126**			91
	STD. DEV.	**3**				STD. DEV.	**8**			
DSF-4	**103907**	176	> 50%	BRK		1 Outside	121	0	SE1	
P33/ 34		180	> 50%	BRK		2 Outside	115	0	SE1	
		187	> 50%	BRK		3 Outside	118	0	SE1	
		174	> 50%	BRK		4 Outside	116	0	SE1	
		176	> 50%	BRK		5 Outside	123	0	SE1	
						AVG:	**119**			91
						STD. DEV.	**3**			
						1 Inside	137	0	SE1	
						2 Inside	139	0	SE1	
						3 Inside	140	0	SE1	
						4 Inside	136	0	SE1	
						5 Inside	137	0	SE1	
	AVG:	**179**			120	**AVG:**	**138**			91
	STD. DEV.	**5**				STD. DEV.	**2**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **14-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150351**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 14-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DSF-17	**103908**	174	> 50%	BRK		1 Outside	135	0	SE1	
P57/ 58		171	> 50%	BRK		2 Outside	125	0	SE1	
		177	> 50%	BRK		3 Outside	130	0	SE1	
		170	> 50%	BRK		4 Outside	130	0	SE1	
		171	> 50%	BRK		5 Outside	139	0	SE1	
						AVG:	**132**			91
						STD. DEV.	**5**			
						1 Inside	111	0	SE1	
						2 Inside	113	0	SE1	
						3 Inside	114	0	SE1	
						4 Inside	106	0	SE1	
						5 Inside	118	0	SE1	
	AVG.	**173**			120	**AVG:**	**112**			91
	STD. DEV.	**3**				STD. DEV.	**4**			
DSF-18	**103909**	181	> 50%	BRK		1 Outside	117	0	SE1	
P58/ 59		175	> 50%	BRK		2 Outside	129	0	SE1	
		177	> 50%	BRK		3 Outside	116	0	SE1	
		173	> 50%	BRK		4 Outside	118	0	SE1	
		176	> 50%	BRK		5 Outside	129	0	SE1	
						AVG:	**122**			91
						STD. DEV.	**7**			
						1 Inside	115	0	SE1	
						2 Inside	126	0	SE1	
						3 Inside	129	0	SE1	
						4 Inside	125	0	SE1	
						5 Inside	137	0	SE1	
	AVG:	**176**			120	**AVG:**	**126**			91
	STD. DEV.	**3**				STD. DEV.	**8**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **14-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150351**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 14-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DSF-19	**103910**	177	> 50%	BRK		1 Outside	130	0	SE1	
P59/ 60		175	> 50%	BRK		2 Outside	146	0	SE1	
		180	> 50%	BRK		3 Outside	131	0	SE1	
		186	> 50%	BRK		4 Outside	134	0	SE1	
		178	> 50%	BRK		5 Outside	133	0	SE1	
						AVG:	**135**			91
						STD. DEV.	**6**			
						1 Inside	119	0	SE1	
						2 Inside	138	0	SE1	
						3 Inside	146	0	SE1	
						4 Inside	132	0	SE1	
						5 Inside	120	0	SE1	
	AVG.	**179**			120	**AVG:**	**131**			91
	STD. DEV.	**4**				STD. DEV.	**12**			
DSF-20	**103911**	178	> 50%	BRK		1 Outside	112	0	SE1	
P60/ 61		172	> 50%	BRK		2 Outside	116	0	SE1	
		177	> 50%	BRK		3 Outside	111	0	SE1	
		172	> 50%	BRK		4 Outside	121	0	SE1	
		184	> 50%	BRK		5 Outside	125	0	SE1	
						AVG:	**117**			91
						STD. DEV.	**6**			
						1 Inside	115	0	SE1	
						2 Inside	111	0	SE1	
						3 Inside	115	0	SE1	
						4 Inside	113	0	SE1	
						5 Inside	141	0	SE1	
	AVG:	**177**			120	**AVG:**	**119**			91
	STD. DEV.	**5**				STD. DEV.	**12**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 4.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **14-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150351**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 14-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DSF-21	**103912**	169	> 50%	BRK		1 Outside	118	0	SE1	
P61/ 62		165	> 50%	BRK		2 Outside	135	0	SE1	
		164	> 50%	BRK		3 Outside	126	0	SE1	
		170	> 50%	BRK		4 Outside	125	0	SE1	
		168	> 50%	BRK		5 Outside	133	0	SE1	
						AVG:	**127**			91
						STD. DEV.	**7**			
						1 Inside	119	0	SE1	
						2 Inside	116	0	SE1	
						3 Inside	124	0	SE1	
						4 Inside	118	0	SE1	
						5 Inside	118	0	SE1	
	AVG.	**167**			120	**AVG:**	**119**			91
	STD. DEV.	**3**				STD. DEV.	**3**			
DSF-22	**103913**	175	> 50%	BRK		1 Outside	116	0	SE1	
P62/ 63		171	> 50%	BRK		2 Outside	117	0	SE1	
		174	> 50%	BRK		3 Outside	127	0	SE1	
		174	> 50%	BRK		4 Outside	116	0	SE1	
		170	> 50%	BRK		5 Outside	122	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**5**			
						1 Inside	121	0	SE1	
						2 Inside	122	0	SE1	
						3 Inside	123	0	SE1	
						4 Inside	116	0	SE1	
						5 Inside	124	0	SE1	
	AVG:	**173**			120	**AVG:**	**121**			91
	STD. DEV.	**2**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 5.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **14-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150351**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 14-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DSF-23	**103914**	180	> 50%	BRK		1 Outside	138	0	SE1	
P63/ 64		165	> 50%	BRK		2 Outside	125	0	SE1	
		176	> 50%	BRK		3 Outside	133	0	SE1	
		174	> 50%	BRK		4 Outside	107	0	SE1	
		170	> 50%	BRK		5 Outside	117	0	SE1	
						AVG:	**124**			91
						STD. DEV.	**12**			
						1 Inside	108	0	SE1	
						2 Inside	110	0	SE1	
						3 Inside	111	0	SE1	
						4 Inside	124	0	SE1	
						5 Inside	133	0	SE1	
	AVG.	**173**			120	**AVG:**	**117**			91
	STD. DEV.	**6**				STD. DEV.	**11**			
DSF-24	**103915**	167	> 50%	BRK		1 Outside	135	0	SE1	
P29/ 77		161	> 50%	BRK		2 Outside	135	0	SE1	
		166	> 50%	BRK		3 Outside	137	0	SE1	
		161	> 50%	BRK		4 Outside	156	0	SE1	
		168	> 50%	BRK		5 Outside	154	0	SE1	
						AVG:	**143**			91
						STD. DEV.	**11**			
						1 Inside	115	0	SE1	
						2 Inside	114	0	SE1	
						3 Inside	114	0	SE1	
						4 Inside	117	0	SE1	
						5 Inside	121	0	SE1	
	AVG:	**165**			120	**AVG:**	**116**			91
	STD. DEV.	**3**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 5)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

May 19, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/19/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of seventeen (17) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **May 19, 2015**

REFERENCE TRI JOB NO.: G150368

DATE RECEIVED: May 13, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI-CA CONTROL NUMBER*	*SAMPLE ID*	*TRI-CA CONTROL NUMBER*
1. DFS-25	104011	10. DFS-34	104020
2. DFS-26	104012	11. DFS-35	104021
3. DFS-27	104013	12. DFS-36	104022
4. DFS-28	104014	13. DFS-37	104023
5. DFS-29	104015	14. DFS-38	104024
6. DFS-30	104016	15. DXS-2	104025
7. DFS-31	104017	16. DXS-3	104026
8. DFS-32	104018	17. DXS-4	104027
9. DFS-33	104019		

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D6392	Shear Bond Strength
2. ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 9.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

10 Pages Total *(including this sheet)*

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **19-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150368**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				PEEL EVALUATION				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-25	**104011**	163	> 50%	BRK		1 Outside	111	0	SE1	
		152	> 50%	BRK		2 Outside	116	0	SE1	
		159	> 50%	BRK		3 Outside	115	0	SE1	
		165	> 50%	BRK		4 Outside	143	0	SE1	
		155	> 50%	BRK		5 Outside	140	0	SE1	
						AVG:	**125**			91
						STD. DEV.	**15**			
						1 Inside	111	0	SE1	
						2 Inside	116	0	SE1	
						3 Inside	115	0	SE1	
						4 Inside	116	0	SE1	
						5 Inside	138	0	SE1	
	AVG.	**159**			120	**AVG:**	**119**			91
	STD. DEV.	**5**				STD. DEV.	**11**			
DFS-26	**104012**	158	> 50%	BRK		1 Outside	138	0	SE1	
		157	> 50%	BRK		2 Outside	122	0	SE1	
		164	> 50%	BRK		3 Outside	111	0	SE1	
		173	> 50%	BRK		4 Outside	113	0	SE1	
		181	> 50%	BRK		5 Outside	118	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**11**			
						1 Inside	116	0	SE1	
						2 Inside	117	0	SE1	
						3 Inside	115	0	SE1	
						4 Inside	113	0	SE1	
						5 Inside	111	0	SE1	
	AVG:	**167**			120	**AVG:**	**114**			91
	STD. DEV.	**10**				STD. DEV.	**2**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: ***Brantley Engineering, LLC***
PROJECT: ***JED Cell 11***
DATE REC'D: ***19-May-15***

MATERIAL: ***HDPE SEAM***
SEAM TYPE: ***Fusion Weld***
TRI JOB #: ***G150368***

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-27	**104013**	163	> 50%	BRK		1 Outside	121	0	SE1	
		180	> 50%	BRK		2 Outside	118	0	SE1	
		167	> 50%	BRK		3 Outside	129	0	SE1	
		163	> 50%	BRK		4 Outside	128	0	SE1	
		177	> 50%	BRK		5 Outside	138	0	SE1	
						AVG:	**127**			91
						STD. DEV.	**8**			
						1 Inside	111	0	SE1	
						2 Inside	117	0	SE1	
						3 Inside	109	0	SE1	
						4 Inside	119	0	SE1	
						5 Inside	116	0	SE1	
	AVG.	**170**			120	**AVG:**	**114**			91
	STD. DEV.	**8**				STD. DEV.	**4**			
DFS-28	**104014**	162	> 50%	BRK		1 Outside	152	0	SE1	
		176	> 50%	BRK		2 Outside	156	0	SE1	
		179	> 50%	BRK		3 Outside	152	0	SE1	
		157	> 50%	BRK		4 Outside	147	0	SE1	
		164	> 50%	BRK		5 Outside	130	0	SE1	
						AVG:	**147**			91
						STD. DEV.	**10**			
						1 Inside	122	0	SE1	
						2 Inside	135	0	SE1	
						3 Inside	131	0	SE1	
						4 Inside	129	0	SE1	
						5 Inside	114	0	SE1	
	AVG:	**168**			120	**AVG:**	**126**			91
	STD. DEV.	**9**				STD. DEV.	**8**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **19-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150368**

QC'd By: María Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-29	**104015**	178	> 50%	BRK		1 Outside	128	0	SE1	
		190	> 50%	BRK		2 Outside	144	0	SE1	
		170	> 50%	BRK		3 Outside	120	0	SE1	
		176	> 50%	BRK		4 Outside	126	0	SE1	
		173	> 50%	BRK		5 Outside	122	0	SE1	
						AVG:	**128**			91
						STD. DEV.	**9**			
						1 Inside	112	0	SE1	
						2 Inside	111	0	SE1	
						3 Inside	112	0	SE1	
						4 Inside	120	0	SE1	
						5 Inside	110	0	SE1	
	AVG.	**177**			120	**AVG:**	**113**			91
	STD. DEV.	**8**				STD. DEV.	**4**			
DFS-30	**104016**	157	> 50%	BRK		1 Outside	117	0	SE1	
		189	> 50%	BRK		2 Outside	121	0	SE1	
		179	> 50%	BRK		3 Outside	111	0	SE1	
		164	> 50%	BRK		4 Outside	117	0	SE1	
		180	> 50%	BRK		5 Outside	118	0	SE1	
						AVG:	**117**			91
						STD. DEV.	**4**			
						1 Inside	109	0	SE1	
						2 Inside	105	0	SE1	
						3 Inside	105	0	SE1	
						4 Inside	113	0	SE1	
						5 Inside	112	0	SE1	
	AVG:	**174**			120	**AVG:**	**109**			91
	STD. DEV.	**13**				STD. DEV.	**4**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

GAI-LAP

TABLE 4.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **19-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150368**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-31	**104017**	169	> 50%	BRK		1 Outside	106	0	SE1	
		168	> 50%	BRK		2 Outside	118	0	SE1	
		175	> 50%	BRK		3 Outside	120	0	SE1	
		157	> 50%	BRK		4 Outside	129	0	SE1	
		166	> 50%	BRK		5 Outside	126	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**9**			
						1 Inside	110	0	SE1	
						2 Inside	120	0	SE1	
						3 Inside	112	0	SE1	
						4 Inside	117	0	SE1	
						5 Inside	134	0	SE1	
	AVG.	**167**			120	**AVG:**	**119**			91
	STD. DEV.	**7**				STD. DEV.	**9**			
DFS-32	**104018**	178	> 50%	BRK		1 Outside	132	0	SE1	
		180	> 50%	BRK		2 Outside	138	0	SE1	
		187	> 50%	BRK		3 Outside	132	0	SE1	
		163	> 50%	BRK		4 Outside	137	0	SE1	
		187	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**132**			91
						STD. DEV.	**7**			
						1 Inside	137	0	SE1	
						2 Inside	146	0	SE1	
						3 Inside	108	0	SE1	
						4 Inside	118	0	SE1	
						5 Inside	116	0	SE1	
	AVG:	**179**			120	**AVG:**	**125**			91
	STD. DEV.	**10**				STD. DEV.	**16**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 5.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **19-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150368**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-33	**104019**	171	> 50%	BRK		1 Outside	122	0	SE1	
		169	> 50%	BRK		2 Outside	119	0	SE1	
		171	> 50%	BRK		3 Outside	118	0	SE1	
		163	> 50%	BRK		4 Outside	113	0	SE1	
		171	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**118**			91
						STD. DEV.	**3**			
						1 Inside	125	0	SE1	
						2 Inside	134	0	SE1	
						3 Inside	109	0	SE1	
						4 Inside	114	0	SE1	
						5 Inside	124	0	SE1	
	AVG.	**169**			120	**AVG:**	**121**			91
	STD. DEV.	**3**				STD. DEV.	**10**			
DFS-34	**104020**	163	> 50%	BRK		1 Outside	119	0	SE1	
		167	> 50%	BRK		2 Outside	128	0	SE1	
		164	> 50%	BRK		3 Outside	124	0	SE1	
		163	> 50%	BRK		4 Outside	122	0	SE1	
		167	> 50%	BRK		5 Outside	121	0	SE1	
						AVG:	**123**			91
						STD. DEV.	**3**			
						1 Inside	122	0	SE1	
						2 Inside	116	0	SE1	
						3 Inside	114	0	SE1	
						4 Inside	110	0	SE1	
						5 Inside	107	0	SE1	
	AVG:	**165**			120	**AVG:**	**114**			91
	STD. DEV.	**2**				STD. DEV.	**6**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 5)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 6.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **19-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150368**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-35	**104021**	164	> 50%	BRK		1 Outside	138	0	SE1	
		174	> 50%	BRK		2 Outside	134	0	SE1	
		169	> 50%	BRK		3 Outside	116	0	SE1	
		160	> 50%	BRK		4 Outside	139	0	SE1	
		175	> 50%	BRK		5 Outside	150	0	SE1	
						AVG:	**135**			91
						STD. DEV.	**12**			
						1 Inside	108	0	SE1	
						2 Inside	114	0	SE1	
						3 Inside	108	0	SE1	
						4 Inside	119	0	SE1	
						5 Inside	116	0	SE1	
	AVG.	**168**			120	**AVG:**	**113**			91
	STD. DEV.	**6**				STD. DEV.	**5**			
DFS-36	**104022**	166	> 50%	BRK		1 Outside	119	0	SE1	
		172	> 50%	BRK		2 Outside	121	0	SE1	
		167	> 50%	BRK		3 Outside	110	0	SE1	
		162	> 50%	BRK		4 Outside	109	0	SE1	
		170	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**116**			91
						STD. DEV.	**6**			
						1 Inside	119	0	SE1	
						2 Inside	132	0	SE1	
						3 Inside	124	0	SE1	
						4 Inside	125	0	SE1	
						5 Inside	129	0	SE1	
	AVG:	**167**			120	**AVG:**	**126**			91
	STD. DEV.	**4**				STD. DEV.	**5**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 6)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 7.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **19-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150368**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-37	**104023**	172	> 50%	BRK		1 Outside	133	0	SE1	
		176	> 50%	BRK		2 Outside	148	0	SE1	
		177	> 50%	BRK		3 Outside	145	0	SE1	
		167	> 50%	BRK		4 Outside	105	0	SE1	
		180	> 50%	BRK		5 Outside	107	0	SE1	
						AVG:	**128**			91
						STD. DEV.	**21**			
						1 Inside	119	0	SE1	
						2 Inside	130	0	SE1	
						3 Inside	110	0	SE1	
						4 Inside	115	0	SE1	
						5 Inside	116	0	SE1	
	AVG.	**174**			120	**AVG:**	**118**			91
	STD. DEV.	**5**				STD. DEV.	**7**			
DFS-38	**104024**	166	> 50%	BRK		1 Outside	122	0	SE1	
		169	> 50%	BRK		2 Outside	135	0	SE1	
		162	> 50%	BRK		3 Outside	131	0	SE1	
		160	> 50%	BRK		4 Outside	160	0	SE1	
		168	> 50%	BRK		5 Outside	157	0	SE1	
						AVG:	**141**			91
						STD. DEV.	**17**			
						1 Inside	125	0	SE1	
						2 Inside	117	0	SE1	
						3 Inside	124	0	SE1	
						4 Inside	126	0	SE1	
						5 Inside	119	0	SE1	
	AVG:	**165**			120	**AVG:**	**122**			91
	STD. DEV.	**4**				STD. DEV.	**4**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 7)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 8.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **19-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Extrusion Weld**
TRI JOB #: **G150368**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DXS-2	**104025**	157	> 50%	BRK		1 Outside	158	0	SE3	
		156	> 50%	BRK		2 Outside	153	0	SE3	
		154	> 50%	BRK		3 Outside	152	0	SE3	
		156	> 50%	BRK		4 Outside	149	0	SE3	
		155	> 50%	BRK		5 Outside	142	0	SE3	
						AVG:	**151**			78
						STD. DEV.	**6**			
						1 Inside	N/A			
						2 Inside				
						3 Inside				
						4 Inside				
						5 Inside				
	AVG.	**156**			120	**AVG:**				
	STD. DEV.	**1**				STD. DEV.				
DXS-3	**104026**	162	> 50%	BRK		1 Outside	121	0	SE3	
		162	> 50%	BRK		2 Outside	110	0	SE3	
		158	> 50%	BRK		3 Outside	120	0	SE3	
		163	> 50%	BRK		4 Outside	111	0	SE3	
		163	> 50%	BRK		5 Outside	122	0	SE3	
						AVG:	**117**			78
						STD. DEV.	**6**			
						1 Inside	N/A			
						2 Inside				
						3 Inside				
						4 Inside				
						5 Inside				
	AVG:	**162**			120	**AVG:**				
	STD. DEV.	**2**				STD. DEV.				

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 8)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 9.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **19-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Extrusion Weld**
TRI JOB #: **G150368**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 19-May-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				PEEL EVALUATION				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DXS-4	**104027**	160	> 50%	BRK		1 Outside	116	0	SE3	
		157	> 50%	BRK		2 Outside	121	0	SE3	
		170	> 50%	BRK		3 Outside	104	0	SE3	
		157	> 50%	BRK		4 Outside	127	0	SE3	
		150	> 50%	BRK		5 Outside	125	0	SE3	
						AVG:	**119**			78
						STD. DEV.	**9**			
						1 Inside	N/A			
						2 Inside				
						3 Inside				
						4 Inside				
						5 Inside				
	AVG.	**159**			120	**AVG:**				
	STD. DEV.	**7**				STD. DEV.				

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 9)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

July 9, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 07/09/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of nine (9) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **July 9, 2015**

REFERENCE TRI JOB NO.: G150563

DATE RECEIVED: July 9, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

	SAMPLE ID	*TRI-CA CONTROL NUMBER*
1.	DFS-48 P115/ 152	105048
2.	DFS-49 P152/ 154	105049
3.	DFS-50 P154/ 155	105050
4.	DFS-51 P156/ 157	105051
5.	DFS-52 P158/ 159	105052
6.	DFS-53 P165/ 166	105053
7.	DFS-54 P172/ 173	105054
8.	DFS-55 P159/ 174	105055
9.	DXS-5	105056

TESTS REQUIRED / PERFORMED:

	TEST METHOD	*DESCRIPTION*
1.	ASTM D6392	Shear Bond Strength
2.	ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 5.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

6 Pages Total

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **9-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150563**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 9-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-48	**105048**	171	> 50%	BRK		1 Outside	105	0	SE1	
P115/ 112		166	> 50%	BRK		2 Outside	111	0	SE1	
		172	> 50%	BRK		3 Outside	117	0	SE1	
		176	> 50%	BRK		4 Outside	114	0	SE1	
		170	> 50%	BRK		5 Outside	106	0	SE1	
						AVG:	**111**			91 fus
						STD. DEV.	**5**			78 ext
						1 Inside	108	0	SE1	
						2 Inside	110	0	SE1	
						3 Inside	112	0	SE1	
						4 Inside	118	0	SE1	
						5 Inside	131	0	SE1	
	AVG.	**171**			120	**AVG:**	**116**			
	STD. DEV.	**4**				STD. DEV.	**9**			
DFS-49	**105049**	168	> 50%	BRK		1 Outside	121	0	SE1	
P152/ 154		168	> 50%	BRK		2 Outside	107	0	SE1	
		174	> 50%	BRK		3 Outside	115	0	SE1	
		168	> 50%	BRK		4 Outside	111	0	SE1	
		169	> 50%	BRK		5 Outside	118	0	SE1	
						AVG:	**114**			
						STD. DEV.	**6**			
						1 Inside	110	0	SE1	
						2 Inside	101	0	SE1	
						3 Inside	116	0	SE1	
						4 Inside	114	0	SE1	
						5 Inside	112	0	SE1	
	AVG:	**169**			120	**AVG:**	**111**			
	STD. DEV.	**3**				STD. DEV.	**6**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **9-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150563**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 9-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-50	**105050**	159	> 50%	BRK		1 Outside	121	0	SE1	
P154/ 155		163	> 50%	BRK		2 Outside	107	0	SE1	
		165	> 50%	BRK		3 Outside	105	0	SE1	
		163	> 50%	BRK		4 Outside	117	0	SE1	
		163	> 50%	BRK		5 Outside	112	0	SE1	
						AVG:	**112**			
						STD. DEV.	**7**			
						1 Inside	117	0	SE1	
						2 Inside	117	0	SE1	
						3 Inside	115	0	SE1	
						4 Inside	112	0	SE1	
						5 Inside	119	0	SE1	
	AVG.	**163**			120	**AVG:**	**116**			
	STD. DEV.	**2**				STD. DEV.	**3**			
DFS-51	**105051**	163	> 50%	BRK		1 Outside	107	0	SE1	
P156/ 157		166	> 50%	BRK		2 Outside	118	0	SE1	
		163	> 50%	BRK		3 Outside	110	0	SE1	
		163	> 50%	BRK		4 Outside	109	0	SE1	
		163	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**113**			
						STD. DEV.	**6**			
						1 Inside	113	0	SE1	
						2 Inside	118	0	SE1	
						3 Inside	121	0	SE1	
						4 Inside	121	0	SE1	
						5 Inside	117	0	SE1	
	AVG:	**164**			120	**AVG:**	**118**			
	STD. DEV.	**1**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **9-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150563**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 9-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-52	**105052**	166	> 50%	BRK		1 Outside	124	0	SE1	
P158/ 159		168	> 50%	BRK		2 Outside	121	0	SE1	
		167	> 50%	BRK		3 Outside	124	0	SE1	
		163	> 50%	BRK		4 Outside	136	0	SE1	
		166	> 50%	BRK		5 Outside	130	0	SE1	
						AVG:	**127**			
						STD. DEV.	**6**			
						1 Inside	109	0	SE1	
						2 Inside	111	0	SE1	
						3 Inside	114	0	SE1	
						4 Inside	116	0	SE1	
						5 Inside	117	0	SE1	
	AVG.	**166**			120	**AVG:**	**113**			
	STD. DEV.	**2**				STD. DEV.	**3**			
DFS-53	**105053**	160	> 50%	BRK		1 Outside	115	0	SE1	
P165/ 166		162	> 50%	BRK		2 Outside	118	0	SE1	
		167	> 50%	BRK		3 Outside	125	0	SE1	
		160	> 50%	BRK		4 Outside	125	0	SE1	
		168	> 50%	BRK		5 Outside	125	0	SE1	
						AVG:	**122**			
						STD. DEV.	**5**			
						1 Inside	113	0	SE1	
						2 Inside	113	0	SE1	
						3 Inside	113	0	SE1	
						4 Inside	128	0	SE1	
						5 Inside	119	0	SE1	
	AVG:	**163**			120	**AVG:**	**117**			
	STD. DEV.	**4**				STD. DEV.	**7**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 4.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **9-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150563**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 9-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFS-54	**105054**	160	> 50%	BRK		1 Outside	116	0	SE1	
P172/ 173		165	> 50%	BRK		2 Outside	117	0	SE1	
		162	> 50%	BRK		3 Outside	118	0	SE1	
		165	> 50%	BRK		4 Outside	100	0	SE1	
		162	> 50%	BRK		5 Outside	114	0	SE1	
						AVG:	**113**			
						STD. DEV.	**7**			
						1 Inside	121	0	SE1	
						2 Inside	114	0	SE1	
						3 Inside	107	0	SE1	
						4 Inside	104	0	SE1	
						5 Inside	116	0	SE1	
	AVG.	**163**			120	**AVG:**	**112**			
	STD. DEV.	**2**				STD. DEV.	**7**			
DFS-55	**105055**	158	> 50%	BRK		1 Outside	126	0	SE1	
P159/ 174		158	> 50%	BRK		2 Outside	120	0	SE1	
		159	> 50%	BRK		3 Outside	102	0	SE1	
		166	> 50%	BRK		4 Outside	105	0	SE1	
		160	> 50%	BRK		5 Outside	109	0	SE1	
						AVG:	**112**			
						STD. DEV.	**10**			
						1 Inside	119	0	SE1	
						2 Inside	118	0	SE1	
						3 Inside	109	0	SE1	
						4 Inside	114	0	SE1	
						5 Inside	113	0	SE1	
	AVG:	**160**			120	**AVG:**	**115**			
	STD. DEV.	**3**				STD. DEV.	**4**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 5.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **9-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Extrusion Weld**
TRI JOB #: **G150563**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 9-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DSX-5	**105056**	147	> 50%	BRK		1 Outside	146	0	SE3	
		148	> 50%	BRK		2 Outside	132	0	SE3	
		146	> 50%	BRK		3 Outside	152	0	SE3	
		144	> 50%	BRK		4 Outside	124	0	SE3	
		143	> 50%	BRK		5 Outside	153	0	SE3	
						AVG:	**141**			
						STD. DEV.	**13**			
						1 Inside	N/A			
						2 Inside				
						3 Inside				
						4 Inside				
						5 Inside				
	AVG.	**146**			120	**AVG:**				
	STD. DEV.	**2**				STD. DEV.				

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 5)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

APPENDIX I
Geomembrane Installation
(Primary Layer)

Section 1
Geomembrane Panel Deployment Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY _____ OTHER _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 8-20-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
PP1	1014	89	287	22.5	6457.5	60	EP	
PP2	1014	89	188	22.5	4230	↓	↓	
PP3	1013	90	138	↓	3105	↓	↓	
PP4	1013	91	326	↓	7335	↓	↓	
PP-5	5057	92	323	↓	7267.5	↓	↓	
PP-6	5057	92	188	↓	4230	↓	↓	
PP-7	4044	93	137	↓	3082.5	↓	↓	
PP-8	4044	93	324	↓	7290	↓	↓	
PP-9	1003	92	326	↓	7335	↓	↓	
PP-10	1003	92	178	↓	4005	↓	↓	
PP-11	3027	91	147	↓	3307.5	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 57,645

DAILY TOTAL (SQ FT): 57,645

ACCUMULATED TOTAL (SQ FT): 57,645

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15
PAGE# 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
12	3027	84	237	22.5	5332.5	60	KL	
13	3027	84	98		2205			
14	4045	84	38		855			
15	3027	85	80		1800			
16	3031	85	120		2700			
17	3031	86	54		1215			
18	4045	86	20		450			
19	3031	86	16		360			
20	4045	86	26		585			
21	4045	87	41		922.5			
22	4045	87	48		1080			
23	4045	87	46	↓	1035	↓	↓	

PAGE APPROX. TOTAL (SQ FT): 18540

DAILY TOTAL (SQ FT): 132,885

ACCUMULATED TOTAL (SQ FT): 190538

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5.21.15
PAGE# 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
24	4045	87	44	22.5	990	60	KL	
25	4045	87	45		1012.5			
26	4045	87	45		1012.5			
27	4045	88	46		1035			
28	4045	88	49		1102.5			
29	3033	88	50		1125			
30	3033	88	51		1147.5			
31	3033	89	52		1170			
32	3033	89	53		1192.5			
33	3033	89	54		1215			
34	3033	89	54		1215			
35	3033	90	53		1192.5			

PAGE APPROX. TOTAL (SQ FT): 13410
DAILY TOTAL (SQ FT): 132885
ACCUMULATED TOTAL (SQ FT): 190530

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15
PAGE# 3

PANEL PP #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
36	1011	90	326	22.5	7335	60	KL	
37	1011	90	183	↓	4117.5	↓	↓	
38	3032	90	141		3172.5			
39	3032	91	322		7245			
40	3032	91	40		900			
41	3028	91	285		6412.5			
42	3028	91	182		4095			
43	4047	92	99		2227.5			
44	4047	92	321		7222.5			
45	4047	91	82		1845			
46	3038	91	239	↓	5377.5	↓	↓	
47	3038	91	265	22.5	5962.5	60	KL	

PAGE APPROX. TOTAL (SQ FT): 55,912.5

DAILY TOTAL (SQ FT): 132,885

ACCUMULATED TOTAL (SQ FT): 190530

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY _____ OTHER _____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15
PAGE# 4

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
48	7090	90	53	225	11925	60	KL	
49	7090	90	308		6930			
50	7090	89	115		25875			
51	7091	89	200		4500			
52	7091	89	163		36675			
53	3030	89	37		832.5			
54	3034	89	313		7042.5			
55	3034	88	148		3330			
56	1005	88	330	↓	7425	↓	↓	
57	1005	88	334	225	7515	60	KL	

PAGE APPROX. TOTAL (SQ FT): 45,022.5
DAILY TOTAL (SQ FT): 132,885
ACCUMULATED TOTAL (SQ FT): 190,530

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15
PAGE# 1 of 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
58	5079	70	253	22.5	5,692.5	60	SMN	
59	6067	70	75	22.5	1,687.5		SMN	
60	6067	72	328	22.5	7,380		SMN	
61	6067	72	107	22.5	2,407.5		SMN	
62	1012	72	226	22.5	5,085		SMN	
63	1012	73	282	22.5	6345		SMN	
64	6068	74	48	22.5	1080		SMN	
65	6068	75	287	22.5	6457.5		SMN	
66	6068	75	131	22.5	2947.5		SMN	
67	6066	75	156	22.5	3510		SMN	
68	6066	75	317	22.5	7132.5		SMN	
69	6066	75	89	22.5	2002.5	↓	SMN	

PAGE APPROX. TOTAL (SQ FT): 51,727.5

DAILY TOTAL (SQ FT): —

ACCUMULATED TOTAL (SQ FT): —

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15
PAGE# 2 OF 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
70	1004	76	99	22.5	2227.5	60	SMN	
71	1004	76	76	22.5	1710.0		SMN	
72	1004	76	26	22.5	585		SMN	
73	1004	76	50	22.5	1125		SMN	
74	1004	76	55	22.5	1237.5		SMN	
75	1004	76	60	22.5	1350		SMN	
76	1004	77	61	22.5	1372.5		SMN	
77	1004	78	62	22.5	1395		SMN	
78	7079	79	62	22.5	1395		SMN	
79	7079	80	63	22.5	1417.5		SMN	
80	7079	80	62	22.5	1395		SMN	
81	7079	80	59	22.5	1327.5	V	SMN	

PAGE APPROX. TOTAL (SQ FT): 16,537.5
DAILY TOTAL (SQ FT): -
ACCUMULATED TOTAL (SQ FT): -

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15
PAGE# 3 OF 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
82	7079	81	59	22.5	1327.5	60	SMN	
83	7079	81	60	22.5	1350	1	SMN	
84	7079	81	60	22.5	1350		SMN	
85	1001	81	59	22.5	1327.5	↓	SMN	

PAGE APPROX. TOTAL (SQ FT): 5355
DAILY TOTAL (SQ FT): 73,620
ACCUMULATED TOTAL (SQ FT): 264,150

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-3-15
PAGE# 1 of 2

PANEL PP #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
86	1001	87	57	22.5	1282.5	60	KL	
87	1001	87	57	22.5	1282.5		KL	
88	1001	86	56	22.5	1260		KL	
89	1001	86	57	22.5	1282.5		KL	
90	1001	86	57	22.5	1282.5		KL	
91	1001	85	58	22.5	1305		KL	
92	1001	84	58	22.5	1305		KL	
93	7082	84	59	22.5	1327.5		KL	
94	7082	84	57	22.5	1282.5		KL	
95	7082	84	58	22.5	1305		KL	
96	7082	84	59	22.5	1327.5		KL	
97	7082	84	58	22.5	1305	V	KL	

PAGE APPROX. TOTAL (SQ FT): 15547.5
DAILY TOTAL (SQ FT): —
ACCUMULATED TOTAL (SQ FT): —

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-3-15
PAGE# 2 of 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
98	7082	84	57	22.5	1282.5	60	KL	
99	7082	84	56	22.5	1260		KL	
100	7082	84	57	22.5	1282.5		KL	
101	4046	84	59	22.5	1327.5		KL	
102	4046	84	62	22.5	1395	↓	KL	

PAGE APPROX. TOTAL (SQ FT): 6547.5
DAILY TOTAL (SQ FT): 22,095
ACCUMULATED TOTAL (SQ FT): 286,245

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15
PAGE# 1 of 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
103	4046	80	51	22.5	1147.5	60	KL	
104	4046	80	163	↓	3667.5	↓	KL	
105	4046	80	209		4702.5		KL	
106	6077	80	24		540		KL	
107	6077	81	239		5377.5		KL	
108	4046	82	46		1035		KL	
109	6069	82	121		2722.5		KL	
110	6077	82	227		5107.5		KL	
111	6069	82	326		7335		KL	
112	6069	84	45		1012.5		KL	
113	7078	84	279		6277.5		KL	
114	7078	85	229	↓	5152.5	↓	KL	

PAGE APPROX. TOTAL (SQ FT): 44,077.5

DAILY TOTAL (SQ FT): —

ACCUMULATED TOTAL (SQ FT): —

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15
PAGE# 2 of 2

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
115	5054	86	85	22.5	1912.5	60	KL	
116	5054	86	280		6300		KL	
117	5054	86	123		2767.5		KL	
118	4043	88	156		3510		KL	
119	4043	88	275		6187.5		KL	
120	4043	88	119		2677.5		KL	
121	4039	90	142		3195		KL	
122	4039	90	261		5872.5		KL	
123	4039	90	136		3060		KL	
124	6070	90	72		1620		KL	
125	6070	90	202	↓	4545	↓	KL	

PAGE APPROX. TOTAL (SQ FT): 41,647.5
DAILY TOTAL (SQ FT): 85,725
ACCUMULATED TOTAL (SQ FT): 371,970

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY ___ SECONDARY X OTHER ___

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-5
PAGE# 1 OF 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
126	6070	88	184	22.5	4140	60	KL	
127	6070	88	59		1327.5		KL	
128	4049	90	99		2227.5		KL	
129	4049	90	129		2902.5		KL	
130	4049	90	117		2632.5		KL	
131	4049	90	110		2475		KL	
132	1001	91	35		787.5		KL	
133	7079	91	41		922.5		KL	
134	7087	91	66		1485		KL	
135	7087	91	67		1507.5		KL	
136	7087	92	65		1462.5		KL	
137	7087	92	66	↓	1485	↓	KL	

PAGE APPROX. TOTAL (SQ FT): 23,355

DAILY TOTAL (SQ FT): —

ACCUMULATED TOTAL (SQ FT): —

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-5-15
PAGE# 2 OF 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
138	7087	88	65	22.5	1462.5	60	KL	
139	7087	85	66	↓	1485		KL	
140	7087	89	64		1440		KL	
141	4050	89	35		787.5		KL	
142	4050	89	59		1327.5		KL	
143	4050	88	60		1350		KL	
144	4050	86	59		1327.5		KL	
145	4050	88	58		1305		KL	
146	4050	88	32		720		KL	
147	4050	88	54		1215		KL	
148	4050	88	55		1237.5		KL	
149	4050	87	55	↓	1237.5	↓	KL	

PAGE APPROX. TOTAL (SQ FT): 14,895

DAILY TOTAL (SQ FT): —

ACCUMULATED TOTAL (SQ FT): —

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6 5
PAGE# 3 of 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
150	4050	87	54	22.5	1215	60	KL	
151	1010	87	121	22.5	2722.5	60	KL	
152	7087	87	35	22.5	787.5	60	KL	
				✓				

PAGE APPROX. TOTAL (SQ FT): 4725
DAILY TOTAL (SQ FT): 42,975
ACCUMULATED TOTAL (SQ FT): 414,945

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-9
PAGE# 1 OF 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
153	3033	82	56	22.5	1260	60	KL	
154	3033	82	25	22.5	562.5		KL	
155	1010	83	176	22.5	3960		KL	
156	7090?	83	22'	22.5	495		KL	
157	1010	83	184	22.5	4140		KL	
158	1010	84	16'	22.5	360		KL	
159	1010	84	20'	22.5	450		KL	
160	5063	84	185	22.5	4162.5		KL	
161	5063	84	235	22.5	5287.5	↓	KL	

PAGE APPROX. TOTAL (SQ FT): 20,677.5

DAILY TOTAL (SQ FT): 20,677.5

ACCUMULATED TOTAL (SQ FT): 435,622.5

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-10
PAGE# 1 OF 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
162	5063	86	66	22.5	1485	60	KL	
163	5062	86	197	22.5	4432.5	60	KL	
164	5062	86	284	22.5	6390	60	KL	

PAGE APPROX. TOTAL (SQ FT): 12,307.5
DAILY TOTAL (SQ FT): 12,307.5
ACCUMULATED TOTAL (SQ FT): 447,930 FT^2

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-13-15
PAGE# 1 of 1

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
165	5062	80	67	22.5	1,507.5	60	KL	
166	4040	80	374	22.5	8,415		KL	
167	5053	81	80	22.5	1,800		KL	
168	7084	81	42	11	462		KL	
169	7084	82	40	12	480		KL	
170	4048	82	27	20	540		KL	
171	4049	82	12	10	120		KL	
172	5053	86	82	22.5	1845		KL	
173	5053	86	80	22.5	1800	√	KL	

PAGE APPROX. TOTAL (SQ FT): 16,969.5
DAILY TOTAL (SQ FT): 16,969.5
ACCUMULATED TOTAL (SQ FT): 464,899.5 ft^2

BRANT ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-2015
PAGE# 1 OF 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
174	5061	77	335	22.5	7538	60	EP	
176	4051	78	172	22.5	3870	60	EP	
175	5061	79	168	22.5	3780	60	EP	
177	4051	80	331	22.5	7,448	60	EP	
178	6076	80	20	22.5	450	60	EP	
179	6076	81	347	22.5	7808	60	EP	
180	6076	81	126	22.5	2,835	60	EP	
181	5060	82	233	22.5	5,243	60	EP	
182	5060	82	264	22.5	5,940	60	EP	
183	6075	83	102	22.5	2295	60	EP	
Prod 184	6075	84	365	22.5	8,213	60	EP	
Slope 185	4042	86	47	22.5	1058	60	EP	

PAGE APPROX. TOTAL (SQ FT): 56,478
DAILY TOTAL (SQ FT): 72,738
ACCUMULATED TOTAL (SQ FT): —

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-2015
PAGE# 2 OF 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
186	4042	87	47	22.5	1058	60	EP	
187	5053	89	46	22.5	1035	60	EP	
188	5053	90	45	22.5	1013	60	EP	
189	5053	91	44	22.5	990	60	EP	
190	5053	91	43	22.5	968	60	EP	
191	4041	96	43	22.5	968	60	EP	
192	4041	96	42	22.5	945	60	EP	
193	4041	97	42	22.5	945	60	EP	
194	4041	97	42	22.5	945	60	EP	
195	4041	97	41	22.5	923	60	EP	
196	4041	96	41	22.5	923	60	EP	
197	4041	96	40	22.5	900	60	EP	

PAGE APPROX. TOTAL (SQ FT): 11,613
DAILY TOTAL (SQ FT): 72,738
ACCUMULATED TOTAL (SQ FT): ~

BRANT NGINEERING, LLC

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY ____ OTHER ____

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-2015
PAGE# 3 OF 3

PANEL #	ROLL #	AMB TEMP	LENGTH APPROX.	WIDTH APPROX.	AREA APPROX.	AVG. THICKNESS (mil)	QA MON.	COMMENTS/PANEL LOCATION SPECIAL SHAPE
198	4041	96	40	22.5	900	60	EP	
199	4041	96	39	22.5	878	60	EP	
200	4041	96	29	22.5	2160	60	EP	
201	6075	96	17	17	289	60	EP	
202	4041	95	20	21	420	60	EP	

PAGE APPROX. TOTAL (SQ FT): 4,647
DAILY TOTAL (SQ FT): 72,738
ACCUMULATED TOTAL (SQ FT): 537,638

Section 2
Geomembrane Trial Seam Log

BRANTLEY EN[illegible]EERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5/20/15 PAGE# 1

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TF-1	1300	84	056	MS	12	850	—	—	INSIDE	107	107	111	107	110	138	133	131	127	125	P	SMN	S/S
									OUTSIDE	107	110	109	108	108								
TF-2	1300	84	059	CH	13	850	—	—	INSIDE	107	104	95	101	98	138	129	138	130	127	P	SMN	S/S
									OUTSIDE	105	101	101	109	101								
TF-3	1300	84	059	CH	11	850	—	—	INSIDE	111	102	101	124	105	138	132	136	132	136	P	SMN	T/T
									OUTSIDE	109	116	104	115	115								
									INSIDE													
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5/21/15 PAGE# 2

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TF-1	800	84	056	LA	10	850	—	—	INSIDE	119	116	117	136	126	132	139	141	136	136	P	SMN	T/T
									OUTSIDE	137	124	129	129	112								
TF-2	830	84	077	SMT	15	850	—	—	INSIDE	106	110	109	113	119	147	146	139	149	147	P	SMN	T/T
									OUTSIDE	118	104	107	115	105								
TX-1	1015	84	836	ST	—	—	470	370	INSIDE	115	115	120	123	127	129	126	133	128	128	P	SMN	S/S
									OUTSIDE	—	—	—	—	—								
TF-3	0730	84	059	CH	13	850	—	—	INSIDE	93	98	97	91	99	132	126	132	129	131	P	SMN	S/S
									OUTSIDE	100	98	99	102	103								
TF-4	0735	84	059	CH	11	850	—	—	INSIDE	116	118	100	124	114	123	122	131	120	127	P	SMN	T/T
									OUTSIDE	117	116	110	99	113								
TF-5	1240	88	056	MS	12	850	—	—	INSIDE	106	106	106	95	107	133	127	122	128	131	P	SMN	S/S
									OUTSIDE	102	97	91	108	103								
TF-6	1245	88	056	MS	10	850	—	—	INSIDE	128	120	122	122	133	126	120	122	129	126	P	SMN	S/S
									OUTSIDE	126	118	113	124	127								
TX-2	1300	88	047	JM	—	—	455	465	INSIDE	124	121	135	130	123	124	121	135	130	123	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
TF-7	1300	88	077	SMT	15	850	—	—	INSIDE	108	112	112	114	120	148	147	150	138	137	P	SMN	T/T
									OUTSIDE	110	105	116	116	112								
									INSIDE													
									OUTSIDE													
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									OUTSIDE													
									INSIDE													
									OUTSIDE													

Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENG[illegible]ERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5/22/15 PAGE# 3

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
Tx-1	0700	80	047	JM	-	-	455	475	INSIDE	118	109	122	133	118	141	133	128	141	144	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
Tx-2	1250	87	047	JM	-	-	485	450	INSIDE	123	116	119	126	118	133	134	128	129	135	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
									INSIDE													
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENG ERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5/26/15 PAGE# 4

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TX-1	0830	78	047	JM	—	—	460	480	INSIDE	84	115	101	104	127	142	132	139	143	143	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
TX-2	1300	89	047	JM	—	—	445	465	INSIDE	104	109	107	109	122	125	130	133	126	129	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
									INSIDE													
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENG ERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5/28/15 PAGE# 5

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TF-1	0700	78	059	RZ	12	850	—	—	INSIDE	113	126	111	120	119	148	150	157	181	152	P	SMN	S/S
									OUTSIDE	124	130	129	125	127								
TF-2	0700	80	056	MS	10	850	—	—	INSIDE	115	114	103	131	104	139	132	140	150	133	P	SMN	T/T
									OUTSIDE	119	128	134	129	125								
TF-3	0735	80	059	RZ	11	850	—	—	INSIDE	120	125	132	134	130	131	143	141	146	140	P	SMN	T/T
									OUTSIDE	123	131	114	139	139								
TF-4	0800	80	056	MS	11	850	—	—	INSIDE	106	112	115	130	120	140	146	143	149	145	P	SMN	S/S
									OUTSIDE	108	104	111	115	121								
TX-1	1240	82	047	JM	—	—	470	450	INSIDE	118	119	117	118	118	131	131	134	137	131	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
TF-5	1240	82	056	MS	12	850	—	—	INSIDE	107	109	108	115	108	140	136	133	144	138	P	SMN	S/S
									OUTSIDE	105	102	102	113	113								
TF-6	1240	82	059	RZ	11	850	—	—	INSIDE	127	125	116	125	123	150	144	143	140	144	P	SMN	T/T
									OUTSIDE	124	125	119	125	121								
TF-7	1240	82	056	MS	10	850	—	—	INSIDE	113	115	115	107	116	145	140	136	139	136	P	SMN	T/T
									OUTSIDE	118	123	106	117	121								
TF-8	1240	82	059	RZ	12	850	—	—	INSIDE	103	102	107	106	103	148	143	145	149	144	P	SMN	S/S
									OUTSIDE	109	116	111	110	107								
TX-2	1450	85	037	OY	—	—	450	450	INSIDE	118	117	123	122	120	141	130	131	136	126	P	SMN	S/T
									OUTSIDE	—	—	—	—	—								
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									OUTSIDE													

Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENG ERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5/29/15 PAGE# 6

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TX-1	0700	75	037	OY	—	—	450	470	INSIDE	139	111	92	96	142	149	147	146	143	150	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
TX-2	1250	86	037	OY	—	—	460	400	INSIDE	127	123	127	125	125	131	137	134	136	133	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
									INSIDE													
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENG ERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/3/15 PAGE# 7

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
TF-1	1430	88	059	RZ	12	500	—	—	INSIDE	106	108	126	105	113	139	137	141	139	140	P	SMN
									OUTSIDE	110	107	114	115	121							
									INSIDE												
									OUTSIDE												
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/4/15 PAGE# 8

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TF-1	652	80	104	JP	6	850	—	—	INSIDE	129	133	115	123	122	166	154	158	155	154	P	SMN	T/T
									OUTSIDE	130	128	134	124	131								
TF-2	0754	80	D59	RZ	12	850	—	—	INSIDE	107	113	114	110	118	147	144	143	149	145	P	SMN	S/S
									OUTSIDE	121	128	114	128	118								
TF-3	0800	80	059	RZ	12	850	—	—	INSIDE	113	128	117	123	128	133	138	137	134	138	P	SMN	T/T
									OUTSIDE	140	131	138	125	122								
TF-4	0830	80	056	JM	12	850	—	—	INSIDE	113	104	108	115	110	162	146	146	153	145	P	SMN	S/S
									OUTSIDE	115	105	110	114	103								
TF-5	0845	80	056	JM	11	850	—	—	INSIDE	114	118	119	111	115	149	144	140	145	149	P	SMN	T/T
									OUTSIDE	111	124	119	120	120								
TF-6	1239	90	059	RZ	11	850	—	—	INSIDE	116	122	117	120	114	122	132	123	132	121	P	SMN	T/T
									OUTSIDE	119	122	118	117	122								
TF-7	1240	90	059	RZ	12	850	—	—	INSIDE	99	97	98	109	104	138	137	138	137	150	P	SMN	S/S
									OUTSIDE	101	98	102	106	105								
TF-8	1300	90	056	JM	12	850	—	—	INSIDE	121	118	128	126	120	123	120	129	127	135	P	SMN	S/S
									OUTSIDE	123	116	126	124	131								
TF-9	1307	90	056	JM	13	850	—	—	INSIDE	95	103	102	96	99	124	132	128	139	129	P	SMN	S/S
									OUTSIDE	97	99	102	99	98								
									INSIDE													
									OUTSIDE													
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY EN[illegible]EERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/5/15 PAGE# 9

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TX-1	0700	70	047	JM	—	—	480	460	INSIDE	120	104	116	120	116	148	148	145	147	150	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
TF-1	0706	70	059	RZ	12	850	—	—	INSIDE	107	121	107	109	99	152	162	162	161	163	P	SMN	S/S
									OUTSIDE	114	125	109	121	106								
TF-2	0712	70	056	JM	13	850	—	—	INSIDE	111	122	102	121	105	155	154	148	163	153	P	SMN	S/S
									OUTSIDE	105	103	105	108	112								
TF-3	0717	70	056	JM	12	850	—	—	INSIDE	113	102	112	125	112	148	146	151	155	149	P	SMN	T/T
									OUTSIDE	115	114	126	119	132								
TF-4	0724	74	059	RZ	11	850	—	—	INSIDE	138	127	115	129	120	163	159	160	162	163	P	SMN	T/T
									OUTSIDE	125	118	119	119	116								
TX-2	1148	80	037	OY	—	—	450	350	INSIDE	136	134	138	145	144	163	152	162	150	153	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
TF-5	1246	80	059	RZ	12	850	—	—	INSIDE	110	115	113	111	116	145	139	146	138	135	P	SMN	S/S
									OUTSIDE	118	115	118	117	114								
TX-3	1300	80	037	JM	—	—	445	420	INSIDE	137	139	158	149	127	145	150	151	150	150	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
									INSIDE													
									OUTSIDE													
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									INSIDE													
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/6/15 PAGE# 10

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TF-1	1320	80	059	R2	11	850	–	–	INSIDE	123	119	126	119	118	153	144	150	147	146	P	SMN	T/T
									OUTSIDE	916	122	121	116	110								
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/8/15 PAGE# 11

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
Tx1	1500	90	037	JM	–	–	460	430	INSIDE	93	115	113	106	101	142	140	143	142	134	P	5MN T/T
									OUTSIDE	–	–	–	–	–							
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/9/15 PAGE# 12

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
TF-1	0900	80	059	RZ	12	850	—	—	INSIDE	112	115	112	122	117	161	161	161	162	155	P	SMN	S/S
									OUTSIDE	114	108	119	113	109								
TF-2	0906	80	059	RZ	11	850	—	—	INSIDE	118	124	126	134	130	132	134	138	141	136	P	SMN	T/T
									OUTSIDE	106	135	114	121	124								
TX-1	1026	85	047	JP	—	—	450	450	INSIDE	117	109	121	122	121	149	138	137	141	141	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
TF-3	1300	88	059	RZ	12	850	—	—	INSIDE	117	112	113	114	115	149	139	150	150	151	P	SMN	T/T
									OUTSIDE	111	119	116	116	117								
									INSIDE													
									OUTSIDE													
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									OUTSIDE													

Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/10/15 PAGE# 13

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
Tx-1	0745	78	047	JP	—	—	450	440	INSIDE	104	100	100	103	100	127	137	140	138	138	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
TF-1	0800	78	059	RZ	12	850	—	—	INSIDE	106	113	118	110	113	148	150	155	157	152	P	SMN	S/S
									OUTSIDE	111	117	122	120	115								
TF-2	0807	78	059	RZ	11	850	—	—	INSIDE	134	133	137	131	132	140	154	147	159	143	P	SMN	T/T
									OUTSIDE	119	126	129	132	125								
Tx-2	1120	88	037	JM	—	—	460	420	INSIDE	129	119	118	122	120	139	141	135	149	142	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
									INSIDE													
									OUTSIDE													
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									OUTSIDE													

Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: ✓
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/11/15 PAGE# 14

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.	
Tx-1	0700	70	037	JM	—	—	460	420	INSIDE	84	98	84	102	84	150	152	154	157	127	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
Tx-2	0705	70	047	ER	—	—	450	450	INSIDE	90	95	100	87	98	139	145	150	148	144	P	SMN	T/T
									OUTSIDE	—	—	—	—	—								
									INSIDE													
									OUTSIDE													
									INSIDE													
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Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY EI[illegible]NEERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: _____
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-13-15 PAGE# 15

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
S/T TF-1	1:29	77	059	RZ	11	850	–	–	INSIDE	113	100	103	111	111	140	145	133	149	135	P	KL
									OUTSIDE	110	111	103	110	100							
S/S TF-2	1:37	77	"	RZ	12	850	–	–	INSIDE	122	119	117	113	125	157	147	155	156	161	P	KL
									OUTSIDE	120	118	120	118	112							
T/T TF-3	7:44	77	"	RZ	11	850	–	–	INSIDE	135	114	115	126	128	154	144	162	148	148	P	KL
									OUTSIDE	134	122	126	129	123							
S/T TF-4	1:300	80	"	RZ	11	850	–	–	INSIDE	117	111	119	122	109	149	139	140	150	147	P	KL
									OUTSIDE	117	115	120	118	112							
S/S TF5	1:50	80	"	RZ	12	850	–	–	INSIDE	115	119	126	109	120	146	137	140	144	139	P	KL
									OUTSIDE	119	123	112	115	117							
									INSIDE												
									OUTSIDE												
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									OUTSIDE												
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									OUTSIDE												

Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

BRANTLEY ENG[illegible]ERING, LLC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-2015 PAGE# 16

TF/TX ID #	Time	AMB TEMP.	MACH. ID #	WELD TECH	FUSION WELD SPEED	FUSION WELD WEDGE SET	EXTRUSION WELD PRE HEAT	EXTRUSION WELD BARREL SET		PEEL VALUE lbs/inch					SHEER VALUE lbs/inch					P/F	QA MON.
S-S TF-1	0900	77	A056	MS	12	850	—	—	INSIDE	109	106	109	120	110	145	151	148	156	154	P	BP
									OUTSIDE	102	123	112	110	120							
S/T TF-2	0707	78	A056	MS	10	850	—	—	INSIDE	123	121	129	136	123	145	146	149	148	150	P	BP
									OUTSIDE	120	121	119	134	130							
S-S TF-3	0900	80	A059	RZ	12	850	—	—	INSIDE	99	107	106	106	102	141	139	147	147	139	P	BP
									OUTSIDE	111	102	101	109	94							
S-T TF-4	0820	80	A059	RZ	11	850	—	—	INSIDE	128	133	113	127	117	125	130	128	132	132	P	BP
									OUTSIDE	116	126	111	122	121							
T/T TF-5	1250	94	056	MS	10	850	—	—	INSIDE	138	128	133	138	139	139	142	160	147	145	P	KL
									OUTSIDE	104	99	110	105	104							
S/S TF-6	1245	94	056	MS	12	850	—	—	INSIDE	126	120	131	129	133	136	140	133	132	138	P	KL
									OUTSIDE	110	120	107	109	103							
S/S TF-7	1240	94	059	RZ	12	850	—	—	INSIDE	114	112	123	121	113	137	128	137	130	133	P	KL
									OUTSIDE	115	109	111	122	119							
S/T TF-8	1304	96	059	RZ	11	850	—	—	INSIDE	108	112	120	117	105	132	132	147	141	147	P	KL
									OUTSIDE	121	107	117	108	120							
									INSIDE												
									OUTSIDE												
									INSIDE												
									OUTSIDE												
									INSIDE												
									OUTSIDE												
									INSIDE												
									OUTSIDE												
									INSIDE												
									OUTSIDE												

Passing Peel Fusion (91 lb/in): _____ Passing Peel Extrusion (78 lb/in): _____ Passing Shear Fusion (120 lb/in): _____ Passing Shear Extrusion (120 lb/in): _____

Section 3
Geomembrane Fusion Seaming Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-20-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	1300	CH
TF-3	1300	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 0 Mileage: 0

PAGE NUMBER: 1

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
1 Tie in	NEOS	SEOS	130	89	CH	11	850	850	22	22		EP		5-20	KL
3 Tie in	NEOS	SEOS	140	89	CH	11			22	44				5-20	KL
1-3	WEOS	EEOS	150	90	CH	13			138	182				5-20	KL
1-2	WEOS	EEOS	205	91	CH	13			179	361				5-20	KL
5 Tie in	NEOS	SEOS	215	92	CH	11			22	383				5-20	KL
4-5	WEOS	EEOS	230	92	CH	13			324	222	485	EP	DFP-1	5-20	KL
8 Tie in	NEOS	SEOS	325	92	CH	11			22	244				5-20	KL
7-8	WEOS	EEOS	330	93	CH	13			135	379				5-20	KL
6-8	WEOS	EEOS	339	93	CH	13			187	81	485	EP	DFP-2	5-20	KL
11 Tie in	NEOS	SEOS	352	92	CH	11			22	103				5-20	KL
9-11	WEOS	EEOS	358	92	CH	13			144	247				5-20	KL
9-10	WEOS	EEOS	410	91	CH	13			176	423				5-20	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 1393

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 423

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 6-12-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	0730	CH
TF-4	0735	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 1 Mileage: 423

PAGE NUMBER: 2

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
12-13	WEOS SEOS	755	83	CH	13	850	850	45	33	485	BP	DFP-6	5-21	KL
12-14		802	83		13			38	71				5-21	KL
12-15		805	83		13			60	131				5-21	KL
17-18		820	84		13			28	159				5-22	KL
18-19	WEOS SEOS	825	84		11			13	172				5-21	KL
19-20	WEOS SEOS	828	84		11			19	191				5-21	KL
20-21		835	85		13			33	224				5-21	KL
21-22		840	85		13			49	273				5-21	KL
22-23		850	86		13			48	321				5-21	KL
23-24		855	86		13			44	365				5-21	KL
24-25		902	87		13			44	409				5-21	KL
25-26		913	87		11			45	454				5-21	KL
26-27		920	88		13			45	14	487	BP	DFP-7	5-21	KL
27-28	↓	925	88	↓	13	↓	↓	47	61				5-21	KL
28-29	WEOS SEOS	932	88	CH	13	850		50	111				5-21	KL

PAGE TOTAL: 658

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 111

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 6-12-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	0730	CH
TF-4	0735	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 2 Mileage: 111

PAGE NUMBER: 3

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
29, 30	WEOS	EEOS	9:38	88	CH	13	850°	850°	51	162		KL		5-22	KL
30, 31	WEOS	EEOS	945	88		13			52	214				5-21	KL
16, 24	WEOS	EEOS	1042	89		11			22	236				5-21	KL
16, 25	WEOS	EEOS	1044	90					22	258				5-21	KL
14, 26	WEOS	EEOS	1047	90					12	270				5-21	KL
15, 26	WEOS	EEOS	1049	90					10	280				5-21	KL
15, 27	WEOS	EEOS	1051	91					22	302				5-21	KL
15, 28	WEOS	EEOS	1054	91					22	324				5-21	KL
12, 29	WEOS	EEOS	1057	91					22	346				5-21	KL
12, 30	WEOS	EEOS	1059	92					22	368				5-21	KL
12, 31	WEOS	EEOS	1103	92					22	390				5-21	KL
1, 33	WEOS	EEOS	1105	92					22	412				5-21	KL
1, 34	WEOS	EEOS	1107	93					22	434				5-21	KL
1, 35	WEOS	EEOS	1142	93					22	456				5-21	KL
2, 35	WEOS	EEOS	1144	93					22	478				5-21	KL

PAGE TOTAL: 367

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 478

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	0730	CH
TF-4	0735	CH

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 3 Mileage: 478

PAGE NUMBER: 4

SEAM NUMBER	SEAM SECTION START POINT *	FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
39 Tie In	NEOS	SEOS	1146	89	CH	11	850	850	22	15	485	EP	DFP-12	5-21	KL
38 Tie In	NEOS	SEOS	1149	89	CH	11	850	850	22	37		EP		5-21	KL
36 TIE IN	NEOS	SEOS	1150	89	CH	11	850	850	22	59		EP		5-22	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 66

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 59

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0700	RZ
TF-3	0735	RZ
TF-6	1240	RZ
TF-8	1240	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 4 Mileage: 59

PAGE NUMBER: 5

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
57,59	WEOS EEOS	8:35		RZ	12	850	850	75	134		KL		5-28	KL
57,58	WEOS EEOS	9:42						243	2160	159	KL	DFP-20	5-28	KL
60,62	NEOS SEOS	9:25						22	240		KL		5-28	KL
60,EX.	NEOS SEOS	9:37						22	262		KL		5-28	KL
60,62	WEOS EEOS	9:40						226	3	485	KL	DFP 22	5-28	KL
60,61	WEOS EEOS	9:57						107	110		KL		5-28	KL
64,EX	NEOS SEOS	10:20						22	132		KL		5-28	KL
64,65	WEOS EEOS	10:26						42	174		KL		5-28	KL
63,65	WEOS EEOS	10:32						282	456		KL		5-28	KL
67,EX	NEOS SEOS	11:08						22	3	475	KL	DFP-25	5-28	KL
67,68	WEOS EEOS	11:12						188	141		KL		5-28	KL
70,EX	NEOS SEOS	11:48						22	213		KL		5-28	KL
70,71	WEOS EEOS	12:55						76	289		KL		5-28	KL
75,76	NEOS SEOS	13:02						54	343		KL		5-28	KL
74,75	NEOS SEOS	13:12		↓	↓	↓	↓	55	398		KL		5-28	KL

PAGE TOTAL: 1458

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 398

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0700	RZ
TF-3	0735	RZ
TF-6	1240	RZ
TF-8	1240	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 5 Mileage: 398

PAGE NUMBER: 6

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
73,74	NEOS SEOS	1378		RZ	12	850	850	50	448		KL		5-28	KL
71,72	WEOS EEOS	1336						21	469		KL		5-28	KL
84,86	NEOS SEOS	1348						61	45	485	KL	DEP-27	5-29	KL
83,84	NEOS SEOS	1402						63	108		KL		5-29	KL
66,85	EEOS WEOS	1450						16	124		KL		5-29	KL
68,85	EEOS WEOS	1462						7	131		KL		5-29	KL
68,84	EEOS WEOS	1453						22	153		KL		5-29	KL
68,83	EEOS WEOS	1454						22	175		KL		5-29	KL
68,82	EEOS WEOS	1456						22	197		KL		5-29	KL
68,81	EEOS WEOS	1458						22	219		KL		5-29	KL
68,80	EEOS WEOS	1500						6	225		KL		5-29	KL
69,80	EEOS WEOS	1501						17	242		KL		5-29	KL
69,79	EEOS WEOS	1502						22	264		KL		5-29	KL
69,78	EEOS WEOS	1504						22	286		KL		5-29	KL
69,77	EEOS WEOS	1506		↓	↓	↓	↓	22	308		KL		5-29	KL

PAGE TOTAL: 395

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 308

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY)EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0700	RZ
TF-3	0735	RZ
TF-6	1240	RZ
TF-8	1240	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 6 Mileage: 308

PAGE NUMBER: 7

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
70,76	EEOS WEOS	1509		RZ	11	850	850	22	330		KL		5-28	KL
71,75	EEOS WEOS	1510			11			22	352		KL		5-28	KL
71,74	EEOS WEOS	1512			11			23	375		KL		5-28	KL
72,73	EEOS WEOS	1514			11			27	402		KL		5-28	KL
73,EX	NEOS SEOS	1545			11			25	427		KL		5-28	KL
72,EX	NEOS SEOS	1547			11			15	439		KL		5-28	KL
71,EX	NEOS SEOS	1549		↓	11	↓	↓	22	464		KL		5-28	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 156

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 464

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLE[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-3-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1430	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 7 Mileage: 464

PAGE NUMBER: 8

PP #s SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
35,86	SEOS	NEOS	1520		RZ	12	850	850	56	45	475	KL	DFP-28	6-4	KL
86,87	SEOS	NEOS	1528						55	100		KL		6-4	KL
87,88	SEOS	NEOS	1536						55	155		KL		6-4	KL
88,89	SEOS	NEOS	1544						55	210		KL		6-4	KL
89,90	SEOS	NEOS	1550						58	268		KL		6-4	KL
90,91	SEOS	NEOS	1556						57	325		KL		6-4	KL
91,92	SEOS	NEOS	1603						54	379		KL		6-4	KL
92,93	NEOS	SEOS	1613						56	435		KL		6-4	KL
93,94	NEOS	SEOS	1620						56	491	450	KL	DFP-29	6-4	KL
94,95	NEOS	SEOS	1628						55	96		KL		6-4	KL
95,96	NEOS	SEOS	1635						56	152		KL		6-4	KL
96,97	NEOS	SEOS	1640						55	207		KL		6-4	KL
97,98	NEOS	SEOS	1648						55	262		KL		6-4	KL
98,99	NEOS	SEOS	1656						58	320		KL		6-4	KL
99,100	NEOS	SEOS	1705		↓	↓	↓	↓	58	378		KL		6-4	KL

PAGE TOTAL: 839

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 378

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-3-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # AD59

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1430	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 8 Mileage: 378

PAGE NUMBER: 9

SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
100,101	NEOS	SEOS	1710		RZ	12	850	850	58	436		KL		6-4	KL
101,102	NEOS	SEOS	1715		RZ	12	850	850	60	46	450	KL	DEP.30	6-4	KL

PAGE TOTAL: 118

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 46

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15

LAYER:	
PRIMARY	K
SECONDARY	
OTHER	

MACHINE # AD59

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0754	RZ
TF-3	0800	RZ
TF-6	1239	RZ
TF-7	1240	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 9 Mileage: 46

PAGE NUMBER: 10

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
103, 104	NEOS EEOS	8[illegible]	83	RZ	12	850	850	68	114		KL		6-4	KL
2, 103	NEOS SEOS	907	83					22	136		KL		6-4	KL
4, 104	NEOS SEOS	9:15	83					22	158		KL		6-4	KL
105, 106	NEOS SEOS	9:22	83					22	180		KL		6-4	KL
104, 106	NEOS EEOS	9:28	83					26	206		KL		6-4	KL
104, 106	NEOS EEOS	9:30	83					131	337		KL		6-4	KL
85, 106	NEOS SEOS	9:50	83					22	359		KL		6-4	KL
106, 107	NEOS EEOS	9 55	83					23	382		KL		6-4	KL
105, 107	NEOS EEOS	950	84					221	153	450	KL	DFP-31	6-4	KL
107, 108	NEOS SEOS	1020	84					22	175		KL		6-4	KL
6, 107	NEOS EEOS	1028	84					22	197		KL		6-4	KL
107, 109	NEOS EEOS	1035	84					120	317		KL		6-4	KL
107, 110	NEOS SEOS	1052	84					119	436		KL		6-4	KL
108, 110	NEOS EEOS	11:07	84					69	55	450	KL	DFP-33	6-4	KL
8, 109	NEOS SEOS	11:10	84	↓	↓	↓	↓	22	77				6-4	KL

PAGE TOTAL: 931

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 77

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15

LAYER:

PRIMARY	K
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0754	RZ
TF-3	0800	RZ
TF-6	1239	RZ
TF-7	1240	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 10 Mileage: 77

PAGE NUMBER: 11

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
111, 112	WEOS EEOS	11:15	84	RZ	12	850	850	278	355				6-4	KL
111, 112	EEOS WEOS	11 37	85	"	"	"	"	48	403				6-4	KL
114, 115	SEOS NEOS	1255	86	"	"	"	"	22	425				6-4	KL
113, 115	WEOS EEOS	1300	86	"	"	"	"	87	62	450		DFP-34	6-4	KL
113, 114	WEOS EEOS	1309	86	"	"	"	"	190	252				6-4	KL
36, 115	NEOS SEOS	1340		"	"	"	"	22	274				6-4	KL
115, 116	WEOS EEOS	1346		"	"	"	"	82	356				6-4	KL
114, 116	WEOS EEOS	1352		"	"	"	"	213	119	450		DFP-35	6-4	KL
117, 118	NEOS SEOS	1419		"	"	"	"	22	141				6-4	KL
116, 118	WEOS EEOS	1424		"	"	"	"	156	297				6-4	KL
116, 117	WEOS EEOS	1432		"	"	"	"	123	420				6-4	KL
120, 121	NEOS SEOS	1512		"	"	"	"	22	442				6-4	KL
119, 120	WEOS EEOS	1507		"	"	"	"	142	134	450		DFP-38	6-4	KL
119, 120	WEOS EEOS	1521		"	"	"	"	98	232				6-4	KL
42, 121	NEOS SEOS	1545		↓	↓	↓	↓	22	254				6-4	KL

PAGE TOTAL: 1527

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 254

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY L[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0754	RZ
TF-3	0800	RZ
TF-6	1239	RZ
TF-7	1240	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER
FROM
Page # 11 Mileage: 254

PAGE NUMBER: 12

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
40, 119	NEOS	SEOS	1547	85	RZ	12	850	850	22	276		KL		6-4	KL
122, 124	WEOS	EEOS	1556	85	"	"	"	"	72	348		KL		6-4	KL
122, 123	WEOS	EEOS	1603	85	"	"	"	"	136	34	450	KL	DFP-39	6-4	KL
37, 116	NEOS	SEOS	1600	86	"	"	"	"	22	56		KL		6-4	KL
39, 118	NEOS	SEOS	1607	86	"	"	"	"	22	78		KL		6-4	KL

PAGE TOTAL: 274

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 78

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY L[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-5-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0706	RZ
TF-4	0726	RZ
TF-5	1246	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 12 Mileage: 78

PAGE NUMBER: 13

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
125,126	WEOS & EEOS	740		RZ	12	85½	850	172	250		KL		6-5	KL
126,128	WEOS EEOS	800		RZ				99	349		KL		6-5	KL
126,127	WEOS EEOS	9:08		RZ				59	409		KL		6-5	KL
52,129	NEOS SEOS	843		RZ				22	430		KL		6-5	KL
50,128	NEOS SEOS	845						22	2	450	KL	DEP-41	6-6	KL
49,126	NEOS SEOS	847						22	24		KL		6-5	KL
132,133	NEOS SEOS	900						22	46		KL		6-5	KL
55,131	NEOS SEOS	9:30						22	68		KL		6-5	KL
54,130	NEOS SEOS	9:32						22	90		KL		6-5	KL
131,133	WEOS EEOS	9:38						41	131		KL		6-5	KL
131,132	NEOS SEOS	943						35	166		KL		6-5	KL
134,135	SEOS NEOS	1052						6	172		KL		6-5	KL
135,136	SEOS NEOS	1056						66	238		KL		6-5	KL
136,137	SEOS NEOS	1106						67	304		KL		6-5	KL
137,138	SEOS NEOS	1115		↓	↓	↓	↓	66	370		KL		6-5	KL

PAGE TOTAL: 803

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 370

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-5-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0706	RZ
TF-4	0726	RZ
TF-5	1246	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 13 Mileage: 370

PAGE NUMBER: 14

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
138,139	SEOS	NEOS	1126	85	RZ	12	850	850	63	433		KL		6-6	KL
139,140	SEOS	NEOS	1134	85	RZ				60	43	450	KL	DFP-43	6-6	KL
141,142	SEOS	NEOS	1310	85	RZ				34	77		KL		6-6	KL
140,142	SEOS	NEOS	1315	85	RZ				26	103		KL		6-6	KL
140,141	SEOS	NEOS	1317	87	RZ				34	137		KL		6-6	KL
142,143	WEOS	EEOS	1325	87	RZ				59	196		KL		6-6	KL
143,144	WEOS	EEOS	1338	87	RZ				59	255		KL		6-6	KL
144,145	WEOS	EEOS	1340	87	RZ				60	315		KL		6-6	KL
146,147	WEOS	EEOS	1405	89	RZ				32	347		KL		6-6	KL
145,147	WEOS	EEOS	1415	89	RZ				24	371		KL		6-6	KL
145,146	WEOS	EEOS	1416	89	RZ				33	404		KL		6-6	KL
147,148	SEOS	NEOS	1423	89	RZ				54	8	450	KL	DFP-44	6-6	KL
148,149	WEOS	EEOS	1450	89	RZ				54	62		KL		6-6	KL
149,150	WEOS	EEOS	1500	89	RZ				55	117		KL		6-6	KL
150,151	WEOS	EEOS	1530	89	RZ	✓	✓	✓	22	139		KL		6-6	KL

PAGE TOTAL: 669

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 139

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-5-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0706	RZ
TF-4	0726	RZ
TF-5	1246	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 14 Mileage: 139

PAGE NUMBER: 15

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
149, 151	SEOS NEOS	1532		RZ	11	8560	8517	22	161		KL		6-6	KL
148, 151	SEOS NEOS	1534		RZ				22	183		KL		6-6	KL
147, 151	SEOS NEOS	1536		RZ				22	205		KL		6-6	KL
145, 151	EEOS NEOS	1538						22	227		KL		6-6	KL
144, 151	EEOS NEOS	1540						11	238		KL		6-6	KL
151, 152	EOS WEOS	1552						10	248		KL		6-6	KL
144, 152	EEOS WEOS	16:07						14	262		KL		6-6	KL
143, 152	SEOS NEOS	1609		↓	↓	↓	↓	22	284		KL		6-6	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 145

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 284

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-9-15

LAYER:	
PRIMARY	✓
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0900	RZ
TF-2	0906	RZ
TF-3	1300	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 15 Mileage: 284

PAGE NUMBER: 16

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
153,153	WEOS EEOS	916		RZ	12	850	850	39	323		KL		6-9	KL
132,153	WEOS EEOS	920						28	351		KL		6-9	KL
60,153	NEOS SEOS	930						8	359		KL		6-9	KL
58,153	NEOS SEOS	931						19	377		KL		6-9	KL
153,154	WEOS EEOS	935						50	427		KL		6-9	KL
60,154	NEOS SEOS	1300						22	449		KL		6-9	KL
151,155	EEOS WEOS	1452						112	101	4610	KL	DFP-45	6-10	KL
152,155	EEOS WEOS	1500						37	138		KL		6-10	KL
156,157	WEOS EEOS	1510						22	160		KL		6-10	KL
155,157	SEOS NEOS	1515						183	343		KL		6-10	KL
155,156	SEOS NEOS	1531						7	350		KL		6-10	KL
159,159	WEOS EEOS	1535						22	372		KL		6-10	KL
159,160	WEOS EEOS	1542						22	394		KL		6-10	KL
157,160	SEOS NEOS	1602						179	123	450	KL	DFP-46	6-10	KL
156,160	SEOS NEOS	1602		↓	↓	↓	↓	6	129		KL	CAPPED BY TR 287		KL

PAGE TOTAL: 756

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 129

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-9-15

LAYER:

PRIMARY	✓
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0900	RZ
TF-2	0906	RZ
TF-3	1300	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 16 Mileage: 129

PAGE NUMBER: 17

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
160, 161	SEOS NEOS	1610		RZ	12	850	850	193	322		KL		6-10	KL
159, 161	SEOS NEOS	1625		↓	↓	↓	↓	12	334		KL		6-10	KL
158, 161	SEOS NEOS	1626		↓	↓	↓	↓	25	359		KL		6-10	KL
156, 157	SEOS NEOS	1603		↓	↓	↓	↓	12	371		KL		6-10	KL
156, 158	SEOS NEOS	1608		RZ	12	850	850	3	374		KL		CAPPED BY R289	KL

PAGE TOTAL: 245

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 374

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-10-15

LAYER:	
PRIMARY	✓
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0800	RZ
TF-2	0807	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 17 Mileage: 374

PAGE NUMBER: 18

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
161, 163	SEOS	NEOS	830		RZ	12	850	850	197	121	450	KL	DFP 47	6-10	KL
161, 162	SEOS	NEOS	845						66	187		KL		6-10	KL
162, 163	SEOS	WEOS	852						22	209		KL		6-10	KL
163, 164	SEOS	NEOS	9:00						194	403		KL		6-10	KL
162, 164	SEOS	NEOS	914						68	21	460	KL	DFP-48	6-10	KL
142, 155	SEOS	WEOS	1000						5	26		KL		6-10	KL
140, 155	SEOS	WEOS	1001						22	48		KL		6-10	KL
139, 155	SEOS	WEOS	1002						4	52		KL		CAPPED	KL
139, 156	SEOS	WEOS	1003						18	70		KL		6-10	KL
138, 156	SEOS	WEOS	1005						10	80		KL		6-10	KL
138, 158	SEOS	WEOS	1006						12	92		KL		6-10	KL
137, 158	SEOS	WEOS	1007						16	108		KL		6-10	KL
137, 161	SEOS	WEOS	1008						6	114		KL		6-10	KL
136, 161	SEOS	WEOS	1009						19	133		KL		6-10	KL
135, 162	SEOS	WEOS	1010		↓	↓	↓	↓	22	155		KL		6-10	KL

BY R285

PAGE TOTAL: 681

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 155

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6/10/15

LAYER:

PRIMARY	✓
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0800	RZ
TF-2	0807	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 180 Mileage: 155

PAGE NUMBER: 19

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
134, 164	EOS	WEDGE	1030		RZ	12	850	850	22	177		KL		6-10	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 22

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 177

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-13-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	7:29	RZ
TF-2	7:37	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 19 Mileage: 177

PAGE NUMBER: 20

SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
153, 166	NEOS	SEOS	740	79	RZ	12	950	950	22	199		KL		6-13	KL
132, 166	NEOS	SEOS	742	79					22	221		KL		6-13	KL
131, 166	NEOS	SEOS	744	80					22	243		KL		6-13	KL
130, 166	NEOS	SEOS	746	80					22	265		KL		6-13	KL
129, 166	NEOS	SEOS	748	80					22	287		KL		6-13	KL
127, 166	NEOS	SEOS	750	81					22	309		KL		6-13	KL
126, 166	NEOS	SEOS	752	81					22	331		KL		6-13	KL
125, 166	NEOS	SEOS	754	81					22	353		KL		6-13	KL
123, 166	NEOS	SEOS	756	82					22	375		KL		6-13	KL
122, 166	NEOS	SEOS	758	82					22	397		KL		6-13	KL
120, 166	NEOS	SEOS	8:00	82					22	419		KL		6-13	KL
119, 166	NEOS	SEOS	8:02	82					22	441		KL		6-13	KL
117, 166	NEOS	SEOS	804	83					22	13	460	KL	DFP-49	6-13	KL
116, 166	NEOS	SEOS	806	83					22	35		KL		6-13	KL
114, 166	NEOS	SEOS	808	83	↓	↓	↓	↓	22	57		KL		6-13	KL

PAGE TOTAL: 330

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 57 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY L[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-13-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	725	RZ
TF-2	737	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 20 Mileage: 57

PAGE NUMBER: 21

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
112,166	NEOS	SEOS	8:10	83	RZ	12	850	850	22	79		KL		6-13	KL
111,166	NEOS	SEOS	8:12	83					22	101		KL		6-13	KL
110,166	NEOS	SEOS	8:14	83					10	111		KL		6-13	KL
102,166	NEOS	SEOS	8:16	83					58	169		KL		6-13	KL
164,166	SEOS	NEOS	8:20	84					104	273		KL		6-13	KL
166,167	EEOS	WEOS	8:31	84					22	295		KL		6-13	KL
165,168	SEOS	NEOS	8:34	84					8	303		KL		6-13	KL
164,165	SEOS	NEOS	8:40	84					61	364		KL		6-13	KL
165,166	SEOS	NEOS	9:04	86					56	420		KL		6-13	KL
168,169	EEOS	WEOS	1000	84					8	428		KL		6-13	KL
164,168	SEOS	NEOS	1005	90					38	466		KL		6-13	KL
164,169	SEOS	NEOS	1008	90					38	14	490	KL	DFP-50	6-13	KL
167,169	SEOS	NEOS	1018	90					40	54		KL		6-13	KL
167,169	SEOS	NEOS	1020	90					41	95		KL		6-13	KL
170,171	EEOS	WEOS	1045	98	↓	↓	↓	↓	17	112		KL		6-13	KL

PAGE TOTAL: 545

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 112 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-16-15

BRANTLEY L[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-13-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	7:29	RZ
TF-2	7:37	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 21 Mileage: 112

PAGE NUMBER: 22

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
167,171	SEOS	NEOS	1055	92	RZ	12	850	850	14	126		KL		6-13	KL
167,170	SEOS	NEOS	1057	93	↓	↓	↓	↓	26	152		KL		6-13	KL
154,170	SEOS	NEOS	11:00	93					30	182		KL		6-13	KL
63,171	NEOS	SEOS	1108	93					15	197		KL		6-13	KL
63,170	NEOS	SEOS	1110	93					3	200		KL		6-13	KL
61,170	NEOS	SEOS	1112	93					21	221		KL		6-13	KL
65,167	NEOS	SEOS	1122	93					21	242		KL		6-13	KL
65,171	NEOS	SEOS	1124	93					3	245		KL		6-13	KL
154,167	NEOS	SEOS	1125	93					22	267		KL		6-13	KL
164,172	SEOS	NEOS	1128	93					9	276		KL		6-13	KL
134,172	SEOS	NEOS	1129	93					65	341		KL		6-13	KL
165,173	NEOS	SEOS	1148	93					67	408		KL		6-13	KL
172,173	SEOS	NEOS	1252	94					99	57	460	KL	DFP-51	6-13	KL
66,173	NEOS	SEOS	1320	94					28	85		KL		6-13	KL
167,173	NEOS	NEOS	1322	94	↓	↓	↓	↓	4	85		KL		6-13	KL

PAGE TOTAL: 427

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 881 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY L[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-13-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-5	1250	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 22 Mileage: 89

PAGE NUMBER: 23

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
169, 172	WEOS	EEOS	1326	95	RZ	12	850	850	13	102		KL		6-13	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 13

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 102 ✓

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # 4059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-3	0900	RZ
TF-4	0920	RZ
TF-7	1240	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 23 Mileage: 102

PAGE NUMBER: 24

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
176,177	NEOS SEOS	0835	76	RZ	12	850	850	166	268		KL		7-10-15	EP
175,177	NEOS SEOS	0849	78	"	12	850	850	150	418		KL		7-10-15	EP
177,178	NEOS EEOS	0900	78	"	12	850	850	22	440		KL		7-10-15	EP
175,178	NEOS SEOS	0903	78	"	12	850	850	18	0	450	KL	DFP-54	7-10-15	EP
177,179	NEOS SEOS	0920	79	"	12	850	850	332	340		KL		7-10-15	EP
178,179	NEOS SEOS	0948	80	"	12	850	850	21	361		KL		7-10-15	EP
182,183	NEOS SEOS	1000	81	"	12	850	850	22	383		KL		7-10-15	EP
181,183	NEOS SEOS	1013	91	"	12	850	850	103	36	450	KL	DFP-55	7-10-15	EP
181,182	NEOS SEOS	1022	92	"	12	850	850	141	177		KL		7-10-15	EP
180,182	NEOS SEOS	1032	82	"	12	850	850	125	302		KL		7-10-15	EP
150,185	NEOS EEOS	1115	84	"	12	850	850	49	351		KL		7-13-15	KL
185,186	NEOS EEOS	1120	85	"	12	850	850	50	401		KL		7-13-15	KL
186,187	NEOS EEOS	1125	86	"	12	850	850	48	449		KL		7-13-15	KL
187,188	NEOS EEOS	1135	86	"	12	850	850	49	380	460	KL	DFP-57	7-13-15	KL
194,195	NEOS EEOS	1250	92	"	12	850	850	45	83		KL		7-13-15	KL

PAGE TOTAL: 1341

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 933 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A059

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-7	1240	RZ
TF-8	1306	RZ

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 24 Mileage: 83

PAGE NUMBER: 25

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
195,196	WEOS	WEOS	1255	92	RZ	12	850	850	45	69		KL		7-13-15	KL
196, 197	WEOS	WEOS	1300	92	"	12	850	850	44	113		KL		7-13-15	KL
197, 198	WEOS	WEOS	1310	92	"	12	850	850	43	156		KL		7-13-15	KL
198, 199	WEOS	WEOS	1330	92	"	12	850	850	40	196		KL		7-13-15	KL
199, 200	WEOS	WEOS	1336	92	"	12	850	850	41	237		KL		7-13-15	KL
200, 201	WEOS	WEOS	1341	92	"	12	850	850	18	255		KL		7-13-15	KL
201, 202	SEOS	NEOS	1350	93	"	12	850	850	16	271		KL		7-10-15	EP
200, 202	SEOS	NEOS	1352	93	"	12	850	850	27	298		KL		7-13-15	KL
184, 202	SEOS	NEOS	1400	93	"	12	850	850	34	332		KL		7-10-15	EP
184, 200	SEOS	NEOS	1402	93	"	12	850	850	3	335		KL		7-10-15	KL
184, 199	SEOS	NEOS	1403	93	"	12	850	850	24	359		KL		7-13-15	KL
184, 198	SEOS	NEOS	1404	93	"	12	850	850	22	381		KL		7-13-15	KL
184, 197	SEOS	NEOS	1406	93	"	12	850	850	22	403		KL		7-13-15	KL
184 196	SEOS	NEOS	1408	93	"	12	850	850	22	425		KL		7-13-15	KL

PAGE TOTAL: 401

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 425 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-20-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	1300	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 0 Mileage: 0

PAGE NUMBER: 1

SEAM NUMBER	SEAM SECTION START POINT *	FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
2-3	WEOS	EEOS	144	90	MS	10	850		22	22				5-20	KL
4 TIE IN	NEOS	SEOS	202	91	MS	10	850		22	44				5-20	KL
3-4	WEOS	EEOS	207	91	MS	12	850		134	178				5-20	KL
2-4	WEOS	EEOS	220	92	MS	12	850		188	366				5-20	KL
6-7	NEOS	SEOS	252	92	MS	10	850		22	388				5-21	KL
7 TIE IN	NEOS	SEOS	300	92	MS	10	850		22	410				5-20	KL
5-7	WEOS	EEOS	305	92	MS	12	850		139	64	485	BP	DFP-3	5-20	KL
5-6	WEOS	EEOS	314	92	MS	12	850		181	245				5-20	KL
9 TIE IN	NEOS	SEOS	340	93	MS	10	850		22	267				5-20	KL
8-9	WEOS	EEOS	345	92	MS	12	850		345	127	485	BP	DFP-4	5-21	KL

PAGE TOTAL: 1097

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 127

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # AQS6

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0800	MS
TF-5	1240	~
TF-6	1240	~

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 1 Mileage: 127

PAGE NUMBER: 2

SEAM NUMBER	SEAM SECTION START POINT *	FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
1-12	WEOS	EEOS	755	83	MS	12	850		251	378				5-21	KL
13-14	NEOS	SEOS	802	83		10			22	400				5-21	KL
14-15	NEOS	SEOS	810	83		10			22	422				5-21	KL
13-16	WEOS	EEOS	823	84		12			100	27	495	GP	DFP-5	5-21	KL
14-16	WEOS	EEOS	850	85		12			32	59				5-21	KL
34-35	NEOS	SEOS	920	85		12			53	112				5-21	KL
33-34	NEOS	SEOS	927	86		12			54	166				5-21	KL
32-33	NEOS	SEOS	934	88		12			53	219				5-21	KL
31-32	NEOS	SEOS	940	88		12			53	272				5-21	KL
12 TIE IN	NEOS	SEOS	1007	88		10			22	294				5-21	KL
13 TIE IN	NEOS	SEOS	1010	88		10			22	316				5-21	KL
16 TIE IN	NEOS	SEOS	1013	88		10			22	338				5-21	KL
17 TIE IN	NEOS	SEOS	1016	89		10			22	360				5-21	KL
18 TIE IN	NEOS	SEOS	1019	89		10			18	378				5-21	KL
19 TIE IN	NEOS	SEOS	1022	89	MS	10	850		19	397				5-21	KL

PAGE TOTAL: 765

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 397

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # AGS6

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0800	LAS
TF-5	1240	MS
TF-6	1245	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 2 Mileage: 397

PAGE NUMBER: 3

SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
18-20	WEOS	SEOS	1036	89	MS	10	850	850	28	425				5-21	KL
17-21	WEOS	SEOS	1033	89		10			29	454				5-21	KL
16-22	WEOS	SEOS	1052	89		10			22	476				5-21	KL
16-23	WEOS	SEOS	1055	90		10			22	13	485	EP	DFP-8	5-21	KL
16-17	WEOS	SEOS	1048	89		12			42	55				5-21	KL
42-43	WEOS	SEOS	1108	90		12			22	77				5-21	KL
43-44	WEOS	SEOS	1114	90		12			94	171				5-21	KL
42-44	WEOS	SEOS	1125	91		12			225	396				5-21	KL
45-46	NEOS	SEOS	1145	92		12			22	418				5-22	KL
46,48	WEOS	SEOS	1309	93		12			53	471				5-22	KL
46,47	WEOS	SEOS	1315	94		12			179	165	485		DFP 15	5-22	KL
45,47	WEOS	SEOS	1330	94		12			82	247				5-22	KL
47,48	NEOS	SEOS	1338	94		12			22	269				5-22	KL
50,51	NEOS	SEOS	1345	94		12			22	291				5-26	KL
52,53	NEOS	SEOS	1415	94	↓	12	↓	↓	22	313				5-26	KL

PAGE TOTAL: 886

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 313

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0800	MS
TF-5	1240	MS
TF-6	1245	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER
FROM
Page # 3 Mileage: 313

PAGE NUMBER: 4

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
51,53	WEOS	EEOS	1420		MS	12	850	850	37	350		KL		5-26	KL
51,52	WEOS	EEOS	1423						163	28	485	KL	DFP-18	5-26	KL
50,52	WEOS	EEOS	1438						115	143		KL		5-26	KL
55,56	NEOS	SEOS	1506						22	165		KL		5-26	KL
56,57	WEOS	EEOS	1520						165	330		KL		5-26	KL
55,57	WEOS	EEOS	1535		↓	↓	↓	↓	148	28	450	KL	DFP-19	5-26	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 650

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 28 ✓

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # 056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0700	MS
TF-4	0800	MS
TF-5	1240	MS
TF-7	1240	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 4 Mileage: 28

PAGE NUMBER: 5

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
58,59	NEOS	SEOS	8:35		MS	11	850	850	22	6	44	KL	DFP-23	5-28	KL
59, EX.	NEOS	SEOS	8:52		↓	↓	↓	↓	22	28		KL		5-28	KL
59,60	WEOS	SEOS	8:58						73	101		KL		5-28	KL
58,60	WEOS	EEOS	9:04						241	342		KL		5-28	KL
63,64	NEOS	SEOS	9:40						22	364		KL		5-28	KL
62, EX.	NEOS	SEOS	9:50						22	386		KL		5-28	KL
62,64	WEOS	EEOS	9:58						45	431		KL		5-28	KL
62,63	WEOS	EEOS	10:02						169	109	491	KL	DFP-24	5-28	KL
61,63	WEOS	EEOS	10:14						1016	215		KL		5-28	KL
62, 67	NEOS	EEOS	10:33						22	237		KL		5-28	KL
65, EX.	NEOS	EEOS	10:45						22	254		KL		5-28	KL
65,67	WEOS	EEOS	10:50						193	452		KL		5-28	KL
65,66	WEOS	EEOS	11:18						131	98	485	KL	DFP 21	5-28	KL
69,70	NEOS	EEOS	11:26						22	120		KL		5-28	KL
68, EX.	NEOS	EEOS	11:34						22	142		KL		5-28	KL

PAGE TOTAL: 1134

PAGE DESTRUCTIVE LENGTH CARRY-OVER

DAILY TOTAL WELDED (FT) 142 ✓

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # 056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0700	MS
TF-4	0800	MS
TF-5	1240	MS
TF-7	1240	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 5 Mileage: 142

PAGE NUMBER: 6

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
66, 70	WEOS	EEOS	1138		MS	4	0850	850	99	241		KL		5-28	KL
68, 69	WEOS	EEOS	1147		MS	4			90	331		KL		5-28	KL
76, 77	NEOS	SEOS	1250		MS	4			59	390		KL		5-29	KL
77, 78	NEOS	SEOS	1302						61	451		KL		5-29	KL
78, 79	NEOS	SEOS	1313						62	23	490	KL	DFP 26	5-29	KL
79, 80	NEOS	SEOS	1322						63	86		KL		5-29	KL
80, 81	NEOS	SEOS	1343						62	148		KL		5-29	KL
81, 82	NEOS	SEOS	1354						59	207		KL		5-29	KL
82, 83	NEOS	SEOS	1406						60	267		KL		5-29	KL
66, 68	WEOS	EEOS	1423		↓	↓	↓	↓	129	396		KL		5-29	KL

PAGE TOTAL: 744

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 396 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-4	0830	JM
TF-5	0845	JM
TF-8	1300	JM
TF-9	1307	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 6 Mileage: 396

PAGE NUMBER: 7

SEAM NUMBER	SEAM SECTION START POINT *	FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
109, 110	NEOS	SEOS	10:30	82	JM	12	850	850	22	110	400	KL	DFP-32	6-4-15	KL
109, 111	WEOS	EEOS	11:00						113	131		KL		6-4-15	KL
110, 111	WEOS	EEOS	11:10						227	358		KL		6-4-15	KL
112, 113	NEOS	SEOS	11:30						22	380		KL		6-4-15	KL
10, 113	NEOS	SEOS	11:44						22	402		KL		6-4-15	KL
9, 111	NEOS	SEOS	11:48						22	424		KL		6-4-15	KL
2, 35	WEOS	EEOS	1307						5	429		KL		6-4-15	KL
35, 103	WEOS	EEOS	1308						7	436		KL		6-4-15	KL
86, 103	WEOS	EEOS	13:09						22	8	450	KL	DFP-33	6-4-15	KL
87, 103	WEOS	EEOS	13:11						22	30		KL		6-4-15	KL
88, 103	WEOS	EEOS	13:14						18	48		KL		6-4-15	KL
89, 104	WEOS	EEOS	1330			↓			19	67		KL		6-4-15	KL
90 104	WEOS	EEOS	1332			12			22	89		KL		6-4-15	KL
91 104	WEOS	EEOS	1334			12			22	111		KL		6-4-15	KL
92, 104	WEOS	EEOS	1336		↓	12	↓	↓	22	133		KL		6-4-15	KL

PAGE TOTAL: 587

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 133

DAILY TOTAL WELDED (FT)

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY L[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15

LAYER:	
PRIMARY	
SECONDARY	
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-4	0830	JM
TF-5	0845	JM
TF-8	1300	JM
TF-9	1307	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 7 Mileage: 133

PAGE NUMBER: 8

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
93, 105	WEDS	EEOS	1400	86	JM	12	880	450	20	153		KL		6-4-15	KL
94, 105	WEDS	EEOS	1404	86	JM	↓	↓	↓	22	175		KL		6-4-15	KL
95, 105	WEDS	EEOS	1406	87	JM				22	197		KL		6-4-15	KL
96, 105	WEDS	EEOS	1408	87	JM				22	219		KL		6-4-15	KL
97, 105	WEDS	EEOS	1410	89	JM				5	224		KL		6-4-15	KL
97, 107	WEDS	EEOS	1410	89	JM				2	226		KL	PATCHED	BY R-225	KL
97, 108	WEDS	EEOS	1411	89	JM				14	240		KL		6-4-15	KL
98, 108	WEDS	EEOS	1415	89	JM				22	262		KL		6-4-15	KL
99, 108	WEDS	EEOS	1418	89	JM				22	284		KL		6-4-15	KL
100, 108	WEDS	EEOS	1422	91	JM				9	293		KL		6-4-15	KL
100, 110	WEDS	EEOS	1423	91	JM				14	307		KL		6-4-15	KL
101, 110	WEDS	EEOS	1424	91	JM				22	329		KL		6-4-15	KL
102, 110	WEDS	EEOS	1426	92	JM				17	346		KL		6-4-15	KL
118, 119	WEDS	EEOS	1442	93	JM				144	20	470	KL	DAP 37	6-4-15	KL
117, 119	WEDS	EEOS	1456	94	JM	↓	↓	↓	107	127		KL		6-4-15	KL

PAGE TOTAL: 464

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 127 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY L[illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-4	0830	JM
TF-5	0845	JM
TF-8	1300	JM
TF-9	1307	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 8 Mileage: 127

PAGE NUMBER: 9

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
120, 121	NEOS SEOS	1512	94	JM	12	850	850	22'	149		KL		6-5-15	KL
121, 122	NEOS EEOS	1525	94	JM	12	850	850	135'	264		KL		6-5-15	KL
120, 122	NEOS EEOS	1536	93	JM	12	850	850	92'	366		KL		6-5-15	KL
44, 123	NEOS SEOS	1610	93	JM	12	850	850	32'	398		KL		6-5-15	KL
45, 124	NEOS SEOS	1613	93	JM	12	850	850	22'	410		KL		6-5-15	KL
124, 125	NEOS EEOS	1625	93	JM	12	850	850	72'	32	450	KL	DEP-40	6-5-15	KL
123, 125	NEOS EEOS	1631	93	JM	12	850	850	123'	155		KL		6-5-15	KL
123, 124	NEOS SEOS	1640	93	JM	12	850	850	22'	177		KL		6-5-15	KL
47, 125	NEOS SEOS	1650	93	JM	12	850	850	18'	155		KL		6-5-15	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 518

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 195 ✓

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-5-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0712	JM
TF-3	0717	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER
FROM
Page # 9 Mileage: 195

PAGE NUMBER: 10

SEAM NUMBER	SEAM SECTION START * POINT	SEAM SECTION FINISH * POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
127, 128	NEOS	SEOS	7.55		JM	12.5	850	850	22	217		KL		6-5-15	KL
128, 129	NEOS	EEOS	805		↓	12	↓	↓	99	316		KL		6-5-15	KL
129, 129	NEOS	EEOS	813			12			46	362		KL		6-5-15	KL
129, 130	NEOS	EEOS	835			12			123	35	450	KL	DFP-42	6-5-15	KL
130, 131	NEOS	EEOS	0905		JM	12			110	145		KL		6-5-15	KL
58, 133	NEOS	SEOS	1006		↓	12			9	164		KL		6-5-15	KL
57, 133	NEOS	SEOS	1002		↓	12			18	172		KL		6-5-15	KL
57, 131	NEOS	SEOS	1004		JM	12	↓	↓	5	177		KL		6-5-15	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 432

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 177 ✓

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 6-6-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # 4056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TE-1	7:00	MS
TE-2	7:07	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 10 Mileage: 177

PAGE NUMBER: 11

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
166, 174	NEOS SEOS	730	78	MS	12	850	850	316	43	450	KL	DEP-52	7-10-15	EP
175, 176	WEOS EEOS	9:18	78	"	11	850	850	22	65		KL		7-10-15	EP
174, 176	NEOS SEOS	8:38	78	"	12	850	850	169	234		KL		7-10-15	EP
174, 175	NEOS SEOS	8:52	80	"	12	850	850	172	56	350	KL	DEP-53	7-10-15	EP
180, 181	WEOS EEOS	9:12	81	"	11	850	850	22	78		KL		7-10-15	EP
179, 181	NEOS SEOS	9:32	82	"	12	850	850	230	308		KL		7-10-15	EP
179, 180	NEOS SEOS	956	83	"	12	850	850	125	433		KL		7-10-15	EP
183, 184	NEOS SEOS	1023	84	"	12	850	850	102	85	450	KL	DEP-56	7-10-15	EP
182, 184	NEOS SEOS	1032	85	"	12	850	850	264	349		KL		7-10-15	EP
188, 189	WEOS EEOS	1120	88	"	12	850	850	49	398		KL		7-13-15	KL
189, 190	WEOS EEOS	1126	90	"	12	850	850	48	446		KL		7-13-15	KL
190, 191	WEOS EEOS	1133	91	"	12	850	850	49	20	475	KL	DEP-58	7-13-15	KL
191, 192	WEOS EEOS	1248	92	"	12	850	850	45	65		KL		7-13-15	KL
192, 193	WEOS EEOS	1255	92	"	12	850	850	44	109		KL		7-13-15	KL
193, 194	WEOS EEOS	1302	92	"	12	850	850	44	153		KL		7-13-15	KL

PAGE TOTAL: 1701

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 153 ✓

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-5	1250	MS
TF-6	1345	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM Page # 11 Mileage: 153

PAGE NUMBER: 12

SEAM NUMBER	SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS: MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING: TEST DATE	QA MON.
184,195	WEOS EEOS	1315	94	MS	10	850	850	22	175		KL		7-13-15	KL
184,194	SEOS NEOS	1318	94	"	10	850	850	22	197		KL		7-13-15	KL
184,193	SEOS NEOS	1321	94	"	10	850	850	22	219		KL		7-13-15	KL
184,192	SEOS NEOS	1323	94	"	10	850	850	22	241		KL		7-13-15	KL
184,191	SEOS NEOS	1325	94	"	10	850	850	22	263		KL		7-13-15	KL
184,190	SEOS NEOS	1328	94	"	10	850	850	22	285		KL		7-13-15	KL
184,189	SEOS NEOS	1331	94	"	10	850	850	22	307		KL		7-13-15	KL
184,188	SEOS NEOS	1334	94	"	10	850	850	22	329		KL		7-13-15	KL
184,187	SEOS NEOS	1337	94	"	10	850	850	22	351		KL		7-13-15	KL
184,186	SEOS NEOS	1339	95	"	10	850	850	22	373		KL		7-13-15	KL
184,185	SEOS NEOS	1342	95	"	10	850	850	22	395		KL		7-13-15	KL
184,174	14'N,15E	1427	95	"	10	850	850	29	424		KL		7-13-15	KL
163,174	WEOS EEOS	1434	95	"	10	850	850	8	432		KL		7-13-15	KL
163,175	WEOS EEOS	1435	96	"	10	850	850	15	447		KL		7-13-15	KL
162,175	WEOS EEOS	1436	96	"	10	850	850	8	455		KL		7-13-15	KL

PAGE TOTAL: 302

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 455

DAILY TOTAL WELDED (FT):

✓

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD

Date: 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A056

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-1	0700	MS
TF-2	0707	MS
TF-5	1250	MS
TF-6	1245	MS

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 12 Mileage: 455

PAGE NUMBER: 13

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
161,176	WEOS	EEOS	1502	95	MS	12	850	850	15	10	460	KL	OFP-59	7-13-15	KL
160,178	WEOS	EEOS	1504	95	"	12	850	850	8	18		KL		7-13-15	KL
160,179	WEOS	EEOS	1505	95	"	12	850	850	15	33		KL		7-13-15	KL
157,179	WEOS	EEOS	1507	95	"	12	850	850	8	41		KL		7-13-15	KL
157,180	WEOS	EEOS	1508	95	"	12	850	850	15	56		KL		7-13-15	KL
155,180	WEOS	EEOS	1510	95	"	12	850	850	8	64		KL		7-13-15	KL
155,182	WEOS	EEOS	1511	95	"	12	850	850	16	80		KL		7-13-15	KL
151,184	WEOS	EEOS	1532	94	"	12	850	850	17	97		KL		7-13-15	KL
150,184	WEOS	EEOS	1555	93	"	12	850	850	7	104		KL		7-13-15	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 109

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 104 ✓

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-6-15

BRANTLEY E[illegible]ERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # AD77

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0830	SMT
TF-7	1300	SMT

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 0 Mileage: 0

PAGE NUMBER: 1

SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
10,11	S	N	0850		SMT	15	850	850	22	22		KL		5-20	KL
11,36	W	E	0853		"	"	"	"	143	65	100	KL	DFP-9	5-21	KL
10,36	W	E	0903						180	245		K		5-21	KL
36,38	W	E	0920						145	390		KL		5-21	KL
37,38	N	S	0927						22	412		KL		5-21	KL
36,37	W	E	935						182	108	485	KL	DFP-10	5-21	KL
38,34	W	E	0955						137	245		KL		5-21	KL
37,39	W	E	1005						185	30	400	KL	DFP-11	5-21	KL
39,41	W	E	1019						285	315		KL		5-21	KL
40,41	S	N	1035						22	337		KL		5-21	KL
39,40	W	E	1040						39	376		KL		5-21	KL
41,43	W	E	1110						99	475		KL		5-21	KL
41,42	W	E	1117						182	172	485	KL	DFP-13	5-21	KL
40,42	W	E	1130						42	214		KL		5-21	KL
44,46	W	E	1243		↓	↓	↓	↓	239	453		KL		5-21	KL

PAGE TOTAL: 1923

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 453

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-4-15

BRANTLEY EI[illegible]ING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:

PRIMARY	X
SECONDARY	
OTHER	

MACHINE # A077

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0830	SMT
TF-7	1300	SMT

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 1 Mileage: 453

PAGE NUMBER: 2

SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	MACHINE SETTINGS DIGITAL SET WEDGE	MACHINE SETTINGS INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	** PASSING - NON DESTRUCTIVE TESTING QA MON.
44,45	WEOS	EEOS	1300		SMT	15	850	850	82	50	485	KL	DFP-14	5-22	KL
48,49	WEOS	EEOS	1320						54	104		KL		5-22	KL
47,49	WEOS	EEOS	1322						265	369		KL		5-22	KL
49,51	WEOS	EEOS	1342						204	88	485	KL	DFP-16	5-22	KL
49,50	WEOS	EEOS	1356						117	205		KL		5-22	KL
53,54	WEOS	EEOS	1422						32	237		KL		5-22	KL
52,54	WEOS	EEOS	1428						262	14	485	KL	DFP-17	5-22	KL
54,56	WEOS	EEOS	1510						119	133		KL		5-22	KL
54,55	WEOS	EEOS	1522						122	255		KL		5-22	KL
57,EX	NEOS	SEOS	1538						22	277		KL		5-22	KL
56,EX	NEOS	SEOS	1540						22	299		KL		5-22	KL
54,EX	NEOS	SEOS	1541						22	321		KL		5-22	KL
53,EX	NEOS	SEOS	1543						22	343		KL		5-22	KL
51,EX	NEOS	SEOS	1545						22	365		KL		5-22	KL
49,EX	NEOS	SEOS	1547		↓	↓	↓	↓	22	387		KL		5-22	KL

PAGE TOTAL: 1359

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 387

DAILY TOTAL WELDED (FT):

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-4-15

BRANTLEY [illegible]EERING, LLC

GEOMEMBRANE FUSION SEAM LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15

LAYER:	
PRIMARY	X
SECONDARY	
OTHER	

MACHINE # 077

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TF-2	0830	SMT
TF-7	1300	SMT

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
Page # 2 Mileage: 387

PAGE NUMBER: 3

SEAM NUMBER	SEAM SECTION START POINT *	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	MACHINE SETTINGS MACH SPEED	DIGITAL SET WEDGE	INDICATOR WEDGE	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	DESTRUCT NO. OR REMARKS	** PASSING - NON DESTRUCTIVE TESTING TEST DATE	QA MON.
48, EX	NEOS	SEOS	15:49		SMT	15	852	850	22	409		KL		5-22	KL
46, EX	NEOS	SEOS	15:51						22	431		KL		5-22	KL
44, EX	NEOS	SEOS	1553						22	453		KL		5-22	KL
43, EX	NEOS	SEOS	15:55						22	475		KL		5-22	KL
41, EX	NEOS	SEOS	15:58						22	497		KL		5-22	KL

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 110

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 497

DAILY TOTAL WELDED (FT):

** DATA TO BE COMPLETED BY THE DATA REVIEWER ONLY.

Page #	Page Total Carryover

Reviewed By: S. NEJAD
Date: 8-4-15

Section 4
Geomembrane Extrusion Seaming Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
1	0930	JM
2	1315	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 0 Mileage: 0

PAGE NUMBER: 1

EXTRUSION SEAMING									VACUUM TESTING				
SEAM NUMBER	SEAM SECTION START POINT *	SEAM SECTION FINISH POINT *	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
55 T-FN	NEOS	SEOS	930	78	JM	22	22		BP	5-18-15	BV	P	BP	
54	N	S	1000	79		22	44			5-16-15				
53	N	S	1030	80		22	66			5-16-15				
52	N	S	1100	81		22	88			5-16-15				
51	N	S	1130	82		29	17	100		5-16-15				DSX -1
46	N	S	1:30	83		15	32			5-16-15				
45	N	S	1:40	84		22	54			5-16-15				
43	N	S	2:10	83		22	76			5-16-15				
41	N	S	2:40	84		22	98			5-16-15				
40	N	S	300	85		22	120			5-16-15				
38	N	S	313	85		15	135			5-16-15				
38	N	S	351	85		7	142			5-16-15				
37	N	S	400	84		20	162			5-16-15	↓	↓	↓	
36 ↓	N	S	432	84		18	180		↓	5-16-15	BV	P	BP	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 280

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 0

DAILY TOTAL WELDED (FT): 280

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY E[illegible]NEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-8-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
1	0930	JM
2	1315	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 1 Mileage: 180

PAGE NUMBER: 2

EXTRUSION SEAMING										VACUUM TESTING				
SEAM NUMBER	* SEAM SECTION START POINT	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
1 TIEW	NEOS	SBOS	820	84	JM	6	186		EP	5-16-15	EV	P	EP	
2 ~	NEOS	SBOS	825	84	"	5	191		EP	5-16-15	EV	P	EP	
2 ~	NEOS	SBOS	830	84	↓	14	205		EP	5-16-15	EV	P	EP	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 25

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 180

DAILY TOTAL WELDED (FT): 205

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-11-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
1	916	JM
5	1300	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 2 Mileage: 205

PAGE NUMBER: 3

EXTRUSION SEAMING										VACUUM TESTING				
SEAM NUMBER	* SEAM SECTION START POINT * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
63 TRIAL	NEOS SEOS	1030	83	JM	17	222		EP	5-18-15	EV	P	EP	
62 "	NEOS SEOS	1050	84	JM	19	241							
61 "	NEOS SEOS	1135	84	JM	19	260							
60 "	NEOS SEOS	1155	85	JM	18.5	278.5							
59 "	NEOS SEOS	1516	86	JM	19	297.5							
58 "	NEOS SEOS	218	86	JM	19	316.5							
57 "	NEOS SEOS	226	86	JM	19	335.5							
56 "	NEOS SEOS	303	86	JM	19	354.5			5-18-15	EV	P	EP	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 149.5

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 205

DAILY TOTAL WELDED (FT): 354.5

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-12-15

LAYER:	
PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
4	200 PM	CH
5	220 PM	C.R.

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 3 Mileage: 354.5

PAGE NUMBER: 4

EXTRUSION SEAMING										VACUUM TESTING				
SEAM NUMBER	* SEAM SECTION START POINT	* FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
80 T18-1N	NEOS	SEOS	2:30	88	CH	19.5			BP	5-18-15	BY	P	BP	
64 ~	NEOS	SEOS	2:39	88	CH	19				5-18-15	~	P	~	
85 ~	NEOS	SEOS	3:33	87	CH	19.5				5-18-15	~	P	~	
84 ~	NEOS	SEOS	3:41	96	CH	20.5				5-18-15	~	P	~	
82 ~	NEOS	SEOS	3:49	84	CH	20.5				5-18-15	~	P	~	
90 ~	NEOS	SEOS	4:38	83	CH	16.5				5-18-15	~	P	~	
89 ~	NEOS	SEOS	4:46	83	CH	19.5	485	SR DX5-2		5-18-15	~	P	~	DSX-2
88 ~	NEOS	SEOS	4:53	83	CH	19.5	19.5			5-18-15	~	P	~	

PAGE TOTAL: 154.5

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 19.5

DAILY TOTAL WELDED (FT): -

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 5-29-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE EXTRUSION SEAM AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-14-15

LAYER:

PRIMARY	
SECONDARY	X
OTHER	

MACHINE # A047

PASSING TRIAL SEAMS

NO.	TIME	TECH ID
TX-1	0800	JM

DESTRUCTIVE SEAM LENGTH CARRY-OVER FROM
PAGE # 4 Mileage: 20

PAGE NUMBER: 5

EXTRUSION SEAMING									VACUUM TESTING				
SEAM NUMBER	* SEAM SECTION START POINT *	FINISH POINT	APPROX. START TIME	AMB. AIR TEMP	WELD TECH	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTR.	DESTRUCT MILEAGE	QA MON.	NON DESTR. TEST DATE	TECH ID	P/F	QA MON.	REMARKS
102 TBW	N805	S803	915	82	JM	26	46		E.P.	5-18-15	BV	P	EP	
99			940	83	~	19	65							
98			954	84	~	20	75/10	DSX-4						DSX-4
97			1015	84	~	20	30							
96			1030	85	~	20	50							
94			1145	86	~	11	61							
93			122	87	~	8	69			↓	↓	↓	↓	
91	↓	↓	145	88	~	17	86		↓	5-18-15	BV	P	EP	

* REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

PAGE TOTAL: 141

PAGE DESTRUCTIVE LENGTH CARRY-OVER: 86 ✓

DAILY TOTAL WELDED (FT): 141

REVIEWED BY : S. NEJAD
DATE : 5-29-15

Section 5
Geomembrane Defect, Repair, and Vacuum Test Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

continued from Secondary
PAGE# 20

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	PP 4,5	102' E OF WEDS	DF	5-21	DFP-1	5-21	P	2x5	047	Jm	KL	5-22	JS	P	KL
B	PP. 1,2,3	T	T	5-21		5-21	P	2x2	047	Jm	KL	5-22	JS	P	KL
C	2,3,4	T	T	5-21		5-21	P	2x2	"	"	KL	5-22	"	"	KL
D	5,6,7	T	T	5-21		5-21	"	2x2	"	"	KL	5-22	"	"	"
F	6,7,8	T	T	5-21		5-21	"	2x2	"	"	KL	5-22	JS	P	KL
G	9,10,11	T	T	5-21		5-21	"	2x2	"	"	KL	5-22	"	"	KL
H	6,8	106' E OF WEDS	DF	5-21	DFP-2	5-22	"	3x5	047	Jm	KL	5-22	"	"	"
J	5,7	64' E OF WEDS	DF	5-21	DFP-3	5-22	"	2x6	"	"	KL	5-22	"	"	"
K	8,9	218' E OF WEDS	DF	5-21	DFP-4	5-21	"	2x5	"	"	KL	5-22	"	"	"
M	13,16	73' E OF WEDS	DF	5-21	DFP-5	5-21	"	2x5	"	"	KL	5-22	"	"	"
N	12,13	60' E OF WEDS	DF	5-21	DFP 6	5-21	"	2x6	"	"	KL	5-22	"	"	"
P	26,27	18' S OF NEDS	DF	5-21	DFP-7	5-21	"	2x5	"	"	KL	5-22	"	"	"
Q	16,23	6' E OF WEDS	DF	5-21	DFP-8	5-21	"	2x6	"	"	KL	5-22	"	"	"
R	11,36	165' W OF EEDS	DF	5-22	DFP 9	5-22	"	2x6	"	"	KL	5-22	"	"	"
S	36,37	108' W OF EEDS	DF	5-21	DFP 10	5-22	"	2x6	047	Jm	KL	5-22	JS	"	"
T	37,34	30' E OF WEDS	DF	5-26	DFP-11	5-22	"	2x6	047	Jm	KL	5-22	JS	"	"
W	41,42	10 E OF WEDS	DF	5-26	DFP-13	5-26	"	2x6	047	Jm	KL	5-26	JS	"	"
X	44,45	32' E OF WEDS	DF	5-26	DFP-14	5-26	"	2x6	047	Jm	KL	5-26	JS	"	"
Y	46,47	26' E OF WEDS	DF	5-26	DFP-15	5-26	"	2x6	047	Jm	KL	5-26	JS	"	"

DEFECTS TYPES			REPAIR TYPES
BO - BURNOUT	DX - EXTRUSION DESTRUCTIVE	PT - PRESSURE TEST CUT	P - PATCH
CO - CHANGE OF OVERLAP	ED - EQUIP. DAMAGE	T - THREE PANEL INTERSECTION	C - CAP
CUT - CUT	EXT - PANEL EXTENTION	VL - VACCUM LEAK	RS - RECONSTRUCTED SEAM
D - DAMAGE	FM - FISHMOUTH	WR - WRINKLE	G&W - GRIND AND WELD
CR - CREASE	FS - FAILED SEAM	WS - WELDER RESTART	
DF - FUSION DESTRUCTIVE	INT - INTERSECTION	OTHER _____	
	IO - INSUFFICIENT OVERLAP	OTHER _____	

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 21

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	P14	2' E of NW CNR	D	5-21-15		5-21-15	P	2x2	A047	JM	EP	5-22-15	JJ	P	EP
B	13/16/Tie-in	Tie P13+P16	T	5-21-15		5-21-15	P	3x4	A037	LA	EP	5-22-15	EV	P	EP
C	12/13/Tie-in	Tie P12+P13	T	5-21-15		5-21-15	P	4x4	A037	LA	EP	5-22-15	EV	P	EP
D	P12	4' S of NW CNR	D	5-21-15		5-21-15	P	2x4	A037	LA	EP	5-22-15	JJ	P	EP
F	1/2/Tie-in	Tie P1+P12	T	5-21-15		5-21-15	P	2x3	A037	LA	EP	5-22-15	JJ	P	EP
G	12/29/30	Tie P12, P29+P30	T	5-21-15		5-21-15	P	2x2	A037	LA	EP	5-22-15	JJ	P	EP
H	12/30/31	Tie P12, P30+P31	T	5-21-15		5-21-15	P	2x2	A037	LA	EP	5-22-15	JJ	P	EP
J	1/12/31/32	P1, P12, P31+P32	INT	5-21-15		5-21-15	P	2x4	A037	LA	EP	5-22-15	JJ	P	EP
K	1/32/33	Tie P1, P32+P33	T	5-21-15		5-21-15	P	2x2	A037	LA	EP	5-22-15	JJ	P	EP
M	1/33/34	Tie P1, P33+P34	T	5-21-15		5-21-15	P	2x2	A037	LA	EP	5-22-15	JJ	P	EP
N	1/34/35	Tie P1, P34+P35	T	5-21-15		5-21-15	P	2x2	A037	LA	EP	5-22-15	JJ	P	EP
P	1/3/Tie-in	Tie P1+P3	T	5-21-15		5-21-15	P	3x3	A037	LA	EP	5-22-15	JJ	P	EP
Q	3/4/Tie-in	Tie P3+P4	T	5-21-15		5-21-15	P	4x4	A037	LA	EP	5-22-15	JJ	P	EP
R	4/5/Tie-in	Tie P4+P5	T	5-21-15		5-21-15	P	2x5	A037	LA	EP	5-22-15	JJ	P	EP
S	P5	Tie W	D	5-21-15		5-21-15	P	2x3	A037	LA	EP	5-22-15	JJ	P	EP
T	5/7/Tie-in	Tie W P5+P7	T	5-21-15		5-21-15	P	2x4	A037	LA	EP	5-22-15	JJ	P	EP
W	41/Tie-in	+ 4' S of NCRC	T	5-21-15		5-21-15	P	2x2	A037	LA	EP	5-22-15	JJ	P - EP	
X	7/8/Tie-in	Tie W P7+P8	T	5-21-15		5-21-15	P	5x5	A037	LA	EP	5-22-15	JJ	P	EP
Y	P8	1' W of SW CNR.	D	5-22-15		5-22-15	P	2x2	A047	JM	EP	5-22-15	JJ	P	EP

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X / SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 22

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	P8	TIE IN, 10'S of NW CNR	D	5-21-15		5-21-15	P	2x5	A037	LA	BP	5-22-15	AJ	P	BP
B	P6+P8	54' N of EBOS	D	5-22-15		5-22-15	P	3x3	A047	JM	BP	5-22-15	AJ	P	BP
C	8/9/TIC IN	TIE IN P8+P9	T	5-21-15		5-21-15	P	4x7	A037	LA	BP	5-22-15	AJ	P	BP
D	9/11/TIC IN	TIE IN P9+P11	T	5-21-15		5-21-15	P	4x9	A037	LA	BP	5-22-15	JJ	P	BP
F	10/11/36	TIE P10, P11+P36	T	5-22-15		5-22-15	P	3x3	A047	JM	BP	5-22-15	JJ	P	BP
G	11/36/TIC IN	TIE IN P11+P36	T	5-22-15		↓	P	2x2	↓	↓	BP	↓	↓	↓	↓
H	P36	TIE IN, 4'S of NW CNR	T	5-22-15			P	2x2			BP				
J	36/38/TIC IN	TIE IN P36+P38	T	5-22-15			P	2x2			BP				
K	36/37/TIC IN	TIE P36, P37+P38	T	5-22-15			P	3x3			BP				
M	P37	55' E of NW CNR, 12'S of P37	D	5-22-15		5-22-15	P	2x2	A047	JM	BP	5-22-15	JJ	P	BP
N	39/40/41	TIE P39, P40+P41	T	5-22-15		5-22-15	P	2x4	A047	JM	BP	5-22-15	JJ	P	BP
P	40/41/42	TIE P40, P41+P42	T	5-22-15		5-22-15	P	3x3	A047	JM	BP	5-22-15	JJ	P	BP
Q	37/38/39	TIE P37, P38+P39	T	5-22-15		5-22-15	P	3x4	A047	JM	BP	5-22-15	JJ	P	BP
R	P39	142' E of WBOS 2'N of P37	D	5-22-15		5-22-15	P	2x2	A047	JM	BP	5-22-15	JJ	P	BP
S	P39+P41	135' E of WBOS TIE IN	D	5-22-15		5-22-15	P	2x2	A047	JM	BP	5-22-15	JJ	P	BP
T	P38	TIE IN, 4'S of NW CNR	T	5-22-15		↓	P	2x2	↓	↓	↓	↓	↓	↓	↓
W	38/39/TIC	TIE IN P38+P39	T	5-22-15			P	2x7							
X	P39	TIE IN, 5'S of NW CNR	T	5-22-15			P	2x2							
Y	P39	TIE IN, 6' S of NW CNR	DFP-12	5-21-15	DFR12	↓	P	2x5	↓	↓	↓	↓	↓	↓	↓

DEFECTS TYPES
BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP

CNR = CORNER

PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES
P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: (PRIMARY) SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	39/41/EX.	TIEIN P39 - P41	T	5-22-15		5-22-15	P	2x2	A047	JM	GP	5-22-15	JJ	P	GP
B	P39	31' E. OF NEOS (TIEIN)	D	5-22-15		5-22-15	P	2x2	A047	JM	GP	5-22-15	JJ	P	GP
C	PP-60.	4'S OF 143W OF EOS	D	5-28-15		5-28	P	2x2	037	OY	KL	5-29	JJ	P	SMN
D	57/58/59	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
F	58/59/60	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
G	57/59/EX.	INT.	T	5-28-15		5-28	P	2x3	047	JM	KL	5-29	JJ	P	SMN
H	57/EX.	10' S. OF NEOS	CUT	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
J	59/60/EX.	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
K	60/EX.	10' N. OF SEOS	CUT	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
M	59/EX.	10' N. OF SEOS	CUT	5-28-15		5-28	P	2x4	047	JM	KL	5-29	JJ	P	SMN
N	60/62/EX.	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
P	62/EX.	10' N. OF SEOS	CUT	5-28-15		5-28	P	2x3	047	JM	KL	5-29	JJ	P	SMN
Q	62/64/EX.	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
R	64/EX.	10' N. OF SEOS	CUT	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
S	64/65/EX.	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
T	65/EX.	10' N. OF SEOS	CUT	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	SMN
W	65/66/EX.	INT.	T	5-28-15		5-28	P	2x3	047	JM	KL	5-29	JJ	P	SMN
X	67/68/EX.	INT.	T	5-28-15		5-28	P	2x3	A047	JM	KL	5-29	JJ	P	SMN
Y	67/EX.	10' N. OF SEOS	CUT	5-28-15		5-28	P	2x2	A047	JM	KL	5-29	JJ	P	SMN

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NECIAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 24

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	49,51	88 W OF NEOS	DF	5-21-15	DFP-16	5-22	P	2x4	047	JM	KL	5-26	JJ	P	KL
B	52,54	34 W OF NEOS	DF	5-21-15	DFP-17	5-22	P	2x4	047	JM	KL	↓	↓	P	KL
C	51,52	16' W OF NEOS	DF	5-21-15	DFP-18	5-22	↓	2x4	047	↓	KL	↓	↓	P	KL
D	55,57	16' W OF NEOS	DF	5-21-15	DFP-19	5-22	↓	2x4	047	↓	KL	↓	↓	P	KL
F	41,43, T.I.	T	T	5-22-15	—	5-22	↓	2x2,2x3	047	JM	KL	5-26	JJ	P	KL
G	43,44, T.I.	T	T	5-22-15	—	5-22	↓	2x2,2x3	↓	↓	KL	5-26	JJ	P	KL
H	41,42,43	T	T	5-22-15	—	5-22	↓	2x2	↓	↓	KL	↓	↓	P	KL
J	42,43,44	T	T	5-22-15	—	5-26	↓	2x2	↓	↓	KL	↓	↓	P	KL
K	46,47,48	T	T	5-22-15	—	5-26	↓	2x2	↓	↓	KL	↓	↓	P	KL
M	47,48,49	T	T	5-22-15	—	5-26	↓	2x2	↓	↓	KL	↓	↓	P	KL
N	44,46, T.I.	T	T	5-22-15	—	5-26	↓	2x2	↓	JM	KL	↓	↓	P	KL
P	44, T.I.	5' S OF NEOS	T	5-22-15	—	5-26	↓	2x2	↓	JM	KL	5-26	↓	P	KL
Q	44,45,46	T	T	5-23	—	5-26	↓	2x2	↓	↓	KL	↓	↓	P	KL
R	45,46,47	T	T	5-23	—	5-26	↓	2x2	↓	↓	KL	↓	↓	P	KL
S	41,42	4'W, 1'S OF SEC	D	5-23	—	5-22	↓	2x2	↓	JM	KL	5-26	JJ	P	KL
T	46, T.I.	5'S OF NEOS	T	5-23	—	5-26	↓	2x2	↓	JM	KL	5-26	JJ	P	KL
W	46,48, T.I.	T	T	5-23	—	5-26	↓	2x2	↓	↓	KL	5-26	JJ	P	KL
X	48, T.I.	6' S OF NEOS	T	5-26	—	5-26	↓	2x3	↓	↓	KL	↓	↓	P	KL
Y	48,49, T.I.	T	T	5-26	—	5-26	↓	2x2	↓	↓	KL	↓	↓	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

T.I = Tie in

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 25

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	51,52,53	T	T	5-26		5-26	P	2x2	047	JM	KL	5-26	JJ	P	KL
B	52,53,54	T	T	5-26		5-26	P	2x2		JM	KL	5-26	JJ	P	KL
C	49, T.1.	8' S of NCOS	T	5-26		5-26	P	2x3		JM	KL	5-26	JJ	P	KL
D	49,51, T.1.	T	T	5-26		5-26	P	2x2		JM	KL	5-26		P	KL
F	51, T.1.	7' S of NCOS	T	5-26		5-26	P	2x3			KL	5-26		P	KL
G	51,53, T.1.	T	T	5-26		5-26	P	2x2			KL	5-26		P	KL
H	53, T.1.	16' N of SCOS	T	5-26		5-26	P	2x2			KL	5-26		P	KL
J	53,54, T.1.	T	T	5-26		5-26	P	2x2			KL	5-26		P	KL
K	54, T.1.	16' S of NCOS	T	5-26		5-26	P	2x2			KL	5-26		P	KL
M	54,56, T.1.	T	T	5-26		5-26	P	2x3				5-26		P	KL
N	56, T.1.	4' N of SCOS	T	5-26		5-26	P	3x4				5-26		P	KL
P	49,50,51	T	T	5-26		5-26	P	2x2				5-26		P	KL
Q	50,51,52	T	T	5-26		5-26	P	2x2				5-26		P	KL
R	54,55,56	T	T	5-26		5-26	P	2x2				5-26		P	KL
S	55,56,57	T	T	5-26		5-26	P	2x2			↓	5-26		P	KL
T	56,57, T.1.	T	T	5-26		5-26	P	2x3	↓	↓	KL	5-26	↓	P	KL
W	43, EXT	4' N of SCOS	T	5-26		5-22	P	2x2			KL	5-26	JJ	P	KL
X	41, EXT	4' S of NCOS	T	5-26		5-28	P	2x2	047	JM	KL	5-25	JJ	P	KL
Y					NOT USED										

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WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 26

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	58,59	6' N of SEDS	DF	5-28	DFP-23	5-28	P	2x5	037	OY	KL	5-29	JJ	P	KL
B	102,103	109' E of WEDS	DF	5-28	DFP-24	5-28	P	2x5	037	OY	KL	5-29	JJ	P	KL
C	65,66	36' E of WEDS	DF	5-28	DFP-21	5-28	P	2x5	037	OY	KL	5-29	JJ	P	KL
D	57,58	35' E of WEDS	DF	5-28	DFP-20	5-28	P	2x5	037	OY	KL	5-29	JJ	P	KL
F	60,62	3' W of EDDS	DF	5-28	DFP-22	5-28	P	2x5	037	OY	〃	5-29	JJ	P	KL
G	78,79	33' N of SEDS	DF	5-28	DFP-26	5-28	P	2x5	037	OY	〃	5-29	JJ	P	KL
H	67, EX	3' N of SEDS	DF	5-28	DFP-25	5-28	P	2x5	047	JH	〃	5-29	JJ	P	KL
J	84,85	16' S of NEDS	DF	5-28	DFP-27	5-28	P	2x5	037	OY	-	5-29	JJ	P	KL
K	77,78	161' S of NEDS	ID	5-28	—	5-29	P	2x2	037	OY	〃	5-29	JJ	P	KL
M	79,80	5' S of NEDS	PT	5-28	—	5-29	P	2x2	037	OY	↓	5-29	JJ	P	KL
N	←	NOT USED	←	→	NOT USED	→	→	→	→	→	→	→	→	→	→
P															
Q															
R															
S															
T															
W															
X															
Y	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

DEFECTS TYPES

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CO - CHANGE OF OVERLAP
CUT - CUT
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FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 27

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	68 / EX.	8' N. OF SEOS	CUT	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	KL
B	68/70/EX.	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	"
C	60/61/62	INT.	T	5-28-15		5-28	P	2x2	037	OY	KL	5-29	JJ	P	"
D	61/62/63	INT.	T	5-28-15		5-28	P	2x2	037	OY	KL	5-29	JJ	P	"
F	62/63/64	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	"
G	63/64/65	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	"
H	65/66/67	INT.	T	5-28-15		5-28	P	2x2	037	OY	KL	5-29	JJ	P	KL
J	66/67/68	INT.	T	5-28-15		5-28	P	2x2	037	OY	KL	5-29	JJ	P	KL
K	68/69/70	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
M	70/EX.	6' N. OF SEOS	CUT	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	"
N	Existing	2' W. OF P-70	CUT	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	"
P	70/71/EX.	INT.	T	5-28-15		5-28	P	2x2	047	JM	KL	5-29	JJ	P	"
Q	71/72/EX.	INT.	T	5-28-15	Covered by Q 28	—	—	—	—	—	—	—	—	—	—
R	71/72/73	INT.	T	5-28-15		5-29	P	3x6	037	OY	KL	5-29	JJ	P	KL
S	71/73/74	INT.	T	5-28-15	Covered By 27R	—	—	—	—	—	—	—	—	—	—
T	71/74/75	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	KL
W	71/75/76	INT.	T	5-28-15		5-29	P	3x6	037	OY	KL	5-29	JJ	P	KL
X	69/70/76/77	H Panel INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	KL
Y	69/77/78	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	KL

DEFECTS TYPES

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T - THREE PANEL INTERSECTION
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WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 6-11-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 28

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	P-58	55' W/ 2' N	D	5-28-15		5-28	P	2x2	037	OY	KL	5-29	JJ	P	KL
B	69/78/79	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	KL
C	69/79/80	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	KL
D	68/69/80	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
F	68/80/81	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
G	68/81/82	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
H	68/82/83	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
J	68/83/84	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
K	68/84/85	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
M	66/68/85	INT.	T	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
N	P-60	75' E/ 6' S.	D	5-28-15		5-28	P	2x2	037	OY	KL	5-29	JJ	P	"
P	P-60	80' E/ 6' S.	D	5-28-15		5-28	P	1x2	037	OY	KL	5-29	JJ	P	"
Q	71/72/EX.	INT.	T	5-28-15	Covers 27Q	5-28	P	3x5	047	JM	KL	5-29	JJ	P	"
R	72/73/EX.	INT.	T	5-28-15		5-29	P	3x6	037	OY	KL	5-29	JJ	P	"
S	Existing	2' W. OF P-73	D	5-28-15		5-29	P	2x2	037	OY	KL	5-29	JJ	P	"
T	73/EX.	5' S. OF NEOS	CUT	5-28-15		5-29	P	3x4	037	OY	KL	5-29	JJ	P	"
W	71/EX.	4' N. OF SEOS	CUT	5-28-15		5-28	P	1x1	047	JM	KL	5-29	JJ	P	"
X															
Y															

DEFECTS TYPES

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WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 29

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	35,86	37' N of SEDS	IO	6-3-15	—	6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
B	35,86	11' N of SEDS	DF	6-3-15	DFP-28	6-5	P	2x5	"	"	"	6-6	OY	P	KL
C	93,94	15' S of NEDS	DF	6-3-15	DFP-29	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
D	101, 102	14' S of NEDS	DF	6-3-15	DFP-30	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
F	105,107	68' E of WEDS	DF	6-4-15	DFP-31	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
G	109,110	18 N of SEDS	DF	6-4-15	DFP-32	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
H	108,110	14' E of WEDS	DF	6-4-15	DFP-33	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
J	113, 115	25 E of WEDS	DF	6-4-15	DFP-34	6-5	P	2x5	037	OY	KL	6-6	OY	P	KL
K	114, 116	94' E of WEDS	DF	6-4-15	DFP-35	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
M	110, 111	104' W of EEDS	BO	6-4-15	—	6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
N	109, 111	32' W of EEDS	BO	6-4-15	3' long	6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
P	806, 103	8' E of WEDS	DF	6-4-15	DFP-36	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
Q	118, 119	20 W of EEDS	DF	6-4-15	DFP-37	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
R	119, 121	8' E of WEDS	DF	6-4-15	DFP-38	6-5	P	3x5	037	OY	KL	6-6	OY	P	KL
S	122, 123	34' W of EEDS	DF	6-4-15	DFP-39	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL
T	124, 125	32' N of EEDS	DF	6-4-15	DFP-40	6-5	P	2x7	037	OY	KL	6-6	OY	P	KL
W	50, 128	2' N of SEDS	DF	6-5-15	DFP-41	6-5	P	2x10	037	JM	KL	6-8	AH	P	KL
X	129, 130	35' E of WEDS	DF	6-5-15	DFP-42	6-5	P	2x7	047	JM	KL	6-6	OY	P	KL
Y	139, 140	17' N of SEDS	DF	6-5-15	DFP-43	6-5	P	2x5	047	JM	KL	6-6	OY	P	KL

DEFECTS TYPES

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REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	147,148	8'N OF S205	DF	6-4-15	DFP-44	6-5	EP	2x6	047	JM	KL	6-6	OY	P	KL
B	P1,2,35	INT	INT	6-4-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
C	2,35,103		T	6-4-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
D	35,86,103		T	6-4-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
F	86,87		T	6-4-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
G	87,88		T	6-4-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
H	88,89,103,104	INT	T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
J	89,90,104		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
K	90,91,104		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
M	91,92,104		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
N	92,93,105,104	INT	INT	6-5-15		6-5	P	2x6	047	JM	KL	6-6	OY	P	KL
P	93,94		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
Q	94,95,105		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
R	95,96,105		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
S	96,97,105		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
T	98,102,108		T	6-5-15		6-5	P	3x4	047	JM	KL	6-6	OY	P	KL
W	97,98,108		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
X	98,99,1108		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
Y	99,100,108		T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	100,108,110	T	T	6-4-15		6-5	P	2x2	047	JM	KL	6-6	DY	P	KL
B	100,101,110	T	T	6-5-15		6-5	P	2x2	047	JM	KL	6-6	"	P	KL
C	101,102,110	T	T	6-4-15		6-5	P	2x2	047	JM	KL			P	KL
D	107,108	9'S OF NEOS 1'	D	6-5		6-5	P	2x2	047	JM	KL			P	KL
F	2,4,103,104	INT	INT	6-5		6-5	P	3x7	047	JM	KL			P	KL
G	PP-4	EEOS 6'S	D	6-5		6-5	P	2x6	047	JM	KL			P	KL
H	4,5,104,106	INT	INT	6-5		6-5	P	3x3	047	JM	KL			P	KL
J	5,6,106,107	INT	INT	6-5		6-5	P	3x6	047	JM	KL	↓	↓	P	KL
K	105,106,104		T	6-5		6-5	P	2x2	047	JM	KL	6-6	DY	P	KL
M	105,106,107		T	6-5		6-5	P	2x2	047	JM	KL	6-6	DY	P	KL
N	107,109,110		T	6-5		6-5	P	2x2	047	JM	KL	6-6		P	KL
P	109,110,111	2' OF NEC	T	6-5		6-5	P	2x2	047	JM	KL	6-6	↓	P	KL
Q	109,111	22' W OF EEOS	B.O.	6-5		6-5	P	2x4	047	JM	KL	6-6	DY	P	KL
R	111	46' E 13'S	D	6-5		6-5	P	3x3	037	DY	KL	6-6	DY	P	KL
S	6,8,107,109	INT	INT	6-5		6-5	P	4x4	037	DY	KL			P	KL
T	8,9,109,111	INT	INT	6-5		6-5	P	4x4	037	DY	KL			P	KL
W	113,114,115	T	T	6-5		6-5	P	2x2	037	DY	KL			P	KL
X	114,115,116	T	T	6-5		6-5	P	2x2	037	DY	KL			P	KL
Y	9,10,111,113	INT	INT	6-5		6-5	P	4x4	037	DY	KL	↓	↓	P	KL

DEFECTS TYPES
BO - BURNOUT
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OTHER _____
OTHER _____

REPAIR TYPES
P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 32

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	10,36, 113,115	INT	INT	6-5		6-5	P	4x4	037	OY	KL	6-6	OY	P	KL
B	36,37,115,1116	INT	INT	6-5		6-5	P	4x4	037	OY	KL	6-6	OY	P	KL
C	37,39,116,118	INT	INT	6-5		6-5	P	3x3	037	OY	KL	6-6	OY	P	KL
D	39,40,118,119	INT	INT	6-5		6-5	P	5x5	037	OY	KL	6-6	OY	P	KL
F	40,42,119,121	INT	INT	6-5		6-5	P	5x5	037	OY	KL	6-6	OY	P	KL
G	116,117,118	INT	INT	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
H	117,118,119	INT	INT	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
J	113,114	9½' E OF 4KOS	IO	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
K	110,111	120' W OF 4KOS	CUT	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
M	111,112,113	T	T	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
N	112,113,114	T	T	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
P	113,114	22' W OF 4KOS	CUT	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
Q	116	16' W 10'S	D	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
R	122,123,124	T	T	6-5		6-5	P	2x2	037	OY	KL	6-6	OY	P	KL
S	123,124,125	T	T	6-5		6-5	P	2x2	037	OY	KL	6-6	OY	P	KL
T	119,120,121	T	T	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
W	120,121,122	T	T	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
X	126,127,128	T	T	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL
Y	127,128,125	T	T	6-5		6-5	P	2x2	047	JM	KL	6-6	OY	P	KL

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WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	42,44,121	T	T	6-5		6-5	P	2x2	037	OY	KL	6-6	OY	P	KL
B	44,121,122	T	T	6-5		6-5	P	2x2	037	OY	KL	6-6	"	P	KL
C	44,45,122,124	INT	INT	6-5		6-5	P	4x4	037	OY	KL	6-6	"	P	KL
D	45,47,124,125	INT	INT	6-5		6-5	P	3x10	037	OY	KL	6-6	"	P	KL
F	47,49,125	T	T	6-5		6-5	P	2x2	037	OY	KL	6-6	"	P	KL
G	49,125,126	T	T	6-5		6-5	P	3x3	037	OY	KL	6-6	"	P	KL
H	131,132,133	T	T	6-5		6-5	P	2x2	047	JM	KL	6-6	V	P	KL
J	130	12'W 10'S	CUT	6-5		6-5	P	4x4	047	JM	KL	6-6	OY	P	KL
K	50,52,128,129	INT	INT	6-6		6-8	P	2x4	037	JM	KL	6-8	AH	P	KL
M	52,54,129,130	INT	INT	6-6		6-8	P	3x6	037	JM	KL	6-8	AH	P	KL
N	54,55,130,131	INT	INT	6-6		6-8	P	2x6	037	JM	KL	6-8	AH	P	KL
P	55,57,131,133	INT	INT	6-6		6-8	P	3x4	037	JM	KL	6-8	AH	P	KL
Q	57,131,133	T	T	6-6		6-8	P	2x2	037	JM	KL	6-8	AH	P	KL
R	57,58,133	T	T	6-6		6-8	P	2x3	037	JM	KL	6-8	AH	P	KL
S	132,133,153	T	T	6-9		6-9	P	2x2	047	JM	KL	6-9	OY	P	KL
T	58,133,153	T	T	6-9		6-9	P	2x2	047	JM	KL	6-9	OY	P	KL
W	58,60,153	T	T	6-9		6-9	P	2x2	047	JM	KL	6-9	OY	P	KL
X	60,153,154	T	T	6-9		6-9	P	2x2	047	JM	KL	6-9	OY	P	KL
Y	60,61,154	T	T	6-9		6-9	P	2x2	047	JM	KL	6-9	OY	P	KL

DEFECTS TYPES

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WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
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RS - RECONSTRUCTED SEAM
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REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	142,143,152,155	INT	INT	6-9		6-11	P	2x4	037	JM	KL	6-11	OY	P	KL
B	143,144,152	T	T	6-9		6-10	P	2x2	037	JM	KL	6-11	OY	P	KL
C	144,151,152	T	T	6-9		6-10	P	2x4	037	JM	KL	6-11	OY	P	KL
D	144,145,151	T	T	6-9		6-10	P	2x2	037	JM	KL	6-11	OY	P	KL
F	146,147,151	T	T	6-9		6-10	P	2x5	037	JM	KL	6-11	OY	P	KL
G	147,148,151	T	T	6-9		6-10	P	2x3	037	JM	KL	6-11	OY	P	KL
H	148,149,151	T	T	6-9		6-10	P	2x2	037	JM	KL	6-11	OY	P	KL
J	149,150,151	T	T	6-9		6-10	P	2x2	037	JM	KL	6-11	OY	P	KL
K	152,155	11' N OF SEDS	DF	6-9	DFP-45	6-10	P	2x7	037	JM	KL	6-11	OY	P	KL
M	157,160	56' N OF SEDS	DF	6-9	DFP-46	6-11	P	2x7	037	JM	KL	6-11	OY	P	KL
N	161,163	121' S OF NEDS	DF	6-10	DFP-47	6-11	P	2x6	037	JM	KL	6-11	OY	P	KL
P	160,164	21' S OF NEDS	DF	6-10	DFP-48	6-11	P	2x6	037	JM	KL	6-11	OY	P	KL
Q	140,142,155	T	T	6-10		6-11	P	2x4	037	JM	KL	6-11	OY	P	KL
R	145,146,147	T	T	6-10		6-10	P	2x4	037	JM	KL	6-11	OY	P	KL
S	140,141,142	T	T	6-10		6-11	P	2x4	037	JM	KL	6-11	OY	P	KL
T	142,143,152,155	INT	INT	6-10		6-11	P	3x5	037	JM	KL	6-11	OY	P	KL
W	139,140,155,156	INT	INT	6-10		6-11	P	3x6	037	JM	KL	6-11	OY	P	KL
X	155,156,157	T	T	6-10		6-11	P	2x2	037	JM	KL	6-11	OY	P	KL
Y	138,139,156	T	T	6-10		6-11	P	2x2	037	JM	KL	6-11	OY	P	KL

DEFECTS TYPES

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REPAIR TYPES

P - PATCH
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REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	138,156,158,159	INT	INT	6-10		6-11	P	2x6	037	JM	KL	6-11	OY	P	KL
B	156,157,159,160	INT	INT	6-10		6-11	P	2x7	037	JM	KL	6-11	OY	P	KL
C	159,160,161	T	T	6-10		6-11	P	2x2	037	JM	KL	6-11	OY	P	KL
D	158,159,161	T	T	6-10		6-11	P	2x2	037	JM	KL	6-11	OY	P	KL
F	137,138,158	T	T	6-10		6-11	P	2x3	037	JM	KL	6-11	OY	P	KL
G	137,158,161	T	T	6-10		6-11	P	2x2	037	JM	KL	6-11	OY	P	KL
H	136,137,161	T	T	6-10		6-11	P	2x3	037	JM	KL	6-11	OY	P	KL
J	161,162,163	T	T	6-10		6-11	P	2x2	037	JM	KL	6-11	OY	P	KL
K	162,163,164	T	T	6-10		6-11	P	2x2	037	JM	KL	6-11	OY	P	KL
M	135,136,161,163	INT	INT	6-10		6-11	P	2x5	037	JM	KL	6-11	OY	P	KL
N	134,135,162,164	INT	INT	6-10		6-11	P	2x4	037	JM	KL	6-11	OY	P	KL
P	163	4'S 8' W	D	6-10		6-11	P	2x2	037	JM	KL	6-11	OY	P	KL
Q	133,134	SEDS @ ANC. TRENCH	C	6-10	CAP	7-8	P	2x7	008	RZ	KL	7-8	ER	P	KL
R	134,138	SEDS @ ANC TRENCH	C	6-10	CAP	7-8	P	2x7	008	RZ	KL	7-8	ER	P	KL
S	153,154,166,167	INT	INT	6-13		6-13	P	2x4	037	JM	KL	6-11	OY	P	KL
T	132,153,166	T	T	6-13		6-13	P	2x2	037	JM	KL	6-11	OY	P	KL
W	131,132,166	T	T	6-13		6-13	P	2x2	037	JM	KL	6-11	OY	P	KL
X	130,131,166	T	T	6-13		6-13	P	2x2	037	JM	KL	6-11	OY	P	KL
Y	129,130,166	T	T	6-13		6-13	P	2x2	037	JM	KL	6-11	OY	P	KL

DEFECTS TYPES

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REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 36

DEFECT CODE	DEFECT LOCATION		DEFECT TYPE	DATE	REMARKS	REPAIR						VACUUM TEST			
	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION				DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	127,129,166		T	6-13		6-13	P	2x2	037	JM	KL	6-13	JM	P	KL
B	126,127,166,		T	6-13		6-13	P	2x2	037	JM	KL	6-13	JM	P	KL
C	125,126,166		T	6-13		6-13	P	2x3	037	JM	KL	6-13	JM	P	KL
D	123,125,166		T	6-13		6-13	P	2x3	037	JM	KL	6-13	JM	P	KL
F	122,123,166		T	6-13		6-13	P	2x2	037	JM	KL	6-13	JM	P	KL
G	120,122,166		T	6-13		6-13	P	2x3	037	JM	KL	6-13	JM	P	KL
H	119,120,166		T	6-13		6-13	P	2x2	037	JM	KL	6-13	JM	P	KL
J	117,166	11'S OF NEOS	DF	6-13	DFP-49	6-13	P	3x7	037	JM	KL	6-13	JM	P	KL
K	116,117,166		T	6-13		6-13	P	2x3	037	JM	KL	6-13	JM	P	KL
M	114,116,166		T	6-13		6-13	P	2x2	037	JM	KL	6-13	JM	P	KL
N	112,114,166		T	6-13		6-13	P	2x2	037	JM	KL	6-13	JM	P	KL
P	117,119,166	T	T	6-13		6-13	P	4x5	037	JM	KL	6-13	JM	P	KL
Q	111,110,166	T	T	6-13		6-13	P	3x4	037	JM	KL	6-13	JM	P	KL
R	110,111,166	T	T	6-13		6-13	P	2x4	037	JM	KL	6-13	JM	P	KL
S	102,110,166	T	T	6-13		6-13	P	2x2	037	JM	KL	6-13	JM	P	KL
T	154,167,170	T	T	6-13		6-13	P	3x3	047	ER	KL	6-13	JM	P	KL
W	164,165,168		T	6-13		6-13	V	3x3	047	ER	KL	6-13	JM	P	KL
X															
Y															

DEFECTS TYPES
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REPAIR TYPES
P - PATCH
C - CAP
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REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	164,165,166	T	T	6-13		6-13	P	3x4	047	ER	KL	6-13	JM	P	KL
B	—	—	←	—	NOT USED	—	—	→	—	—	—	—	—	—	—
C	107,166	6' N OF SEDS	D	6-13		6-13	P	4x8	037	JM	KL	6-13	JM	P	KL
D	164,166	76' N OF SEDS	D	6-13		6-13	P	2x2	047	ER	KL	6-13	JM	P	KL
F	164,169	14' S OF NEDS	DF	6-13	DFP-50	6-13	P	2x6	047	ER	KL	6-13	JM	P	KL
G	172,173	40' N OF SEDS	DF	6-13	DFP-51	6-13	P	2x6	047	ER	KL	6-13	JM	P	KL
H	165,166,167,168	INT	INT	6-13		6-13	P	2x5	047	ER	KL	6-13	JM	P	KL
J	167,168,169	T	T	6-13		6-13	P	2x2	047	ER	KL	6-13	JM	P	KL
K	164,168,169	T	T	6-13		6-13	P	2x2	047	ER	KL	6-13	JM	P	KL
M	61,154,170	T	T	6-13		6-13	P	2x2	047	ER	KL	6-13	JM	P	KL
N	61,63,170	T	T	6-13		6-13	P	3x3	047	ER	KL	6-13	JM	P	KL
P	167,170,171	T	T	6-13		6-13	P	2x2	047		KL	6-13	JM	P	KL
Q	63,170,171	T	T	6-13		6-13	P	2x2	047		KL	6-13	JM	P	KL
R	63,65,167,171	INT	INT	6-13		6-13	P	3x6	047		KL	6-13	JM	P	KL
S	164,169,172	T	T	6-13		6-13	P	2x3	047		KL	6-13	JM	P	KL
T	167,169,172	T	T	6-13		6-13	P	2x2	047		KL	6-13	JM	P	KL
W	134,164,172	T	T	6-13		6-13	P	2x2	047		KL	6-13	JM	P	KL
X	65,167,172	T	T	6-13		6-13	P	2x2	047		KL	6-13	JM	P	KL
Y	65,66,172,173	INT	INT	6-13		6-13	P	2x3	047	↓	KL	6-13	JM	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

See Secondary for # continuation

PAGE# 38

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	do.85,173	T	T	6-13		6-13	P	3x4	037	Jm	KL	6-13	Jm	P	KL
B	172,	@ ANC. TRENCH 24" EAST	ROOT	6-13		6-13	P	10x10	037	Jm	KL	6-14	Jm	P	KL
C															
D															
F															
G															
H															
J															
K															
M															
N															
P															
Q															
R															
S															
T															
W															
X															
Y															

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
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DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

continued from Secondary

PAGE# 43

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	174,175+176	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
B	175,176+177	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
C	175,177+178	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
D	177,178+179	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
F	179,180+181	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
G	180,181+182	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
H	181,182+183	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
J	182,183+184	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
K	184,185+186	T	T	7-10-15		7-13	P	3x3	008	MS	KL	7-13	JC	P	KL
M	184,186+187	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
N	184,188+189	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
P	184,189+190	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
Q	184,190+191	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
R	184,191+192	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
S	184,192+193	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
T	184,193+194	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
W	184,194+195	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
X	184,195+196	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
Y	184,196+197	T	T	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
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DF - FUSION DESTRUCTIVE
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T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 44

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	184, 197 +198	T	T	7-10-15		7/3	P	3x3	047	MS	KL	7-13	JC	P	KL
B	184, 198+199	T	T	7-10-15		7-13	P	3x3	047	MS	KL	7-13	JC	P	KL
C	184,199,200+202	INT	INT	7-10-15		7-13	P	3x6	047	MS	KL	7-13	JC	P	KL
D	200,201+202	T	T	7-10-15		7-13	P	2x2	A047	MS	KL	7-13	JC	P	KL
F	164, 174	P	P	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
G	163,164 +174	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
H	163,174 +175	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
J	161,163+175	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
K	161, 175 +178	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
M	160,178+179	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
N	157,160+179	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
P	157,179 +180	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
Q	155,157+180	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
R	155,180+182	T	T	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
S	184	3'S, 8'E	C	7-10-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
T															
W															
X															
Y															

DEFECTS TYPES
BO - BURNOUT
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CUT - CUT
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T - THREE PANEL INTERSECTION
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WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES
P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE DEFECT, REPAIR, AND TEST LOG

PROJECT # 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
LAYER: PRIMARY X
SECONDARY

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco

PAGE# 45

DEFECT	DEFECT LOCATION		DEFECT	DATE	REMARKS	REPAIR						VACUUM TEST			
CODE	SEAM, PANEL OR DEFECT CODE	DEFECT LOCATION DESCRIPTION	TYPE			DATE	TYPE	APPROX SIZE	MACH ID #	WELD TECH	QA MON.	DATE	TECH ID	P/F	QA MON.
A	166, 174	57' S OF NEOS	DF	7-10 15	DFP-52	7-13	P	2x5	047	MS	KL	7-13	JC	P	KL
B	166, 174	14' S OF NEOS	WS	7-10 15		7-13	P	3x3	008	MS	KL	7-13	JC	P	KL
C	174, 175	56' S OF NEOS	DF	7-10 15	DFP-53	7-13	P	2x5	047	MS	KL	7-13	JC	P	KL
D	175, 178	8' S OF NEOS	DF	7-10 15	DFP-54	7-13	P	2x12	047	MS	KL	7-13	JC	P	KL
F	177, 179	96' S OF NEOS	D	7-10-15		7-13	P	2x2	047	MS	KL	7-13	JC	P	KL
G	181, 183	36' S OF NEOS	D	7-10-15	DFP-55	7-13	P	2x5	047	MS	KL	7-13	JC	P	KL
H	183, 184	17' N OF SEOS	DF	7-10-15	DFP-56	7-13	P	2x5	047	MS	KL	7-13	JC	P	KL
J	187, 188	10" E OF WEOS	DF	7-10-15	DFP-57	7-13	P	3x10	008	MS	KL	7-13	JC	P	KL
K	190, 191	12' W OF EEOS	B.O.	7-10-15		7-13	P	2x4	047	MS	KL	7-13	JC	P	KL
M	190, 191	20' W OF EEOS	DF	7-10-15	DFP-59	7-13	P	2x5	047	MS	KL	7-13	JC	P	KL
N	161, 178	10' W OF EEOS	DF	7-10-15	DFP-59	7-13	P	2x8	008	MS	KL	7-13	JC	P	KL
P	189	5' S, 1' W	CUT	7-13-15		7-13	P	2x2	008	MS	KL	7-13	JC	P	KL
Q	150, 184, 185	T	T	7-13-15		7-13	P	3x4	008	MS	KL	7-13	JC	P	KL
R	152, 150, 184	T	T	7-13-15		7-13	P	3x3	008	MS	KL	7-13	JC	P	KL
S	151, 155, 182, 184	INT	INT	7-13-15		7-13	P	10x11	008	MS	KL	7-13	JC	P	KL
T															
W															
X															
Y															

DEFECTS TYPES

BO - BURNOUT
CO - CHANGE OF OVERLAP
CUT - CUT
D - DAMAGE
CR - CREASE
DF - FUSION DESTRUCTIVE
DX - EXTRUSION DESTRUCTIVE
ED - EQUIP. DAMAGE
EXT - PANEL EXTENTION
FM - FISHMOUTH
FS - FAILED SEAM
INT - INTERSECTION
IO - INSUFFICIENT OVERLAP
PT - PRESSURE TEST CUT
T - THREE PANEL INTERSECTION
VL - VACCUM LEAK
WR - WRINKLE
WS - WELDER RESTART
OTHER _____
OTHER _____

REPAIR TYPES

P - PATCH
C - CAP
RS - RECONSTRUCTED SEAM
G&W - GRIND AND WELD

REVIEWED BY : S. NEJAD
DATE : 8-6-15

Section 6
Geomembrane Non-Destructive Pressure Test Log

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15
PAGE# 1 of 4

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
1,3	EEOS	WEOS	1	O V	8:16	8:21	30	30	P	Y	KL	
1,2	WEOS	EEOS	2		8:16	8:21	30	28	P	Y	KL	
3,4	EEOS	WEOS	3		8:16	8:21	30	28	P	Y	KL	
2,4	WEOS	EEOS	4		8:16	8:21	30	30	P	Y	KL	
2,3	NEOS	SEOS	5		8:16	8:21	30	28	P	Y	KL	
5,7	WEOS	EEOS	6		8:20	8:25	30	30	P	Y	KL	
5,6	EEOS	WEOS	7		8:20	8:25	30	28	P	Y	KL	
7,8	EEOS	WEOS	8		8:21	8:26	30	28	P	Y	KL	
6,8	WEOS	EEOS	9		8:21	8:26	30	30	P	Y	KL	
6,7	NEOS	SEOS	1		8:26	8:31	30	30	P	Y	KL	
9,11	EEOS	WEOS	2		8:28	8:33	30	30	P	Y	KL	
9,10	WEOS	EEOS	3		8:28	8:33	30	30	P	Y	KL	
4,5	WEOS	EEOS	4		8:31	8:36	30	29	P	Y	KL	
8,9	WEOS	EEOS	1		9:07	9:12	30	29	P	Y	KL	
3,EXT	SEOS	NEOS	2		9:37	9:42	30	28	P	Y	KL	
1,EXT	NEOS	SEOS	3		9:37	9:42	30	28	P	Y	KL	
4,EXT	SEOS	NEOS	4		9:45	9:50	30	28	P	Y	KL	
7,EXT	SEOS	NEOS	5		9:46	9:51	30	28	P	Y	KL	
5,EXT	SEOS	215	6		9:46	9:51	30	29	P	N	KL	
5,EXT	215	NEOS	7	↓	9:46	9:51	30	28	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY EN[illegible]NEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: K
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21
PAGE# 2 of 4

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
11, EXT	SEOS	NEOS	1	OV	9:47	9:52	30	30	P	Y	KL	
9, EXT	NEOS	SEOS	2		9:47	9:52	30	30	P	Y	KL	
8, EXT	SEOS	21Y	3		947	9:52	30	30	P	N	KL	
8, EXT	21Y	NEOS	4		947	952	30	28	P	Y	KL	
12, EXT	SEOS	NEOS	1		1045	1050	30	28	P	Y	KL	
13, EXT	NEOS	SEOS	2		1045	1050	30	25	P	Y	KL	
16, EXT	SEOS	NEOS	3		1046	1051	30	30	P	Y	KL	
17, EXT	SEOS	NEOS	4		1046	1051	30	30	P	Y	KL	
18, EXT	SEOS	NEOS	5		1048	1053	30	30	P	Y	KL	
15, EXT	NEOS	SEOS	6		1048	1053	30	28	P	Y	KL	
18, 19	EEOS	WEOS	7		1048	1053	30	30	P	Y	KL	
17, 18	EEOS	EEOS	1		1117	1122	30	30	P	Y	KL	
19, 20	NEOS	SEOS	2		1118	1123	30	30	P	Y	KL	
18, 20	WEOS	EEOS	3		1118	1123	30	30	P	Y	KL	
17, 21	WEOS	EEOS	4		1120	1125	30	30	P	Y	KL	
20, 21	NEOS	SEOS	5		1120	1125	30	28	P	Y	KL	
16, 17	EEOS	WEOS	6		1125	1130	30	30	P	Y	KL	
22, 23	NEOS	SEOS	7		1126	1131	30	30	P	Y	KL	
12, 13	EEOS	WEOS	1		1133	1138	30	29	P	Y	KL	
13, 16	EEOS	WEOS	2	↓	1133	1138	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: K
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15
PAGE# 3 of 4

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
1,12	WEOS	EEOS	1	OV	1139	1144	30	30	P	Y	KL	
12,15	WEOS	EEOS	1		1250	1255	30	30	P	Y	KL	
12,14	EEOS	WEOS	2		1250	1255	30	29	P	Y	KL	
13,14	NEOS	SEOS	3		1250	1255	30	30	P	Y	KL	
14,15	NEOS	SEOS	4		1250	1255	30	30	P	Y	KL	
14,16	NEOS	SEOS	5		1251	1256	30	30	P	Y	KL	
24,25	NEOS	SEOS	1		1308	1313	30	30	P	Y	KL	
23,24	NEOS	SEOS	2		1308	1313	30	29	P	Y	KL	
25,26	NEOS	SEOS	3		1309	1314	30	28	P	Y	KL	
16,25	WEOS	EEOS	4		1309	1314	30	30	P	Y	KL	
26,27	NEOS	SEOS	5		1321	1326	30	28	P	Y	KL	
15,26	EEOS	WEOS	6		1321	1326	30	30	P	Y	KL	
15,27	WEOS	EEOS	7		1321	1326	30	29	P	Y	KL	
27,28	NEOS	SEOS	8		1322	1327	30	29	P	Y	KL	
15,28	EEOS	WEOS	1		1334	1339	30	30	P	Y	KL	
28,29	NEOS	SEOS	2		1334	1339	30	30	P	Y	KL	
12,29	WEOS	EEOS	3		1336	1341	30	29	P	Y	KL	
29,30	NEOS	SEOS	4		1343	1348	30	29	P	Y	KL	
30,31	NEOS	SEOS	5		1343	1348	30	28	P	Y	KL	
12,30	EEOS	WEOS	6	↓	1343	1348	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-21-15
PAGE# 4 of 4

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
16,23	EEOS	WEOS	1	OV	1408	1413	30	30	P	Y	KL	
31,32	NEOS	SEOS	2		1410	1415	30	30	P	Y	KL	
12,31	EEOS	WEOS	3		1410	1415	30	29	P	Y	KL	
1,32	WEOS	EEOS	4		1410	1415	30	29	P	Y	KL	
32,33	NEOS	SEOS	1		1418	1423	30	30	P	Y	KL	
33,34	NEOS	SEOS	2		1420	1425	30	29	P	Y	KL	
1,33	EEOS	WEOS	3		1420	1425	30	30	P	Y	KL	
1,34	WEOS	EEOS	4		1420	1425	30	30	P	Y	KL	
34,35	NEOS	WEOS	5		1427	1432	30	30	P	Y	KL	
1,35	WEOS	EEOS	6	↓	1427	1432	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-22-15
PAGE# 1 of 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
36,37	WEOS	EEOS	1	OV	7:37	7:42	30	30	P	Y	KL	
36,38	EEOS	WEOS	2		7:37	7:42	30	30	P	Y	KL	
37,38	NEOS	SEOS	3		7:37	7:42	30	29	P	Y	KL	
11,36	EEOS	WEOS	4		7:38	7:43	30	30	P	Y	KL	
10,36	WEOS	EEOS	5		7:38	7:43	30	30	P	Y	KL	
37,39	WEOS	EEOS	6		7:40	7:45	30	30	P	Y	KL	
38,39	EEOS	WEOS	7		7:41	7:46	30	30	P	Y	KL	
39,40	WEOS	EEOS	8		7:41	7:46	30	30	P	Y	KL	
39,41	EEOS	EEOS	9		7:41	7:46	30	30	P	Y	KL	
40,41	NEOS	SEOS	1		7:48	7:53	30	30	P	Y	KL	
40,42	WEOS	EEOS	2		7:48	7:53	30	30	P	Y	KL	
49,EXT.	NEOS	25C	1		8:46	8:51	30	29	P	N	KL	
41,42	WEOS	EEOS	1		9:30	9:35	30	30	P	Y	KL	
41,43	EEOS	WEOS	2		9:30	9:35	30	30	P	Y	KL	
42,43	NEOS	SEOS	3		9:30	9:35	30	30	P	Y	KL	
46,47	WEOS	EEOS	4		9:35	9:40	30	30	P	Y	KL	
46,48	EEOS	WEOS	5		9:35	9:40	30	29	P	Y	KL	
47,48	NEOS	SEOS	6		9:36	9:41	30	28	P	Y	KL	
47,49	WEOS	EEOS	7		9:36	9:41	30	28	P	Y	KL	
48,49	EEOS	WEOS	8	↓	9:36	9:41	30	29	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: A
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-22-15
PAGE# 2 of 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
48, EXT	SEOS	24 X	1	OV	9:45	9:50	30	30	P	N	KL	
44, 45	WEOS	EEOS	2	"	948	953	30	29	P	Y	KL	
44, 46	EEOS	WEOS	3	"	948	953	30	30	P	Y	KL	
45, 46	NEOS	SEOS	4	"	9:52	9:57	30	30	P	Y	KL	
45, 47	WEOS	EEOS	5	↓	9:52	9:57	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-26-15
PAGE# 1 OF 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
11, EXT	SEOS	NEOS	1	OV	7:50	7:55	30	30	P	Y	KL	
36, EXT	SEOS	22H	2		7:50	7:55	30	30	P	N	KL	
36, EXT	22H	NEOS	3		7:50	7:55	30	30	P	Y	KL	
38, EXT	SEOS	22T	4		7:54	7:59	30	29	P	N	KL	
38, EXT	22T	NEOS	1		8:04	8:14	30	29	P	Y	KL	
39, EXT	NEOS	SEOS	2		8:10	8:15	30	30	P	Y	KL	
41, EXT	SEOS	25X	3		8:10	8:15	30	28	P	N	KL	
41, EXT	25X	NEOS	4		8:11	8:16	30	30	P	Y	KL	
43, EXT	SEOS	25W	5		8:11	8:16	30	30	P	N	KL	
51, EXT	SEOS	25F	1		8:39	8:44	30	30	P	N	KL	
51, EXT	25F	NEOS	2		8:39	8:44	30	28	P	Y	KL	
53, EXT	SEOS	25H	3		8:39	8:44	30	28	P	N	KL	
53, EXT	25H	NEOS	4		8:40	8:45	30	29	P	Y	KL	
54, EXT	SEOS	25K	5		8:40	8:45	30	28	P	Y	KL	
54, EXT	25K	NEOS	6		8:40	8:45	30	29	P	Y	KL	
56, EXT	SEOS	25N	7		8:40	8:45	30	29	P	N	KL	
56, EXT	25N	NEOS	8		8:40	8:45	30	29	P	Y	KL	
53, 54	EEOS	WEOS	9		8:40	8:45	30	30	P	Y	KL	
43, EXT	25W	NEOS	10		8:42	8:47	30	30	P	Y	KL	
44, EXT	SEOS	24P	11	↓	8:42	8:47	30	30	P	N	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-26-15
PAGE# 2 of 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
44,EXT	24P	NEOS	1	OV	843	848	30	28	P	Y	KL	
46,EXT	SEOS	24T	2		843	849	30	29	P	N	KL	
46,EXT	24T	NEOS	3		844	849	30	25	P	Y	KL	
48,EXT	24K	NEOS	4		844	8:49	30	29	P	Y	KL	
49,EXT	SEOS	25C	5		845	8:50	30	30	P	N	KL	
54,56	EEOS	WEOS	6		845	8:50	30	28	P	Y	KL	
49,EXT	25C	NEOS	7		846	851	30	30	P	Y	KL	
56,57	EEOS	WEOS	8		848	853	30	30	P	Y	KL	
51,52	WEOS	EEOS	1		859	9:04	30	30	P	Y	KL	
51,53	EEOS	WEOS	2		859	9:04	30	30	P	Y	KL	
52,53	NEOS	SEOS	3		859	9:04	30	30	P	Y	KL	
52,54	WEOS	EEOS	4		9:00	9:05	30	30	P	Y	KL	
54,55	EEOS	WEOS	1		9:13	9:18	30	30	P	Y	KL	
55,56	NEOS	SEOS	2		9:13	9:18	30	30	P	Y	KL	
55,57	EEOS	WEOS	3		9:15	9:20	30	30	P	Y	KL	
50,51	NEOS	SEOS	1		9:29	9:34	30	30	P	Y	KL	
50,52	EEOS	WEOS	2	↓	9:29	9:34	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15
PAGE# 1 of 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
59,EXT	SEOS	23M	1	OV	1000	10:05	30	30	P	N	KL	
59,EXT	23M	NEOS	2		1006	10:11	30	28	P	Y	KL	
57,59	EEOS	WEOS	1		1044	1049	30	30	P	Y	KL	
57,58	WEOS	EEOS	2		1044	1049	30	30	P	Y	KL	
58,60	EEOS	WEOS	3		1046	1051	30	30	P	Y	KL	
59,60	WEOS	EEOS	4		1046	1051	30	30	P	Y	KL	
59,59	NEOS	SEOS	5		1046	1051	30	30	P	Y	KL	
60,62	EEOS	WEOS	1		11:37	11:42	30	30	P	Y	KL	
60,61	WEOS	EEOS	2		11:37	11:42	30	30	P	Y	KL	
61,62	NEOS	SEOS	3		11:37	11:42	30	29	P	Y	KL	
61,63	EEOS	WEOS	4		11:40	1145	30	30	P	Y	KL	
62,63	WEOS	EEOS	5		11:40	1145	30	30	P	Y	KL	
62,64	EEOS	WEOS	1		1305	1310	30	28	P	Y	KL	
63,64	NEOS	SEOS	2		1305	1310	30	29	P	Y	KL	
64,65	EEOS	WEOS	3		1305	1310	30	30	P	Y	KL	
63,65	WEOS	EEOS	4		1305	1310	30	29	P	Y	KL	
60,EXT	SEOS	23K	1		1315	1320	30	28	P	N	KL	
60,EXT	23K	NEOS	2		1315	1320	30	28	P	Y	KL	
62,EXT	SEOS	23P	3		1315	1320	30	30	P	N	KL	
62,EXT	23P	NEOS	4	↓	1318	1323	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
64, EXT	SEOS	23R	1	OV	1318	1323	30	29	P	N	KL	
64, EXT	23R	NEOS	2		1319	1324	30	29	P	Y	KL	
65, EXT	SEOS	23T	3		1319	1324	30	30	P	N	KL	
65, 67	EEOS	WEOS	4		1350	1355	30	30	P	Y	KL	
66, 67	NEOS	SEOS	5		1350	1355	30	30	P	Y	KL	
67, 68	EEOS	WEOS	6		1351	1356	30	30	P	Y	KL	
66, 68	WEOS	EEOS	7		1351	1356	30	30	P	Y	KL	
65, 66	EEOS	WEOS	1		1350	1355	30	30	P	Y	KL	
68, 69	WEOS	EEOS	2		1413	1418	30	30	P	Y	KL	
68, 70	EEOS	WEOS	3		1413	1418	30	30	P	Y	KL	
69, 70	NEOS	SEOS	4		1413	1418	30	30	P	Y	KL	
67, EXT	SEOS	23Y	1		1420	1425	30	30	P	N	KL	
66, EXT	23T	NEOS	2		1420	1425	30	30	P	Y	KL	
67, EXT	23Y	NEOS	3		1423	1428	30	30	P	Y	KL	
68, EXT	SEOS	27A	4		1423	1428	30	30	P	N	KL	
68, EXT	27A	NEOS	5		1425	1430	30	30	P	Y	KL	
70, EXT	SEOS	27M	6		1425	1430	30	30	P	N	KL	
70, EXT	27M	NEOS	1		1428	1433	30	30	P	Y	KL	
71, 72	EEOS	WEOS	2		1436	1441	30	30	P	Y	KL	
71, EXT	SEOS	28W	3	↓	1635	1640	30	30	P	N	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-28-15
PAGE# 3 of 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
71, EXT	28W	NEOS	1	OV	1636	1641	30	30	P	Y	KL	
72, EXT	SEOS	28R	2		1638	1643	30	30	P	Y	KL	
73, EXT	NEOS	28R	3		1639	1644	30	30	P	Y	KL	
73,74	SEOS	NEOS	4		1640	16:45	30	30	P	Y	KL	
74,75	SEOS	NEOS	5		1642	16:47	30	30	P	Y	KL	
75,76	SEOS	NEOS	6	↓	1645	16:50	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY EN[illegible]NEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-29-15
PAGE# 1 OF 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
72,73	WEOS	EEOS	1	OV	6:30	6:35	30	30	P	Y	KL	
70,71	WEOS	EEOS	2	"	6:35	6:40	30	30	P	Y	KL	
70,76	EEOS	WEOS	3	"	6:35	6:40	30	30	P	Y	KL	
71,75	EEOS	WEOS	4	"	6:35	6:40	30	30	P	Y	KL	
71,74	EEOS	WEOS	5	"	6:35	6:40	30	30	P	Y	KL	
76,77	SEOS	NEOS	6	"	6:36	6:41	30	29	P	Y	KL	
77,78	SEOS	NEOS	1	"	7:50	7:55	30	29	P	Y	KL	
69,78	EEOS	WEOS	2	"	7:55	8:00	30	30	P	Y	KL	
69,77	WEOS	EEOS	3	"	7:55	8:00	30	30	P	Y	KL	
78,79	SEOS	NEOS	4	"	8:00	8:05	30	30	P	Y	KL	
75,80	SEOS	NEOS	5	"	8:13	8:18	30	30	P	Y	KL	
69,80	WEOS	EEOS	6	"	8:13	8:18	30	28	P	Y	KL	
69,79	EEOS	WEOS	7	"	8:13	8:18	30	29	P	Y	KL	
80,81	SEOS	NEOS	1	"	8:20	8:25	30	30	P	Y	KL	
68,81	WEOS	EEOS	2	"	8:20	8:25	30	30	P	Y	KL	
68,80	EEOS	WEOS	3	"	8:20	8:25	30	29	P	Y	KL	
81,82	SEOS	NEOS	4	"	8:24	8:29	30	30	P	Y	KL	
82,83	SEOS	NEOS	5	"	8:30	8:35	30	30	P	Y	KL	
68,83	WEOS	EEOS	6	"	8:30	8:35	30	30	P	Y	KL	
69,82	EEOS	WEOS	7	V	8:30	8:35	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: K
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 5-29-15
PAGE# 2 of 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
83,84	SEOS	NEOS	1	OV	8:33	8:38	30	29	P	Y	KL	
84,85	SEOS	NEOS	2		8:35	8:40	30	30	P	Y	KL	
68,85	WEOS	EEOS	3		8:35	8:40	30	30	P	Y	KL	
68,84	EEOS	WEOS	4		8:35	8:40	30	30	P	Y	KL	
66,85	WEOS	EEOS	5	↓	8:40	8:45	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY EN[illegible]EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 10-4-15
PAGE# 1 OF 4

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
101,102	NEOS	SEOS	3	OV	733	7:38	30	30	P	Y	KL	
100,101	NEOS	SEOS	2	OV	734	7:39	30	30	P	Y	KL	
99,100	NEOS	SEOS	1	OV	735	7:40	30	30	P	Y	KL	
98,99	NEOS	SEOS	5	OV	735	7:40	30	30	P	Y	KL	
97,98	NEOS	SEOS	4	OV	758	8:03	30	29	P	Y	KL	
96,97	NEOS	SEOS	6	OV	7:59	804	30	30	P	Y	KL	
95,96	NEOS	SEOS	8	OV	7:59	804	30	30	P	Y	KL	
94,95	NEOS	SEOS	7	OV	8:00	8:05	30	29	P	Y	KL	
93,94	NEOS	SEOS	10	OV	8:44	8:49	30	29	P	Y	KL	
92,93	NEOS	SEOS	9	OV	8:45	8:50	30	30	P	Y	KL	
91,92	NEOS	SEOS	2	OV	8:46	8:51	30	28	P	Y	KL	
90,91	NEOS	SEOS	1	OV	8:23	8:28	30	30	P	Y	KL	
89,90	NEOS	SEOS	3	OV	823	8:28	30	30	P	Y	KL	
88,89	NEOS	SEOS	5	OV	848	8:53	30	30	P	Y	KL	
87,88	NEOS	SEOS	4	OV	849	8:54	30	28	P	Y	KL	
86,87	NEOS	SEOS	6	OV	849	8:54	30	29	P	Y	KL	
35,86	NEOS	SEOS	8	OV	8:54	8:59	30	30	P	Y	KL	
2,103	SEOS	NEOS	9	OV	930	9:35	30	30	P	Y	KL	
4,104	NEOS	SEOS	2	OV	930	9:35	30	30	P	Y	KL	
103,104	NEOS	SEOS	7	OV	930	9:35	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
104,105	WEOS	EEOS	2	OV	9:30	9:35	30	30	P	Y	KL	
104,106	EEOS	WEOS	1	OV	9:52	9:57	30	30	P	Y	KL	
105,106	NEOS	SEOS	4	OV	9:58	9:57	30	29	P	Y	KL	
106,107	EEOS	WEOS	1	OV	11:18	11:23	30	30	P	Y	KL	
105,107	WEOS	EEOS	5	OV	11:18	11:23	30	30	P	Y	KL	
5,106	SEOS	WEOS	7	OV	11:19	11:24	30	29	P	Y	KL	
6,107	NEOS	SEOS	8	OV	11:19	11:24	30	30	P	Y	KL	
107,109	EEOS	WEOS	10	OV	11:22	11:27	30	30	P	Y	KL	
107,110	WEOS	EEOS	3	OV	11:22	11:27	30	30	P	Y	KL	
109,110	NEOS	SEOS	9	OV	11:22	11:27	30	30	P	Y	KL	
109,111	EEOS	WEOS	6	OV	11:37	11:42	30	30	P	Y	KL	
110,111	WEOS	EEOS	5	OV	11:37	11:42	30	29	P	Y	KL	
8,109	SEOS	NEOS	1	OV	11:45	11:50	30	30	P	Y	KL	
9,111	NEOS	SEOS	7	OV	1315	13:20	30	29	P	Y	KL	
10,113	SEOS	NEOS	2	OV	1315	13:20	30	30	P	Y	KL	
111,113	WEOS	EEOS	4	OV	1315	13:20	30	30	P	Y	KL	
113,114	EEOS	WEOS	8	OV	1317	13:22	30	28	P	Y	KL	
114,115	SEOS	NEOS	3	OV	1317	13:22	30	30	P	Y	KL	
115,116	EEOS	WEOS	6	OV	1320	13:25	30	30	P	Y	KL	
114,116	WEOS	EEOS	9	OV	1320	13:25	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15
PAGE# 3 of 4

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
39, 118	SEOS	NEOS	10	OV	1328	13:33	30	30	P	Y	KL	
35, 103	EEOS	WEOS	7	OV	1345	13:50	30	29	P	Y	KL	
86, 103	WEOS	EEOS	5	OV	13.45	13:50	30	30	P	Y	KL	
87, 103	EEOS	WEOS	4	OV	13:47	13:52	30	30	P	Y	KL	
88, 103	WEOS	EEOS	3	OV	13:47	13:52	30	30	P	Y	KL	
89, 104	EEOS	WEOS	2	OV	14:10	14:15	30	28	P	Y	KL	
90, 104	WEOS	EEOS	2	OV	14:10	14:15	30	30	P	Y	KL	
91, 104	EEOS	WEOS	8	OV	14 12	14:17	30	29	P	Y	KL	
92, 104	WEOS	EEOS	1	OV	14:12	14:17	30	30	P	Y	KL	
93, 105	EEOS	WEOS	9	OV	14 14	14:19	30	30	P	Y	KL	
94, 105	WEOS	EEOS	10	OV	14 14	14:19	30	30	P	Y	KL	
95, 105	EEOS	WEOS	4	OV	14:17	14:22	30	29	P	Y	KL	
96, 105	WEOS	EEOS	6	OV	14:17	14:22	30	30	P	Y	KL	
97, 108	EEOS	WEOS	5	OV	14 20	14:25	30	30	P	Y	KL	
98, 108	WEOS	EEOS	7	OV	1420	14:25	30	30	P	Y	KL	
99, 108	EEOS	WEOS	2	OV	1430	14:35	30	30	P	Y	KL	
100, 108	WEOS	EEOS	1	OV	1430	14:35	30	28	P	Y	KL	
101, 110	EEOS	WEOS	9	OV	14:35	14:40	30	30	P	Y	KL	
102, 110	WEOS	EEOS	3	OV	1435	1440	30	30	P	Y	KL	
107, 109	NEOS	SEOS	8	OV	1438	14:43	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS),
DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-4-15
PAGE# 4 of 4

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
111, 112	EEOS	WEOS	5	OV	1455	1500	30	30	P	Y	KL	
112, 113	NEOS	SEOS	7	OV	1455	1500	30	30	P	Y	KL	
112, 114	WEOS	EEOS	4	OV	1459	1503	30	28	P	Y	KL	
113, 114	EEOS	WEOS	6	OV	1459	1503	30	30	P	Y	KL	
116, 117	WEOS	EEOS	8	OV	1516	1521	30	30	P	Y	KL	
116, 118	EEOS	WEOS	3	OV	1516	1521	30	29	P	Y	KL	
117, 118	NEOS	SEOS	1	OV	1516	1521	30	30	P	Y	KL	
36, 115	NEOS	SEOS	9	OV	1520	1525	30	29	P	Y	KL	
37, 116	SEOS	NEOS	10	OV	1520	1525	30	30	P	Y	KL	
117, 119	WEOS	EEOS	2	OV	1519	1523	30	30	P	Y	KL	
118, 119	EEOS	WEOS	5	OV	1519	1523	30	30	P	Y	KL	
97, 108	EEOS	WEOS	7	OV	1520	1525	30	30	P	Y	KL	
98, 108	WEOS	EEOS	8	OV	1520	1525	30	29	P	Y	KL	
99, 108	EEOS	WEOS	4	OV	1530	1535	30	30	P	Y	KL	
100, 108	WEOS	EEOS	3	OV	1530	1535	30	30	P	Y	KL	
101, 110	EEOS	WEOS	6	OV	1535	1540	30	30	P	Y	KL	
102, 110	WEOS	EEOS	10	OV	1535	1540	30	30	P	Y	KL	
107, 108	NEOS	SEOS	2	OV	1538	1543	30	30	P	Y	KL	
108, 110	WEOS	EEOS	1	OV	1538	1543	30	30	P	Y	KL	
100, 110	WEOS	EEOS	7	OV	1538	1543	30	29	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-5-15
PAGE# 1 OF 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
40,119	NEOS	SEOS	2	OV	854	859	30	29	P	Y	KL	
42,121	SEOS	NEOS	1	OV	854	859	30	28	P	Y	KL	
44,122	NEOS	SEOS	3	OV	855	9:00	30	30	P	Y	KL	
121,122	WEOS	EEOS	5	OV	855	9:00	30	30	P	Y	KL	
45,124	NEOS	SEOS	4	OV	856	9:01	30	30	P	Y	KL	
122,124	WEOS	EEOS	7	OV	856	9:01	30	29	P	Y	KL	
124,125	WEOS	EEOS	6	OV	926	9:31	30	30	P	Y	KL	
123,124	NEOS	SEOS	2	OV	928	9:33	30	30	P	Y	KL	
123,125	WEOS	EEOS	4	OV	928	9:33	30	30	P	Y	KL	
119,121	EEOS	WEOS	1	OV	930	9:35	30	29	P	Y	KL	
119,120	WEOS	EEOS	3	OV	930	9:35	30	30	P	Y	KL	
120,121	NEOS	SEOS	2	OV	938	9:43	30	30	P	Y	KL	
120,122	WEOS	EEOS	5	OV	938	9:43	30	30	P	Y	KL	
122,123	WEOS	EEOS	7	OV	940	9:45	30	29	P	Y	KL	
47,125	NEOS	SEOS	4	OV	1009	10:14	30	30	P	Y	KL	
132,133	SEOS	NEOS	6	OV	1054	1059	30	29	P	Y	KL	
57,133	SEOS	NEOS	8	OV	1052	1057	30	28	P	Y	KL	
58,133	WEOS	EEOS	1	OV	1053	1058	30	28	P	Y	KL	
2,35	WEOS	EEOS	3	OV	1053	1058	30	29	P	Y	KL	
114,116	WEOS	EEOS	2	OV	1053	1058	30	28	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENG[illegible]ERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-6-15
PAGE# 1 of 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
49, 126	SEOS	NEOS	2	UM	10 00	1005	30	30	P	Y	KL	
125, 126	WEOS	EEOS	4		10 00	1005	30	30	P	Y	KL	
126, 128	EEOS	WEOS	3		1008	1013	30	30	P	Y	KL	
126, 127	WEOS	EEOS	1		1008	1013	30	30	P	Y	KL	
127, 128	SEOS	NEOS	5		1008	1013	30	29	P	Y	KL	
127, 129	WEOS	EEOS	6		1010	1015	30	30	P	Y	KL	
128, 129	EEOS	WEOS	8		10:10	1015	30	30	P	Y	KL	
50, 126	—	—	—	—	—	—	—	—	—	—	—	PATCHED SEAM R258
50, 128	SEOS	NEOS	7		10:16	1016	30	29	P	Y	KL	
52, 128	—	—	—	—	—	—	—	—	—	—	—	PATCH SEAM R259
52, 129	SEOS	NEOS	4		10:16	1021	30	30	P	Y	KL	
54, 130	SEOS	NEOS	2		1019	1024	30	28	P	Y	KL	
129, 130	WEOS	EEOS	1		10:19	1024	30	30	P	Y	KL	
55, 130	—	—	—	—	—	—	—	—	—	—	—	PATCH SEAM R-261
55, 131	SEOS	NEOS	3		1050	1055	30	28	P	Y	KL	
130, 131	WEOS	EEOS	6		1050	1055	30	30	P	Y	KL	
57, 131	NEOS	SEOS	5		1052	1057	30	29	P	Y	KL	
57, 133	SEOS	NEOS	8		1052	1057	30	28	P	Y	KL	
131, 133	WEOS	EEOS	7		1052	1057	30	30	P	Y	KL	
131, 132	WEOS	EEOS	6		1054	1059	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: K
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-6-15

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
150,151	NEOS	SEOS	2	UM	1137	1142	30	30	P	Y	KL	
149,151	SEOS	NEOS	3		1137	1142	30	30	P	Y	KL	
149,150	WEOS	EEOS	1		1137	1142	30	25	P	Y	KL	
148,149	WEOS	EEOS	4		1138	1143	30	30	P	Y	KL	
147,148	WEOS	EEOS	6		1139	1144	30	30	P	Y	KL	
148,151	NEOS	SEOS	8		1139	1144	30	30	P	Y	KL	
147,151	SEOS	NEOS	7		1139	1144	30	28	P	Y	KL	
146,147	WEOS	EEOS	5		1140	1145	30	30	P	Y	KL	
145,146	SEOS	NEOS	3		1140	1145	30	25	P	Y	KL	
145,147	SEOS	NEOS	1		1140	1145	30	30	P	Y	KL	
144,145	SEOS	NEOS	2		1140	1145	30	30	P	Y	KL	
145,151	WEOS	EEOS	9		1140	1145	30	30	P	Y	KL	
144,151	EEOS	WEOS	10		1140	1145	30	30	P	Y	KL	
151,152	SEOS	NEOS	11		1141	1146	30	25	P	Y	KL	
142,143	WEOS	EEOS	5		1152	1157	30	29	P	Y	KL	
143,152	EEOS	WEOS	7		1252	1257	30	30	P	Y	KL	
144,152	WEOS	EEOS	3		1252	1257	30	28	P	Y	KL	
143,144	SEOS	NEOS	6		1252	1257	30	30	P	Y	KL	
140,142	NEOS	SEOS	2		1253	1258	30	30	P	Y	KL	
140,141	SEOS	NEOS	4	↓	1253	1258	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: 9
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-6-15
PAGE# 3 OF 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
141,142	WEOS	EEOS	1	UM	1253	1258	30	30	P	Y	KL	
139,140	SEOS	NEOS	9		1254	1255	30	30	P	Y	KL	
137,138	SEOS	NEOS	8		1256	1301	30	30	P	Y	KL	
136,137	SEOS	NEOS	10		1257	1302	30	30	P	Y	KL	
138,139	SEOS	NEOS	11		1300	1305	30	28	P	Y	KL	
135,136	SEOS	NEOS	3		1303	1308	30	30	P	Y	KL	
134,135	SEOS	NEOS	5		1304	1309	30	29	P	Y	KL	
133,153	EEOS	WEOS	2		1304	1305	30	30	P	Y	KL	
132,153	WEOS	EEOS	7	↓	1304	1309	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-9-15
PAGE# 1 OF 1

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
133,153	EEOS	WEOS	2	UM	0959	1002	30	30	P	Y	KL	
132,153	WEOS	EEOS	3	"	0957	1002	30	30	P	Y	KL	
58,153	SEOS	NEOS	5	"	1005	1010	30	29	P	Y	KL	
60,153	NEOS	SEOS	1	"	1012	1017	30	30	P	Y	KL	
153,154	WEOS	EEOS	4	"	1014	1019	30	30	P	Y	KL	
60, 154	NEOS	SEOS	2	"	1308	1313	30	30	P	Y	KL	
61, 154	SEOS	NEOS	1	"	1308	1313	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY EN EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-10-15
PAGE# 1 of 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
151, 155	NEOS	SEOS	1	UM	7:39	7:44	30	30	P	Y	KL	
152, 155	SEOS	NEOS	2	UM	7:39	7:44	30	30	P	Y	KL	
156, 157	EEOS	WEOS	3	UM	7:42	7:47	30	30	P	Y	KL	
155, 157	NEOS	SEOS	4	UM	7:42	7:47	30	30	P	Y	KL	
155, 156	SEOS	NEOS	5	UM	7:42	7:47	30	30	P	Y	KL	
157, 160	NEOS	SEOS	6	UM	7:45	7:50	30	29	P	Y	KL	
160, 161	NEOS	SEOS	1	UM	7:47	7:52	30	30	P	Y	KL	
158, 159	WEOS	EEOS	2	UM	7:48	7:53	30	30	P	Y	KL	
159, 161	NEOS	SEOS	3	UM	7:48	7:53	30	30	P	Y	KL	
158, 161	SEOS	NEOS	4	UM	7:48	7:53	30	28	P	Y	KL	
156, 158	SEOS	NEOS	5	UM	7:51	7:56	30	30	P	Y	KL	
156, 159	SEOS	NEOS	6	UM	7:51	7:56	30	29	P	Y	KL	
159, 160	EEOS	WEOS	7	UM	7:51	7:56	30	30	P	Y	KL	
161, 162	SEOS	NEOS	1	UM	9:29	9:34	30	30	P	Y	KL	
161, 163	NEOS	SEOS	2	UM	9:29	9:34	30	30	P	Y	KL	
162, 163	EEOS	WEOS	3	UM	9:29	9:34	30	29	P	Y	KL	
162, 164	SEOS	NEOS	4	UM	9:30	9:35	30	28	P	Y	KL	
163, 164	NEOS	SEOS	5	UM	9:30	9:35	30	29	P	Y	KL	
142, 155	WEOS	EEOS	1	UM	10:20	10:25	30	30	P	Y	KL	
140, 155	EEOS	WEOS	2	UM	10:20	10:25	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-10-15
PAGE# 2 of 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
139,156	WEOS	EEOS	1	RS	1024	1031	30	30	P	Y	KL	
139,155	EEOS	WEOS	2	RS	1026	1031	30	30	P	Y	KL	
137,158	WEOS	EEOS	3	RS	1033	1038	30	30	P	Y	KL	
137,161	EEOS	WEOS	4	RS	1033	1038	30	30	P	Y	KL	
138,158	WEOS	EEOS	5	RS	1033	1038	30	29	P	Y	KL	
136,161	EEOS	WEOS	6	RS	1038	1043	30	28	P	Y	KL	
135,162	EEOS	WEOS	1	RS	1040	1045	30	30	P	Y	KL	
134,164	WEOS	EEOS	2	RS	1040	1045	30	30	P	Y	KL	
138,156	WEOS	EEOS	3	RS	1040	1045	30	28	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY EN[illegible]ERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 6-13-15
PAGE# 1 of 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
153, 166	SEOS	NEOS	3	UM	0842	0847	30	30	P	Y	KL	
132, 166	NEOS	SEOS	4	"	0842	0847	30	29	P	Y	KL	
131, 1666	SEOS	NEOS	2	"	0843	0848	30	30	P	Y	KL	
130, 166	NEOS	SEOS	1	"	0843	0848	30	29	P	Y	KL	
129, 166	SEOS	NEOS	5	"	0851	0856	30	30	P	Y	KL	
127, 166	NEOS	SEOS	7	"	0851	0856	30	30	P	Y	KL	
126, 166	SEOS	NEOS	6	"	0852	0857	30	29	P	Y	KL	
125, 166	NEOS	SEOS	4	"	0852	0857	30	30	P	Y	KL	
123, 166	SEOS	NEOS	3	"	0902	0907	30	30	P	Y	KL	
122, 166	NEOS	SEOS	1	"	0902	0907	30	30	P	Y	KL	
120, 166	SEOS	NEOS	2	"	0903	0908	30	30	P	Y	KL	
119, 166	NEOS	SEOS	5	"	0903	0908	30	30	P	Y	KL	
117, 166	SEOS	NEOS	7	"	0913	0918	30	30	P	Y	KL	
116, 166	NEOS	SEOS	8	"	0913	0918	30	30	P	Y	KL	
114, 166	SEOS	NEOS	10	"	0914	0919	30	30	P	Y	KL	
112, 166	NEOS	SEOS	3	"	0914	0919	30	30	P	Y	KL	
111, 166	SEOS	NEOS	6	"	0922	0919	30	30	P	Y	KL	
110, 166	NEOS	SEOS	4	"	0922	0927	30	30	P	Y	KL	
102, 166	NEOS	SEOS	8	"	0922	0927	30	30	P	Y	KL	
164, 166	SEOS	37 D	5	"	0942	0927	30	30	P	N	KL	

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BRANTLEY ENGINEERING, LLC

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SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
164,166	37D	NEOS	1	LM	0942	9:47	30	30	P	Y	KL	
164,165	SEOS	NEOS	2	LM	0942	0947	30	30	P	Y	KL	
165,166	SEOS	NEOS	3		0942	0947	30	30	P	Y	KL	
167,168	SEOS	NEOS	1		1043	1048	30	30	P	Y	KL	
167,169	SEOS	NEOS	2		1043	1048	30	30	P	Y	KL	
164,168	SEOS	NEOS	3		1044	1049	30	30	P	Y	KL	
164,169	SEOS	NEOS	4		1044	1049	30	30	P	Y	KL	
168,169	WEOS	EEOS	5		1049	1054	30	29	P	Y	KL	
165,168	WEOS	EEOS	1		1056	1101	30	30	P	Y	KL	
166,167	EEOS	WEOS	2		1056	1101	30	30	P	Y	KL	
154,167	NEOS	SEOS	3		1100	1105	30	30	P	Y	KL	
154,170	EEOS	WEOS	4		1100	1105	30	30	P	Y	KL	
167,170	SEOS	NEOS	5		1116	1121	30	30	P	Y	KL	
167,171	SEOS	NEOS	6		11:16	11:21	30	30	P	Y	KL	
170,171	EEOS	WEOS	1		1116	11 21	30	30	P	Y	KL	
61,170	SEOS	NEOS	2		11:32	11:37	30	30	P	Y	KL	
63,170	SEOS	NEOS	3		11:32	11:37	30	30	P	Y	KL	
63,171	SEOS	NEOS	4		11:32	1137	30	30	P	Y	KL	
65,167	SEOS	NEOS	5		11:33	11:38	30	30	P	Y	KL	
164,172	SEOS	NEOS	1	J	11:44	11:49	30	30	P	Y	KL	

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BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
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PAGE# 3 of 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
134,172	SEOS	NEOS	1	WM	11:44	11:49	30	30	P	Y	KL	
169,172	WEOS	EEOS	1		1315	1324	30	30	P	Y	KL	
172,173	SEOS	NEOS	2		1326	1331	30	30	P	Y	KL	
65,172	WEOS	EEOS	3		1326	1331	30	30	P	Y	KL	
167,172	EEOS	WEOS	4		1326	1331	30	30	P	Y	KL	
85,173	SEOS	NEOS	5		1327	1332	30	30	P	Y	KL	
66,173	SEOS	NEOS	6	↓	1327	13:32	30	30	P	Y	KL	

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REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY EN[illegible]EERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
PRIMARY: X
SECONDARY:
OTHER:

Brantley Engineering, LLC

OWNER: Omni Waste of Osceola County, LLC
ENGINEER: Geosyntec
INSTALLER: Comanco
DATE: 7-10-2015
PAGE# 1 of 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
166,174	SEOS	NEOS	1	UM	905	910	30	30	P	N	EP	
174,176	SEOS	NEOS	2	UM	949	954	30	30	P	Y	EP	
175,176	EEOS	WEOS	3	UM	949	954	30	30	P	Y	EP	
174,175	SEOS	NEOS	4	UM	952	957	30	30	P	Y	EP	
175,177	SEOS	NEOS	1	UM	955	1000	30	30	P	Y	EP	
175,178	SEOS	NEOS	2	UM	1004	1009	30	30	P	Y	EP	
177,178	EEOS	WEOS	3	UM	1004	1009	30	30	P	Y	EP	
178,179	SEOS	NEOS	4	UM	1007	1012	30	30	P	Y	EP	
177,179	SEOS	NEOS	5	UM	1007	1012	30	30	P	N	EP	
177,179	SEOS	NEOS	6	UM	1010	1015	30	29	P	Y	EP	
179,180	SEOS	NEOS	2	UM	1018	1023	30	30	P	Y	EP	
179,181	SEOS	NEOS	3	UM	1018	1023	30	30	P	Y	EP	
180,181	EEOS	WEOS	4	UM	1018	1023	30	30	P	Y	EP	
180,182	SEOS	NEOS	1	UM	1059	1104	30	30	P	Y	EP	
181,182	SEOS	NEOS	5	UM	1059	1104	30	30	P	Y	EP	
181,183	SEOS	NEOS	6	UM	1100	1105	30	30	P	Y	EP	
182,183	EEOS	WEOS	3	UM	1100	1105	30	30	P	Y	EP	
182,184	SEOS	NEOS	1	UM	1109	1114	30	30	P	Y	EP	
183,184	SEOS	NEOS	2	UM	1109	1114	30	30	P	Y	EP	
176,177	SEOS	NEOS	6	UM	955	1000	30	30	P	Y	EP	

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REVIEWED BY : S. NEJAD
DATE : 8-6-15

BRANTLEY ENGINEERING, LLC

GEOMEMBRANE PRESSURE TEST LOG

PROJECT # : 2015-101
PROJECT DESCRIPTION : JED Cell 11 Construction
PROJECT LOCATION : St. Cloud, Florida
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INSTALLER: Comanco
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PAGE# 2 of 2

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
201, 202	SEOS	NEOS	2	UM	224	229	30	29	P	Y	BP	
184, 202	SEOS	NEOS	1	UM	218	223	30	29	P	Y	BP	
184, 200	SEOS	NEOS	3	UM	218	223	30	30	P	Y	KL	

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PAGE# 1 of 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
200,202	SEOS	NEOS	2	JZ	846	851	30	30	P	Y	KL	
200,201	WEOS	EEOS	1	JZ	846	851	30	30	P	Y	KL	
184,199	SEOS	NEOS	4	"	854	859	30	30	P	Y	KL	
199,200	WEOS	EEOS	5	"	854	859	30	30	P	Y	KL	
198,199	WEOS	EEOS	3	"	857	902	30	30	P	Y	KL	
184,198	SEOS	NEOS	7	"	857	902	30	30	P	Y	KL	
197,198	WEOS	EEOS	6	"	859	904	30	30	P	Y	KL	
184,197	SEOS	NEOS	9	"	855	904	30	30	P	Y	KL	
196,197	WEOS	EEOS	8	"	905	910	30	30	P	Y	KL	
184,196	SEOS	NEOS	10	"	905	910	30	30	P	Y	KL	
195,196	WEOS	EEOS	3	"	9:10	9:15	30	30	P	Y	KL	
184,195	SEOS	NEOS	5	"	9:10	9:15	30	30	P	Y	KL	
194,195	WEOS	EEOS	7	"	9:25	9:30	30	29	P	Y	KL	
184,194	SEOS	NEOS	4	"	9:25	9:30	30	30	P	Y	KL	
193,194	WEOS	EEOS	1	"	9:28	9:33	30	29	P	Y	KL	
184,193	SEOS	NEOS	7	"	9:28	9:33	30	29	P	Y	KL	
192,193	WEOS	EEOS	6	"	930	9:35	30	30	P	Y	KL	
184,192	SEOS	NEOS	9	"	930	9:35	30	30	P	Y	KL	
191,192	WEOS	EEOS	8	"	931	9:36	30	29	P	Y	KL	
184,191	SEOS	NEOS	10	"	931	9:36	30	29	P	Y	KL	

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BRANTLEY EN EERING, LLC

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PROJECT LOCATION : St. Cloud, Florida
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PAGE# 2 OF 3

SEAM NUMBER	SEAM SECTION* START POINT	SEAM SECTION* FINISH POINT	PRESS GUAGE NUMBER	TECH ID	TIME START	TIME FINISH	PRESSURE (PSI) INITIAL	PRESSURE (PSI) FINAL	PASS/ FAIL	SEAM COMPLETE Y/N	QA MONITOR	REMARKS
190, 191	WEOS	45 M	5	JZ	0940	945	30	30	P	N	KL	
184, 190	SEOS	NEOS	3	"	0940	945	30	30	P	Y	KL	
190, 191	45 M	45K	2	"	946	951	30	30	P	N	KL	
190, 191	45 K	EEOS	4	"	946	951	30	29	P	Y	KL	
184, 189	SEOS	NEOS	8	"	953	958	30	30	P	Y	KL	
189, 190	WEOS	EEOS	7	"	953	958	30	30	P	Y	KL	
184, 188	SEOS	NEOS	2	"	957	1002	30	30	P	Y	KL	
188, 189	WEOS	EEOS	9	"	957	1002	30	30	P	Y	KL	
187, 188	45 J	EEOS	10	"	1000	1005	30	30	P	Y	KL	
187, 188	45 J	WEOS	5	—	—	—	—	—	—	—	KL	CAPPED
184, 187	NEOS	SEOS	4	"	1004	1009	30	30	P	Y	KL	
184, 186	SEOS	NEOS	1	"	1004	1009	30	30	P	Y	KL	
186, 187	WEOS	EEOS	3	"	1004	1009	30	30	P	Y	KL	
184, 185	SEOS	NEOS	6	"	1007	1012	30	30	P	Y	KL	
185, 186	WEOS	EEOS	8	"	1007	1012	30	30	P	Y	KL	
150, 185	WEOS	EEOS	2	"	1009	1014	30	29	P	Y	KL	
150, 184	EEOS	WEOS	7	"	1011	1016	30	30	P	Y	KL	
151, 184	EEOS	WEOS	10	"	1011	1016	30	30	P	Y	KL	
155, 182	WEOS	EEOS	9	"	1014	1019	30	30	P	Y	KL	
155, 180	EEOS	WEOS	5	"	1014	1019	30	30	P	Y	KL	

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155, 180	EEOS	WEOS	1	JZ	1014	1019	30	30	P	Y	KL	
157, 180	WEOS	EEOS	3	"	1018	1023	30	30	P	Y	KL	
157, 179	EEOS	WEOS	4	"	1018	1023	30	30	P	Y	KL	
160, 179	WEOS	EEOS	8	"	1023	1028	30	29	P	Y	KL	
160, 178	EEOS	WEOS	6	"	1023	1028	30	29	P	Y	KL	
161, 178	WEOS	EEOS	7	"	1027	1032	30	29	P	Y	KL	
161, 175	EEOS	WEOS	10	"	1027	1032	30	29	P	Y	KL	
163, 175	WEOS	EEOS	5	"	1031	1036	30	30	P	Y	KL	
163, 174	EEOS	WEOS	2	"	1031	1036	30	30	P	Y	KL	
164, 174	WEOS	EEOS	9	"	1035	1040	30	30	P	Y	KL	
164, 174	NEOS	SEOS	3	"	1035	1040	30	30	P	Y	KL	

*REFERENCE SEAM ENDPOINTS FROM END OF SEAM (EOS), DEFECT NUMBER OR A POINT LOCATION ON A SEAM

REVIEWED BY : S. NEJAD
DATE : 8-6-15

Section 7
Geomembrane Destructive Samples Laboratory Results

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/22/2015

May 22, 2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of eight (8) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **May 22, 2015**

REFERENCE TRI JOB NO.: G150378

DATE RECEIVED: May 22, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

	SAMPLE ID	***TRI-CA CONTROL NUMBER***
1.	DFP-1 P5/ 6	104078
2.	DFP-2 P8/ 6	104079
3.	DFP-3 P5/ 7	104080
4.	DFP-4 P8/ 9	104081
5.	DFP-5 P13/ 16	104082
6.	DFP-6 P12/ 13	104083
7.	DFP-7 P27/ 26	104084
8.	DFP-8 P16/ 23	104085

TESTS REQUIRED / PERFORMED:

	TEST METHOD	***DESCRIPTION***
1.	ASTM D6392	Shear Bond Strength
2.	ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 4.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

5 Pages Total *(including this sheet)*

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **22-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150378**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 22-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-1	**104078**	165	> 50%	BRK		1 Outside	127	0	SE1	
P5 /4		167	> 50%	BRK		2 Outside	128	0	SE1	
		165	> 50%	BRK		3 Outside	127	0	SE1	
		160	> 50%	BRK		4 Outside	113	0	SE1	
		162	> 50%	BRK		5 Outside	119	0	SE1	
						AVG:	**123**			91
						STD. DEV.	**7**			
						1 Inside	110	0	SE1	
						2 Inside	112	0	SE1	
						3 Inside	110	0	SE1	
						4 Inside	111	0	SE1	
						5 Inside	116	0	SE1	
	AVG.	**164**			120	**AVG:**	**112**			91
	STD. DEV.	**3**				STD. DEV.	**2**			
DFP-2	**104079**	160	> 50%	BRK		1 Outside	119	0	SE1	
P8/ 6		161	> 50%	BRK		2 Outside	114	0	SE1	
		163	> 50%	BRK		3 Outside	117	0	SE1	
		161	> 50%	BRK		4 Outside	127	0	SE1	
		145	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**119**			91
						STD. DEV.	**5**			
						1 Inside	108	0	SE1	
						2 Inside	138	0	SE1	
						3 Inside	109	0	SE1	
						4 Inside	130	0	SE1	
						5 Inside	143	0	SE1	
	AVG:	**158**			120	**AVG:**	**126**			91
	STD. DEV.	**7**				STD. DEV.	**16**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **22-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150378**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 22-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-3	**104080**	163	> 50%	BRK		1 Outside	111	0	SE1	
P5/ 7		163	> 50%	BRK		2 Outside	118	0	SE1	
		162	> 50%	BRK		3 Outside	117	0	SE1	
		164	> 50%	BRK		4 Outside	114	0	SE1	
		164	> 50%	BRK		5 Outside	121	0	SE1	
						AVG:	**116**			91
						STD. DEV.	**4**			
						1 Inside	117	0	SE1	
						2 Inside	108	0	SE1	
						3 Inside	127	0	SE1	
						4 Inside	122	0	SE1	
						5 Inside	113	0	SE1	
	AVG.	**163**			120	**AVG:**	**117**			91
	STD. DEV.	**1**				STD. DEV.	**7**			
DFP-4	**104081**	160	> 50%	BRK		1 Outside	121	0	SE1	
P8/ 9		166	> 50%	BRK		2 Outside	117	0	SE1	
		164	> 50%	BRK		3 Outside	113	0	SE1	
		160	> 50%	BRK		4 Outside	120	0	SE1	
		162	> 50%	BRK		5 Outside	121	0	SE1	
						AVG:	**118**			91
						STD. DEV.	**3**			
						1 Inside	124	0	SE1	
						2 Inside	125	0	SE1	
						3 Inside	131	0	SE1	
						4 Inside	145	0	SE1	
						5 Inside	126	0	SE1	
	AVG:	**162**			120	**AVG:**	**130**			91
	STD. DEV.	**3**				STD. DEV.	**9**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **22-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150378**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 22-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-5	**104082**	163	> 50%	BRK		1 Outside	128	0	SE1	
P13/ 16		158	> 50%	BRK		2 Outside	122	0	SE1	
		163	> 50%	BRK		3 Outside	115	0	SE1	
		168	> 50%	BRK		4 Outside	131	0	SE1	
		166	> 50%	BRK		5 Outside	129	0	SE1	
						AVG:	**125**			91
						STD. DEV.	**7**			
						1 Inside	130	0	SE1	
						2 Inside	128	0	SE1	
						3 Inside	131	0	SE1	
						4 Inside	132	0	SE1	
						5 Inside	145	0	SE1	
	AVG.	**164**			120	**AVG:**	**133**			91
	STD. DEV.	**4**				STD. DEV.	**7**			
DFP-6	**104083**	183	> 50%	BRK		1 Outside	135	0	SE1	
P12/ 13		188	> 50%	BRK		2 Outside	131	0	SE1	
		182	> 50%	BRK		3 Outside	127	0	SE1	
		183	> 50%	BRK		4 Outside	125	0	SE1	
		183	> 50%	BRK		5 Outside	116	0	SE1	
						AVG:	**127**			91
						STD. DEV.	**7**			
						1 Inside	115	0	SE1	
						2 Inside	139	0	SE1	
						3 Inside	136	0	SE1	
						4 Inside	142	0	SE1	
						5 Inside	131	0	SE1	
	AVG:	**184**			120	**AVG:**	**133**			91
	STD. DEV.	**2**				STD. DEV.	**11**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 4.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **22-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150378**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 22-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-7	**104084**	163	> 50%	BRK		1 Outside	112	0	SE1	
P27/ 26		160	> 50%	BRK		2 Outside	109	0	SE1	
		164	> 50%	BRK		3 Outside	115	0	SE1	
		162	> 50%	BRK		4 Outside	121	0	SE1	
		160	> 50%	BRK		5 Outside	113	0	SE1	
						AVG:	**114**			91
						STD. DEV.	**4**			
						1 Inside	106	0	SE1	
						2 Inside	104	0	SE1	
						3 Inside	106	0	SE1	
						4 Inside	122	0	SE1	
						5 Inside	130	0	SE1	
	AVG.	**162**			120	**AVG:**	**114**			91
	STD. DEV.	**2**				STD. DEV.	**12**			
DFP-8	**104085**	149	> 50%	BRK		1 Outside	148	0	SE1	
P16/ 23		163	> 50%	BRK		2 Outside	136	0	SE1	
		160	> 50%	BRK		3 Outside	127	0	SE1	
		161	> 50%	BRK		4 Outside	148	0	SE1	
		161	> 50%	BRK		5 Outside	145	0	SE1	
						AVG:	**141**			91
						STD. DEV.	**9**			
						1 Inside	128	0	SE1	
						2 Inside	133	0	SE1	
						3 Inside	132	0	SE1	
						4 Inside	144	0	SE1	
						5 Inside	133	0	SE1	
	AVG:	**159**			120	**AVG:**	**134**			91
	STD. DEV.	**6**				STD. DEV.	**6**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/27/2015

May 27, 2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of eleven (11) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **May 27, 2015**

REFERENCE TRI JOB NO.: G150392

DATE RECEIVED: May 27, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

	SAMPLE ID	***TRI-CA CONTROL NUMBER***
1.	DFP-9 P36/ 11	104139
2.	DFP-10 P37/ 36	104140
3.	DFP-11 P39/ 37	104141
4.	DFP-12 P39/ Tie in	104142
5.	DFP-13 P42/ 41	104143
6.	DFP-14 P45/ 44	104144
7.	DFP-15 P46/ 47	104145
8.	DFP-16 P51/ 49	104146
9.	DFP-17 P54/ 52	104147
10.	DFP-18 P51/ 52	104148
11.	DFP-19 P57/ 55	104149

TESTS REQUIRED / PERFORMED:

	TEST METHOD	***DESCRIPTION***
1.	ASTM D6392	Shear Bond Strength
2.	ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 6.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

7 Pages Total *(including this sheet)*

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **27-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150392**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 27-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-9	**104139**	160	> 50%	BRK		1 Outside	125	0	SE1	
P36/ 11		171	> 50%	BRK		2 Outside	118	0	SE1	
		162	> 50%	BRK		3 Outside	113	0	SE1	
		169	> 50%	BRK		4 Outside	116	0	SE1	
		166	> 50%	BRK		5 Outside	116	0	SE1	
						AVG:	**118**			91
						STD. DEV.	**5**			
						1 Inside	130	0	SE1	
						2 Inside	127	0	SE1	
						3 Inside	110	0	SE1	
						4 Inside	112	0	SE1	
						5 Inside	128	0	SE1	
	AVG.	**166**			120	**AVG:**	**121**			91
	STD. DEV.	**5**				STD. DEV.	**10**			
DFP-10	**104140**	156	> 50%	BRK		1 Outside	120	0	SE1	
P37/ 36		166	> 50%	BRK		2 Outside	125	0	SE1	
		168	> 50%	BRK		3 Outside	114	0	SE1	
		168	> 50%	BRK		4 Outside	115	0	SE1	
		166	> 50%	BRK		5 Outside	119	0	SE1	
						AVG:	**119**			91
						STD. DEV.	**4**			
						1 Inside	130	0	SE1	
						2 Inside	128	0	SE1	
						3 Inside	123	0	SE1	
						4 Inside	111	0	SE1	
						5 Inside	116	0	SE1	
	AVG:	**165**			120	**AVG:**	**122**			91
	STD. DEV.	**5**				STD. DEV.	**8**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **27-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150392**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 27-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-11	**104141**	156	> 50%	BRK		1 Outside	119	0	SE1	
P39/ 37		166	> 50%	BRK		2 Outside	113	0	SE1	
		163	> 50%	BRK		3 Outside	120	0	SE1	
		164	> 50%	BRK		4 Outside	128	0	SE1	
		161	> 50%	BRK		5 Outside	115	0	SE1	
						AVG:	**119**			91
						STD. DEV.	**6**			
						1 Inside	121	0	SE1	
						2 Inside	115	0	SE1	
						3 Inside	120	0	SE1	
						4 Inside	137	0	SE1	
						5 Inside	132	0	SE1	
	AVG.	**162**			120	**AVG:**	**125**			91
	STD. DEV.	**4**				STD. DEV.	**9**			
DFP-12	**104142**	165	> 50%	BRK		1 Outside	121	0	SE1	
P39/ Tie in		152	> 50%	BRK		2 Outside	116	0	SE1	
		157	> 50%	BRK		3 Outside	117	0	SE1	
		154	> 50%	BRK		4 Outside	121	0	SE1	
		157	> 50%	BRK		5 Outside	124	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**3**			
						1 Inside	127	0	SE1	
						2 Inside	126	0	SE1	
						3 Inside	122	0	SE1	
						4 Inside	125	0	SE1	
						5 Inside	120	0	SE1	
	AVG:	**157**			120	**AVG:**	**124**			91
	STD. DEV.	**5**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **27-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150392**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 27-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-13	**104143**	163	> 50%	BRK		1 Outside	119	0	SE1	
P42/ 41		169	> 50%	BRK		2 Outside	117	0	SE1	
		162	> 50%	BRK		3 Outside	122	0	SE1	
		165	> 50%	BRK		4 Outside	117	0	SE1	
		165	> 50%	BRK		5 Outside	128	0	SE1	
						AVG:	**121**			91
						STD. DEV.	**5**			
						1 Inside	114	0	SE1	
						2 Inside	117	0	SE1	
						3 Inside	113	0	SE1	
						4 Inside	111	0	SE1	
						5 Inside	115	0	SE1	
	AVG.	**165**			120	**AVG:**	**114**			91
	STD. DEV.	**3**				STD. DEV.	**2**			
DFP-14	**104144**	161	> 50%	BRK		1 Outside	129	0	SE1	
P45/ 44		162	> 50%	BRK		2 Outside	117	0	SE1	
		163	> 50%	BRK		3 Outside	109	0	SE1	
		163	> 50%	BRK		4 Outside	139	0	SE1	
		166	> 50%	BRK		5 Outside	143	0	SE1	
						AVG:	**127**			91
						STD. DEV.	**14**			
						1 Inside	124	0	SE1	
						2 Inside	143	0	SE1	
						3 Inside	122	0	SE1	
						4 Inside	121	0	SE1	
						5 Inside	124	0	SE1	
	AVG:	**163**			120	**AVG:**	**127**			91
	STD. DEV.	**2**				STD. DEV.	**9**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

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TABLE 4.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **27-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150392**

QC'd By: María Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 27-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-15	**104145**	168	> 50%	BRK		1 Outside	120	0	SE1	
P46/ 47		167	> 50%	BRK		2 Outside	118	0	SE1	
		168	> 50%	BRK		3 Outside	116	0	SE1	
		171	> 50%	BRK		4 Outside	124	0	SE1	
		170	> 50%	BRK		5 Outside	132	0	SE1	
						AVG:	**122**			91
						STD. DEV.	**6**			
						1 Inside	130	0	SE1	
						2 Inside	122	0	SE1	
						3 Inside	120	0	SE1	
						4 Inside	117	0	SE1	
						5 Inside	129	0	SE1	
	AVG.	**169**			120	**AVG:**	**124**			91
	STD. DEV.	**2**				STD. DEV.	**6**			
DFP-16	**104146**	175	> 50%	BRK		1 Outside	109	0	SE1	
P51/ 49		180	> 50%	BRK		2 Outside	124	0	SE1	
		176	> 50%	BRK		3 Outside	113	0	SE1	
		174	> 50%	BRK		4 Outside	113	0	SE1	
		171	> 50%	BRK		5 Outside	115	0	SE1	
						AVG:	**115**			91
						STD. DEV.	**6**			
						1 Inside	105	0	SE1	
						2 Inside	116	0	SE1	
						3 Inside	117	0	SE1	
						4 Inside	143	0	SE1	
						5 Inside	126	0	SE1	
	AVG:	**175**			120	**AVG:**	**121**			91
	STD. DEV.	**3**				STD. DEV.	**14**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 5.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **27-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150392**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 27-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-17	**104147**	169	> 50%	BRK		1 Outside	137	0	SE1	
P54/ 52		174	> 50%	BRK		2 Outside	143	0	SE1	
		169	> 50%	BRK		3 Outside	144	0	SE1	
		172	> 50%	BRK		4 Outside	135	0	SE1	
		164	> 50%	BRK		5 Outside	146	0	SE1	
						AVG:	**141**			91
						STD. DEV.	**5**			
						1 Inside	111	0	SE1	
						2 Inside	107	0	SE1	
						3 Inside	111	0	SE1	
						4 Inside	116	0	SE1	
						5 Inside	115	0	SE1	
	AVG.	**170**			120	**AVG:**	**112**			91
	STD. DEV.	**4**				STD. DEV.	**4**			
DFP-18	**104148**	166	> 50%	BRK		1 Outside	150	0	SE1	
P51/ 52		175	> 50%	BRK		2 Outside	157	0	SE1	
		170	> 50%	BRK		3 Outside	147	0	SE1	
		171	> 50%	BRK		4 Outside	148	0	SE1	
		167	> 50%	BRK		5 Outside	151	0	SE1	
						AVG:	**151**			91
						STD. DEV.	**4**			
						1 Inside	135	0	SE1	
						2 Inside	138	0	SE1	
						3 Inside	157	0	SE1	
						4 Inside	153	0	SE1	
						5 Inside	158	0	SE1	
	AVG:	**170**			120	**AVG:**	**148**			91
	STD. DEV.	**4**				STD. DEV.	**11**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 5)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 6.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **27-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150392**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 27-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-19	**104149**	164	> 50%	BRK		1 Outside	113	0	SE1	
P57/ 55		167	> 50%	BRK		2 Outside	115	0	SE1	
		162	> 50%	BRK		3 Outside	115	0	SE1	
		163	> 50%	BRK		4 Outside	128	0	SE1	
		171	> 50%	BRK		5 Outside	118	0	SE1	
						AVG:	**118**			91
						STD. DEV.	**6**			
						1 Inside	104	0	SE1	
						2 Inside	131	0	SE1	
						3 Inside	104	0	SE1	
						4 Inside	137	0	SE1	
						5 Inside	106	0	SE1	
	AVG.	**165**			120	**AVG:**	**116**			91
	STD. DEV.	**4**				STD. DEV.	**16**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 6)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

May 29, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/29/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of six (6) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **May 29, 2015**

REFERENCE TRI JOB NO.: G150409

DATE RECEIVED: May 29, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI-CA CONTROL NUMBER*
1. DFP-20	104219
2. DFP-21	104220
3. DFP-22	104221
4. DFP-23	104222
5. DFP-24	104223
6. DFP-25	104224

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D6392	Shear Bond Strength
2. ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 3.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

4 Pages Total *(including this sheet)*

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **29-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150409**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 29-May-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				PEEL EVALUATION				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-20	**104219**	170	> 50%	BRK		1 Outside	115	0	SE1	
		171	> 50%	BRK		2 Outside	123	0	SE1	
		169	> 50%	BRK		3 Outside	119	0	SE1	
		171	> 50%	BRK		4 Outside	117	0	SE1	
		165	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**119**			91
						STD. DEV.	**3**			
						1 Inside	134	0	SE1	
						2 Inside	142	0	SE1	
						3 Inside	133	0	SE1	
						4 Inside	125	0	SE1	
						5 Inside	138	0	SE1	
	AVG.	**169**			120	**AVG:**	**134**			91
	STD. DEV.	**2**				STD. DEV.	**6**			
DFP-21	**104220**	157	> 50%	BRK		1 Outside	116	0	SE1	
		166	> 50%	BRK		2 Outside	121	0	SE1	
		159	> 50%	BRK		3 Outside	112	0	SE1	
		164	> 50%	BRK		4 Outside	117	0	SE1	
		162	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**117**			91
						STD. DEV.	**4**			
						1 Inside	128	0	SE1	
						2 Inside	128	0	SE1	
						3 Inside	120	0	SE1	
						4 Inside	128	0	SE1	
						5 Inside	116	0	SE1	
	AVG:	**162**			120	**AVG:**	**124**			91
	STD. DEV.	**4**				STD. DEV.	**6**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **29-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150409**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 29-May-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				PEEL EVALUATION				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-22	**104221**	164	> 50%	BRK		1 Outside	128	0	SE1	
		169	> 50%	BRK		2 Outside	118	0	SE1	
		169	> 50%	BRK		3 Outside	123	0	SE1	
		167	> 50%	BRK		4 Outside	131	0	SE1	
		168	> 50%	BRK		5 Outside	127	0	SE1	
						AVG:	**125**			91
						STD. DEV.	**5**			
						1 Inside	141	0	SE1	
						2 Inside	114	0	SE1	
						3 Inside	140	0	SE1	
						4 Inside	141	0	SE1	
						5 Inside	140	0	SE1	
	AVG.	**167**			120	**AVG:**	**135**			91
	STD. DEV.	**2**				STD. DEV.	**12**			
DFP-23	**104222**	167	> 50%	BRK		1 Outside	117	0	SE1	
		168	> 50%	BRK		2 Outside	122	0	SE1	
		169	> 50%	BRK		3 Outside	117	0	SE1	
		170	> 50%	BRK		4 Outside	110	0	SE1	
		168	> 50%	BRK		5 Outside	116	0	SE1	
						AVG:	**116**			91
						STD. DEV.	**4**			
						1 Inside	122	0	SE1	
						2 Inside	130	0	SE1	
						3 Inside	124	0	SE1	
						4 Inside	128	0	SE1	
						5 Inside	124	0	SE1	
	AVG:	**168**			120	**AVG:**	**126**			91
	STD. DEV.	**1**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **29-May-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150409**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 29-May-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-24	**104223**	162	> 50%	BRK		1 Outside	153	0	SE1	
		164	> 50%	BRK		2 Outside	155	0	SE1	
		159	> 50%	BRK		3 Outside	152	0	SE1	
		159	> 50%	BRK		4 Outside	152	0	SE1	
		159	> 50%	BRK		5 Outside	144	0	SE1	
						AVG:	**151**			91
						STD. DEV.	**4**			
						1 Inside	147	0	SE1	
						2 Inside	157	0	SE1	
						3 Inside	159	0	SE1	
						4 Inside	152	0	SE1	
						5 Inside	139	0	SE1	
	AVG.	**161**			120	**AVG:**	**151**			91
	STD. DEV.	**2**				STD. DEV.	**8**			
DFP-25	**104224**	156	> 50%	BRK		1 Outside	152	0	SE1	
		154	> 50%	BRK		2 Outside	146	0	SE1	
		162	> 50%	BRK		3 Outside	152	0	SE1	
		155	> 50%	BRK		4 Outside	148	0	SE1	
		151	> 50%	BRK		5 Outside	151	0	SE1	
						AVG:	**150**			91
						STD. DEV.	**3**			
						1 Inside	147	0	SE1	
						2 Inside	132	0	SE1	
						3 Inside	131	0	SE1	
						4 Inside	141	0	SE1	
						5 Inside	143	0	SE1	
	AVG:	**156**			120	**AVG:**	**139**			91
	STD. DEV.	**4**				STD. DEV.	**7**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

June 1, 2015

GAI-LAP
Initial: evz #:0.13
DATE: 06/01/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of two (2) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **June 1, 2015**

REFERENCE TRI JOB NO.: G150413

DATE RECEIVED: June 1, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

	SAMPLE ID	***TRI-CA CONTROL NUMBER***
1.	DFP-26 P78/ 79	104248
2.	DFP-27 P84/ 85	104249

TESTS REQUIRED / PERFORMED:

	TEST METHOD	***DESCRIPTION***
1.	ASTM D6392	Shear Bond Strength
2.	ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Table 1.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

2 Pages Total *(including this sheet)*

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **1-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150413**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 1-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-26	**104248**	167	> 50%	BRK		1 Outside	115	0	SE1	
P78/ 79		177	> 50%	BRK		2 Outside	121	0	SE1	
		176	> 50%	BRK		3 Outside	138	0	SE1	
		173	> 50%	BRK		4 Outside	137	0	SE1	
		171	> 50%	BRK		5 Outside	109	0	SE1	
						AVG:	**124**			91
						STD. DEV.	**13**			
						1 Inside	118	0	SE1	
						2 Inside	119	0	SE1	
						3 Inside	131	0	SE1	
						4 Inside	131	0	SE1	
						5 Inside	115	0	SE1	
	AVG.	**173**			120	**AVG:**	**123**			91
	STD. DEV.	**4**				STD. DEV.	**8**			
DFP-27	**104249**	175	> 50%	BRK		1 Outside	125	0	SE1	
P84/ 85		174	> 50%	BRK		2 Outside	141	0	SE1	
		178	> 50%	BRK		3 Outside	122	0	SE1	
		176	> 50%	BRK		4 Outside	132	0	SE1	
		179	> 50%	BRK		5 Outside	141	0	SE1	
						AVG:	**132**			91
						STD. DEV.	**9**			
						1 Inside	121	0	SE1	
						2 Inside	127	0	SE1	
						3 Inside	136	0	SE1	
						4 Inside	128	0	SE1	
						5 Inside	132	0	SE1	
	AVG:	**176**			120	**AVG:**	**129**			91
	STD. DEV.	**2**				STD. DEV.	**6**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

June 5, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 06/05/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of five (5) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **June 5, 2015**

REFERENCE TRI JOB NO.: G150431

DATE RECEIVED: June 5, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI-CA CONTROL NUMBER*
1. DFP-28	104325
2. DFP-29	104326
3. DFP-31	104327
4. DFP-33	104328
5. DFP-36	104329

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D6392	Shear Bond Strength
2. ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 3.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

4 Pages Total *(including this sheet)*

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **5-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150431**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 5-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-28	**104325**	165	> 50%	BRK		1 Outside	117	0	SE1	
		173	> 50%	BRK		2 Outside	124	0	SE1	
		170	> 50%	BRK		3 Outside	121	0	SE1	
		167	> 50%	BRK		4 Outside	109	0	SE1	
		167	> 50%	BRK		5 Outside	116	0	SE1	
						AVG:	**117**			91
						STD. DEV.	**6**			
						1 Inside	123	0	SE1	
						2 Inside	127	0	SE1	
						3 Inside	131	0	SE1	
						4 Inside	143	0	SE1	
						5 Inside	143	0	SE1	
	AVG.	**168**			120	**AVG:**	**133**			91
	STD. DEV.	**3**				STD. DEV.	**9**			
DFP-29	**104326**	177	> 50%	BRK		1 Outside	127	0	SE1	
		175	> 50%	BRK		2 Outside	125	0	SE1	
		178	> 50%	BRK		3 Outside	118	0	SE1	
		171	> 50%	BRK		4 Outside	125	0	SE1	
		173	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**123**			91
						STD. DEV.	**4**			
						1 Inside	145	0	SE1	
						2 Inside	123	0	SE1	
						3 Inside	137	0	SE1	
						4 Inside	127	0	SE1	
						5 Inside	132	0	SE1	
	AVG:	**175**			120	**AVG:**	**133**			91
	STD. DEV.	**3**				STD. DEV.	**9**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **5-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150431**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 5-Jun-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				**PEEL EVALUATION**				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-31	**104327**	163	> 50%	BRK		1 Outside	115	0	SE1	
		169	> 50%	BRK		2 Outside	114	0	SE1	
		166	> 50%	BRK		3 Outside	114	0	SE1	
		168	> 50%	BRK		4 Outside	115	0	SE1	
		166	> 50%	BRK		5 Outside	110	0	SE1	
						AVG:	**114**			91
						STD. DEV.	**2**			
						1 Inside	123	0	SE1	
						2 Inside	109	0	SE1	
						3 Inside	109	0	SE1	
						4 Inside	132	0	SE1	
						5 Inside	116	0	SE1	
	AVG.	**166**			120	**AVG:**	**118**			91
	STD. DEV.	**2**				STD. DEV.	**10**			
DFP-33	**104328**	164	> 50%	BRK		1 Outside	118	0	SE1	
		169	> 50%	BRK		2 Outside	138	0	SE1	
		166	> 50%	BRK		3 Outside	125	0	SE1	
		163	> 50%	BRK		4 Outside	119	0	SE1	
		164	> 50%	BRK		5 Outside	132	0	SE1	
						AVG:	**126**			91
						STD. DEV.	**9**			
						1 Inside	118	0	SE1	
						2 Inside	125	0	SE1	
						3 Inside	130	0	SE1	
						4 Inside	113	0	SE1	
						5 Inside	120	0	SE1	
	AVG:	**165**			120	**AVG:**	**121**			91
	STD. DEV.	**2**				STD. DEV.	**7**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **5-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150431**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 5-Jun-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				PEEL EVALUATION				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-36	**104329**	159	> 50%	BRK		1 Outside	155	0	SE1	
		163	> 50%	BRK		2 Outside	160	0	SE1	
		164	> 50%	BRK		3 Outside	152	0	SE1	
		163	> 50%	BRK		4 Outside	155	0	SE1	
		163	> 50%	BRK		5 Outside	153	0	SE1	
						AVG:	**155**			91
						STD. DEV.	**3**			
						1 Inside	150	0	SE1	
						2 Inside	150	0	SE1	
						3 Inside	144	0	SE1	
						4 Inside	146	0	SE1	
						5 Inside	135	0	SE1	
	AVG.	**162**			120	**AVG:**	**145**			91
	STD. DEV.	**2**				STD. DEV.	**6**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

June 8, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 06/08/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of ten (10) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **June 8, 2015**

REFERENCE TRI JOB NO.: G150439

DATE RECEIVED: June 8, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI-CA CONTROL NUMBER*
1. DFP-30 P101/ 102	104358
2. DFP-32 P110/ 109	104359
3. DFP-34 P113/ 115	104360
4. DFP-35 P114/ 116	104361
5. DFP-37 P118/ 119	104362
6. DFP-38 P119/ 121	104363
7. DFP-39 P122/ 123	104364
8. DFP-40 P124/ 125	104365
9. DFP-41 P50/ 128	104366
10. DFP-42 P129/ 130	104367

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D6392	Shear Bond Strength
2. ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 5.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

6 Pages Total *(including this sheet)*

GAI-LAP

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **8-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150439**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 8-Jun-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				PEEL EVALUATION				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-30	**104358**	164	> 50%	BRK		1 Outside	113	0	SE1	
P101/ 102		168	> 50%	BRK		2 Outside	114	0	SE1	
		161	> 50%	BRK		3 Outside	124	0	SE1	
		160	> 50%	BRK		4 Outside	116	0	SE1	
		163	> 50%	BRK		5 Outside	145	0	SE1	
						AVG:	**122**			91
						STD. DEV.	**13**			
						1 Inside	119	0	SE1	
						2 Inside	125	0	SE1	
						3 Inside	114	0	SE1	
						4 Inside	105	0	SE1	
						5 Inside	136	0	SE1	
	AVG.	**163**			120	**AVG:**	**120**			91
	STD. DEV.	**3**				STD. DEV.	**12**			
DFP-32	**104359**	168	> 50%	BRK		1 Outside	137	0	SE1	
P110/ 109		165	> 50%	BRK		2 Outside	130	0	SE1	
		165	> 50%	BRK		3 Outside	135	0	SE1	
		163	> 50%	BRK		4 Outside	136	0	SE1	
		165	> 50%	BRK		5 Outside	138	0	SE1	
						AVG:	**135**			91
						STD. DEV.	**3**			
						1 Inside	147	0	SE1	
						2 Inside	134	0	SE1	
						3 Inside	145	0	SE1	
						4 Inside	138	0	SE1	
						5 Inside	147	0	SE1	
	AVG:	**165**			120	**AVG:**	**142**			91
	STD. DEV.	**2**				STD. DEV.	**6**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **8-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150439**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 8-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-34	**104360**	169	> 50%	BRK		1 Outside	112	0	SE1	
P113/ 115		169	> 50%	BRK		2 Outside	119	0	SE1	
		171	> 50%	BRK		3 Outside	115	0	SE1	
		173	> 50%	BRK		4 Outside	119	0	SE1	
		170	> 50%	BRK		5 Outside	118	0	SE1	
						AVG:	**117**			91
						STD. DEV.	**3**			
						1 Inside	113	0	SE1	
						2 Inside	127	0	SE1	
						3 Inside	117	0	SE1	
						4 Inside	125	0	SE1	
						5 Inside	133	0	SE1	
	AVG.	**170**			120	**AVG:**	**123**			91
	STD. DEV.	**2**				STD. DEV.	**8**			
DFP-35	**104361**	168	> 50%	BRK		1 Outside	119	0	SE1	
P114/ 116		169	> 50%	BRK		2 Outside	121	0	SE1	
		162	> 50%	BRK		3 Outside	118	0	SE1	
		170	> 50%	BRK		4 Outside	117	0	SE1	
		170	> 50%	BRK		5 Outside	116	0	SE1	
						AVG:	**118**			91
						STD. DEV.	**2**			
						1 Inside	111	0	SE1	
						2 Inside	107	0	SE1	
						3 Inside	105	0	SE1	
						4 Inside	113	0	SE1	
						5 Inside	110	0	SE1	
	AVG:	**168**			120	**AVG:**	**109**			91
	STD. DEV.	**3**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **8-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150439**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 8-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-37	**104362**	161	> 50%	BRK		1 Outside	131	0	SE1	
P118/ 119		162	> 50%	BRK		2 Outside	117	0	SE1	
		165	> 50%	BRK		3 Outside	117	0	SE1	
		164	> 50%	BRK		4 Outside	114	0	SE1	
		163	> 50%	BRK		5 Outside	112	0	SE1	
						AVG:	**118**			91
						STD. DEV.	**7**			
						1 Inside	129	0	SE1	
						2 Inside	125	0	SE1	
						3 Inside	129	0	SE1	
						4 Inside	121	0	SE1	
						5 Inside	122	0	SE1	
	AVG.	**163**			120	**AVG:**	**125**			91
	STD. DEV.	**2**				STD. DEV.	**4**			
DFP-38	**104363**	159	> 50%	BRK		1 Outside	119	0	SE1	
P119/ 121		162	> 50%	BRK		2 Outside	117	0	SE1	
		163	> 50%	BRK		3 Outside	118	0	SE1	
		162	> 50%	BRK		4 Outside	120	0	SE1	
		162	> 50%	BRK		5 Outside	111	0	SE1	
						AVG:	**117**			91
						STD. DEV.	**4**			
						1 Inside	115	0	SE1	
						2 Inside	119	0	SE1	
						3 Inside	110	0	SE1	
						4 Inside	109	0	SE1	
						5 Inside	127	0	SE1	
	AVG:	**162**			120	**AVG:**	**116**			91
	STD. DEV.	**2**				STD. DEV.	**7**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 4.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **8-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150439**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 8-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-39	**104364**	157	> 50%	BRK		1 Outside	122	0	SE1	
P122/ 123		167	> 50%	BRK		2 Outside	118	0	SE1	
		164	> 50%	BRK		3 Outside	120	0	SE1	
		160	> 50%	BRK		4 Outside	119	0	SE1	
		162	> 50%	BRK		5 Outside	116	0	SE1	
						AVG:	**119**			91
						STD. DEV.	**2**			
						1 Inside	110	0	SE1	
						2 Inside	109	0	SE1	
						3 Inside	134	0	SE1	
						4 Inside	113	0	SE1	
						5 Inside	111	0	SE1	
	AVG.	**162**			120	**AVG:**	**115**			91
	STD. DEV.	**4**				STD. DEV.	**11**			
DFP-40	**104365**	160	> 50%	BRK		1 Outside	120	0	SE1	
P124/ 125		164	> 50%	BRK		2 Outside	117	0	SE1	
		160	> 50%	BRK		3 Outside	127	0	SE1	
		156	> 50%	BRK		4 Outside	126	0	SE1	
		160	> 50%	BRK		5 Outside	115	0	SE1	
						AVG:	**121**			91
						STD. DEV.	**5**			
						1 Inside	106	0	SE1	
						2 Inside	137	0	SE1	
						3 Inside	107	0	SE1	
						4 Inside	111	0	SE1	
						5 Inside	135	0	SE1	
	AVG:	**160**			120	**AVG:**	**119**			91
	STD. DEV.	**3**				STD. DEV.	**15**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 5.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **8-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150439**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 8-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-41	**104366**	154	> 50%	BRK		1 Outside	146	0	SE1	
P50/ 128		156	> 50%	BRK		2 Outside	134	0	SE1	
		149	> 50%	BRK		3 Outside	149	0	SE1	
		152	> 50%	BRK		4 Outside	149	0	SE1	
		148	> 50%	BRK		5 Outside	129	0	SE1	
						AVG:	**141**			91
						STD. DEV.	**9**			
						1 Inside	147	0	SE1	
						2 Inside	153	0	SE1	
						3 Inside	151	0	SE1	
						4 Inside	144	0	SE1	
						5 Inside	146	0	SE1	
	AVG.	**152**			120	**AVG:**	**148**			91
	STD. DEV.	**3**				STD. DEV.	**4**			
DFP-42	**104367**	159	> 50%	BRK		1 Outside	127	0	SE1	
P129/ 130		166	> 50%	BRK		2 Outside	109	0	SE1	
		166	> 50%	BRK		3 Outside	140	0	SE1	
		165	> 50%	BRK		4 Outside	131	0	SE1	
		157	> 50%	BRK		5 Outside	137	0	SE1	
						AVG:	**129**			91
						STD. DEV.	**12**			
						1 Inside	103	0	SE1	
						2 Inside	105	0	SE1	
						3 Inside	116	0	SE1	
						4 Inside	108	0	SE1	
						5 Inside	112	0	SE1	
	AVG:	**163**			120	**AVG:**	**109**			91
	STD. DEV.	**4**				STD. DEV.	**5**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 5)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

June 12, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 06/12/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of six (6) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **June 12, 2015**

REFERENCE TRI JOB NO.: G150469

DATE RECEIVED: June 12, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

	SAMPLE ID	*TRI-CA CONTROL NUMBER*
1.	DFP-43 P139/ 140	104544
2.	DFP-44 P147/ 148	104545
3.	DFP-45 P151/ 155	104546
4.	DFP-46 P157/ 160	104547
5.	DFP-47 P161/ 163	104548
6.	DFP-48 P162/ 164	104549

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D6392	Shear Bond Strength
2. ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 3.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

4 Pages Total *(including this sheet)*

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **12-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150469**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 12-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-43	**104544**	182	> 50%	BRK		1 Outside	118	0	SE1	
P139/ 140		181	> 50%	BRK		2 Outside	124	0	SE1	
		175	> 50%	BRK		3 Outside	136	0	SE1	
		176	> 50%	BRK		4 Outside	126	0	SE1	
		178	> 50%	BRK		5 Outside	127	0	SE1	
						AVG:	**126**			91
						STD. DEV.	**6**			
						1 Inside	110	0	SE1	
						2 Inside	136	0	SE1	
						3 Inside	133	0	SE1	
						4 Inside	136	0	SE1	
						5 Inside	118	0	SE1	
	AVG.	**178**			120	**AVG:**	**127**			91
	STD. DEV.	**3**				STD. DEV.	**12**			
DFP-44	**104545**	166	> 50%	BRK		1 Outside	120	0	SE1	
P147/ 148		176	> 50%	BRK		2 Outside	114	0	SE1	
		174	> 50%	BRK		3 Outside	117	0	SE1	
		174	> 50%	BRK		4 Outside	123	0	SE1	
		166	> 50%	BRK		5 Outside	122	0	SE1	
						AVG:	**119**			91
						STD. DEV.	**4**			
						1 Inside	122	0	SE1	
						2 Inside	114	0	SE1	
						3 Inside	115	0	SE1	
						4 Inside	117	0	SE1	
						5 Inside	115	0	SE1	
	AVG:	**171**			120	**AVG:**	**117**			91
	STD. DEV.	**5**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **12-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150469**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 12-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-45	**104546**	164	> 50%	BRK		1 Outside	142	0	SE1	
P151/ 155		170	> 50%	BRK		2 Outside	139	0	SE1	
		167	> 50%	BRK		3 Outside	143	0	SE1	
		167	> 50%	BRK		4 Outside	134	0	SE1	
		166	> 50%	BRK		5 Outside	128	0	SE1	
						AVG:	**137**			91
						STD. DEV.	**6**			
						1 Inside	117	0	SE1	
						2 Inside	110	0	SE1	
						3 Inside	113	0	SE1	
						4 Inside	114	0	SE1	
						5 Inside	114	0	SE1	
	AVG.	**167**			120	**AVG:**	**114**			91
	STD. DEV.	**2**				STD. DEV.	**3**			
DFP-46	**104547**	164	> 50%	BRK		1 Outside	120	0	SE1	
P157/ 160		171	> 50%	BRK		2 Outside	123	0	SE1	
		169	> 50%	BRK		3 Outside	118	0	SE1	
		163	> 50%	BRK		4 Outside	117	0	SE1	
		165	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**2**			
						1 Inside	119	0	SE1	
						2 Inside	112	0	SE1	
						3 Inside	129	0	SE1	
						4 Inside	112	0	SE1	
						5 Inside	123	0	SE1	
	AVG:	**166**			120	**AVG:**	**119**			91
	STD. DEV.	**3**				STD. DEV.	**7**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **12-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150469**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 12-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-47	**104548**	163	> 50%	BRK		1 Outside	114	0	SE1	
P161/ 163		168	> 50%	BRK		2 Outside	116	0	SE1	
		167	> 50%	BRK		3 Outside	114	0	SE1	
		162	> 50%	BRK		4 Outside	112	0	SE1	
		159	> 50%	BRK		5 Outside	113	0	SE1	
						AVG:	**114**			91
						STD. DEV.	**1**			
						1 Inside	125	0	SE1	
						2 Inside	108	0	SE1	
						3 Inside	112	0	SE1	
						4 Inside	107	0	SE1	
						5 Inside	127	0	SE1	
	AVG.	**164**			120	**AVG:**	**116**			91
	STD. DEV.	**4**				STD. DEV.	**10**			
DFP-48	**104549**	160	> 50%	BRK		1 Outside	111	0	SE1	
P162/ 164		166	> 50%	BRK		2 Outside	117	0	SE1	
		166	> 50%	BRK		3 Outside	141	0	SE1	
		163	> 50%	BRK		4 Outside	118	0	SE1	
		160	> 50%	BRK		5 Outside	113	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**12**			
						1 Inside	142	0	SE1	
						2 Inside	112	0	SE1	
						3 Inside	136	0	SE1	
						4 Inside	128	0	SE1	
						5 Inside	123	0	SE1	
	AVG:	**163**			120	**AVG:**	**128**			91
	STD. DEV.	**3**				STD. DEV.	**12**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

June 16, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 06/16/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of three (3) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **June 16, 2015**

REFERENCE TRI JOB NO.: G150479

DATE RECEIVED: June 16, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

SAMPLE ID	*TRI-CA CONTROL NUMBER*
1. DFP-49 P117/ 166	104586
2. DFP-50 P164/ 169	104587
3. DFP-51 P172/ 173	104588

TESTS REQUIRED / PERFORMED:

TEST METHOD	*DESCRIPTION*
1. ASTM D6392	Shear Bond Strength
2. ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 2.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

3 Pages Total *(including this sheet)*

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **16-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150479**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 16-Jun-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-49	**104586**	159	> 50%	BRK		1 Outside	113	0	SE1	
P117/ 166		162	> 50%	BRK		2 Outside	111	0	SE1	
		160	> 50%	BRK		3 Outside	106	0	SE1	
		160	> 50%	BRK		4 Outside	129	0	SE1	
		154	> 50%	BRK		5 Outside	141	0	SE1	
						AVG:	**120**			91
						STD. DEV.	**15**			
						1 Inside	135	0	SE1	
						2 Inside	121	0	SE1	
						3 Inside	141	0	SE1	
						4 Inside	132	0	SE1	
						5 Inside	143	0	SE1	
	AVG.	**159**			120	**AVG:**	**134**			91
	STD. DEV.	**3**				STD. DEV.	**9**			
DFP-50	**104587**	165	> 50%	BRK		1 Outside	128	0	SE1	
P164/ 169		169	> 50%	BRK		2 Outside	120	0	SE1	
		169	> 50%	BRK		3 Outside	112	0	SE1	
		162	> 50%	BRK		4 Outside	116	0	SE1	
		164	> 50%	BRK		5 Outside	111	0	SE1	
						AVG:	**117**			91
						STD. DEV.	**7**			
						1 Inside	135	0	SE1	
						2 Inside	139	0	SE1	
						3 Inside	120	0	SE1	
						4 Inside	131	0	SE1	
						5 Inside	139	0	SE1	
	AVG:	**166**			120	**AVG:**	**133**			91
	STD. DEV.	**3**				STD. DEV.	**8**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **16-Jun-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150479**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 16-Jun-15

Crosshead Speed: 2 in/min						Crosshead Speed: 2 in/min				
		SHEAR EVALUATION				PEEL EVALUATION				
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-51	**104588**	172	> 50%	BRK		1 Outside	139	0	SE1	
P172/ 173		176	> 50%	BRK		2 Outside	151	0	SE1	
		174	> 50%	BRK		3 Outside	129	0	SE1	
		171	> 50%	BRK		4 Outside	139	0	SE1	
		173	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**136**			91
						STD. DEV.	**12**			
						1 Inside	122	0	SE1	
						2 Inside	119	0	SE1	
						3 Inside	118	0	SE1	
						4 Inside	109	0	SE1	
						5 Inside	141	0	SE1	
	AVG.	**173**			120	**AVG:**	**122**			91
	STD. DEV.	**2**				STD. DEV.	**12**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

July 13, 2015

GAI-LAP
Initial: CVZ #:0.13
DATE: 07/13/2015

Allan Brantley
Brantley Engineering, LLC
13933 Tree Loaf Road
Milton, GA 30004

Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the ***final*** laboratory report for the Seam testing of eight (8) HDPE Seam samples.

PROJECT NAME: JED Cell 11 DATE REPORTED: **July 13, 2015**

REFERENCE TRI JOB NO.: G150578

DATE RECEIVED: July 9, 2015

SAMPLES SENT BY: Brantley Engineering, LLC

SAMPLE IDENTIFICATIONS:

	SAMPLE ID	***TRI-CA CONTROL NUMBER***
1.	DFP-52 P166/ 174	105111
2.	DFP-53 P174/ 175	105112
3.	DFP-54 P178/ 175	105113
4.	DFP-55 P183/ 181	105114
5.	DFP-56 P183/ 184	105115
6.	DFP-57 P188/ 187	105116
7.	DFP-58 P190/ 191	105117
8.	DFP-59 P161/ 178	105118

TESTS REQUIRED / PERFORMED:

	TEST METHOD	***DESCRIPTION***
1.	ASTM D6392	Shear Bond Strength
2.	ASTM D6392	Peel Bond Adhesion

TEST RESULTS: The test results are summarized in the attached Tables 1 to 4.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. ***Failed seam samples are kept for two (2) years and good seam samples are disposed of after two (2) weeks.*** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

5 Pages Total

GAI-LAP

TABLE 1.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150578**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-52	**105111**	163	> 50%	BRK		1 Outside	104	0	SE1	
P166/ 174		166	> 50%	BRK		2 Outside	115	0	SE1	
		165	> 50%	BRK		3 Outside	106	0	SE1	
		161	> 50%	BRK		4 Outside	109	0	SE1	
		162	> 50%	BRK		5 Outside	109	0	SE1	
						AVG:	**109**			91
						STD. DEV.	**4**			
						1 Inside	119	0	SE1	
						2 Inside	120	0	SE1	
						3 Inside	114	0	SE1	
						4 Inside	115	0	SE1	
						5 Inside	118	0	SE1	
	AVG.	**163**			120	**AVG:**	**117**			91
	STD. DEV.	**2**				STD. DEV.	**3**			
DFP-53	**105112**	160	> 50%	BRK		1 Outside	106	0	SE1	
P174/ 175		169	> 50%	BRK		2 Outside	113	0	SE1	
		167	> 50%	BRK		3 Outside	117	0	SE1	
		167	> 50%	BRK		4 Outside	113	0	SE1	
		162	> 50%	BRK		5 Outside	117	0	SE1	
						AVG:	**113**			91
						STD. DEV.	**4**			
						1 Inside	122	0	SE1	
						2 Inside	119	0	SE1	
						3 Inside	106	0	SE1	
						4 Inside	123	0	SE1	
						5 Inside	116	0	SE1	
	AVG:	**165**			120	**AVG:**	**117**			91
	STD. DEV.	**4**				STD. DEV.	**7**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 2.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150578**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-54	**105113**	161	> 50%	BRK		1 Outside	121	0	SE1	
P178/ 175		167	> 50%	BRK		2 Outside	111	0	SE1	
		167	> 50%	BRK		3 Outside	114	0	SE1	
		163	> 50%	BRK		4 Outside	117	0	SE1	
		167	> 50%	BRK		5 Outside	116	0	SE1	
						AVG:	**116**			91
						STD. DEV.	**4**			
						1 Inside	121	0	SE1	
						2 Inside	111	0	SE1	
						3 Inside	124	0	SE1	
						4 Inside	126	0	SE1	
						5 Inside	107	0	SE1	
	AVG.	**165**			120	**AVG:**	**118**			91
	STD. DEV.	**3**				STD. DEV.	**8**			
DFP-55	**105114**	166	> 50%	BRK		1 Outside	116	0	SE1	
P183/ 181		168	> 50%	BRK		2 Outside	106	0	SE1	
		169	> 50%	BRK		3 Outside	106	0	SE1	
		168	> 50%	BRK		4 Outside	110	0	SE1	
		161	> 50%	BRK		5 Outside	111	0	SE1	
						AVG:	**110**			91
						STD. DEV.	**4**			
						1 Inside	119	0	SE1	
						2 Inside	114	0	SE1	
						3 Inside	134	0	SE1	
						4 Inside	125	0	SE1	
						5 Inside	128	0	SE1	
	AVG:	**166**			120	**AVG:**	**124**			91
	STD. DEV.	**3**				STD. DEV.	**8**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 2)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 3.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150578**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-56	**105115**	163	> 50%	BRK		1 Outside	119	0	SE1	
P183/ 184		166	> 50%	BRK		2 Outside	120	0	SE1	
		166	> 50%	BRK		3 Outside	123	0	SE1	
		161	> 50%	BRK		4 Outside	121	0	SE1	
		165	> 50%	BRK		5 Outside	120	0	SE1	
						AVG:	**121**			91
						STD. DEV.	**2**			
						1 Inside	113	0	SE1	
						2 Inside	116	0	SE1	
						3 Inside	110	0	SE1	
						4 Inside	111	0	SE1	
						5 Inside	116	0	SE1	
	AVG.	**164**			120	**AVG:**	**113**			91
	STD. DEV.	**2**				STD. DEV.	**3**			
DFP-57	**105116**	165	> 50%	BRK		1 Outside	104	0	SE1	
P188/ 187		170	> 50%	BRK		2 Outside	114	0	SE1	
		173	> 50%	BRK		3 Outside	111	0	SE1	
		171	> 50%	BRK		4 Outside	126	0	SE1	
		167	> 50%	BRK		5 Outside	114	0	SE1	
						AVG:	**114**			91
						STD. DEV.	**8**			
						1 Inside	120	0	SE1	
						2 Inside	121	0	SE1	
						3 Inside	113	0	SE1	
						4 Inside	117	0	SE1	
						5 Inside	124	0	SE1	
	AVG:	**169**			120	**AVG:**	**119**			91
	STD. DEV.	**3**				STD. DEV.	**4**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

TABLE 4.
SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: **Brantley Engineering, LLC**
PROJECT: **JED Cell 11**
DATE REC'D: **13-Jul-15**

MATERIAL: **HDPE SEAM**
SEAM TYPE: **Fusion Weld**
TRI JOB #: **G150578**

QC'd By: Maria Espitia
TEST METHOD: ASTM D6392
DATE REPORT: 13-Jul-15

Crosshead Speed: 2 in/min		SHEAR EVALUATION				Crosshead Speed: 2 in/min	PEEL EVALUATION			
SAMPLE ID	TRI CONTROL #	MAXIMUM STRENGTH (lb/in width)	% Elongation	Locus of Break	PROJECT SPEC. (lb/in width)	SPECIMEN NUMBER	MAXIMUM STRENGTH (lb/in width)	% INCURSION (%)	LOCUS OF BREAK	PROJECT SPEC. (lb/in width)
DFP-58	**105117**	166	> 50%	BRK		1 Outside	131	0	SE1	
P190/ 191		163	> 50%	BRK		2 Outside	125	0	SE1	
		164	> 50%	BRK		3 Outside	124	0	SE1	
		168	> 50%	BRK		4 Outside	134	0	SE1	
		170	> 50%	BRK		5 Outside	133	0	SE1	
						AVG:	**129**			91
						STD. DEV.	**5**			
						1 Inside	119	0	SE1	
						2 Inside	108	0	SE1	
						3 Inside	113	0	SE1	
						4 Inside	117	0	SE1	
						5 Inside	111	0	SE1	
	AVG.	**166**			120	**AVG:**	**114**			91
	STD. DEV.	**3**				STD. DEV.	**4**			
DFP-59	**105118**	152	> 50%	BRK		1 Outside	148	0	SE1	
P161/ 178		152	> 50%	BRK		2 Outside	143	0	SE1	
		155	> 50%	BRK		3 Outside	148	0	SE1	
		152	> 50%	BRK		4 Outside	142	0	SE1	
		155	> 50%	BRK		5 Outside	149	0	SE1	
						AVG:	**146**			91
						STD. DEV.	**3**			
						1 Inside	139	0	SE1	
						2 Inside	136	0	SE1	
						3 Inside	144	0	SE1	
						4 Inside	143	0	SE1	
						5 Inside	139	0	SE1	
	AVG:	**153**			120	**AVG:**	**140**			91
	STD. DEV.	**2**				STD. DEV.	**3**			

BREAK DESCRIPTION (ASTM D6392 FUSION):

AD	ADHESION FAILURE.
BRK	BREAK IN SHEETING.
SE1	BREAK AT OUTER EDGE OF SEAM.
SE2	BREAK AT INNER EDGE OF SEAM.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
SIP	SEPARATION IN THE PLANE OF THE SHEET.

EXTRUSION:

AD1	ADHESION FAILURE. SPECIMENS DELAMINATED UNDER THE BEAD.
AD2	ADHESION FAILURE.
AD-WLD	BREAK THROUGH THE FILLET.
SE1	BREAK AT BOTTOM EDGE OF SEAM.
SE2	BREAK AT TOP EDGE OF SEAM.
SE3	BREAK AT BOTTOM EDGE OF SEAM (for PEEL only)
BRK1	BREAK IN BOTTOM SHEETING.
BRK2	BREAK IN TOP SHEETING.
AD-BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE.
HT	BREAK AT EDGE OF HOT TACK
SIP	SEPARATION IN THE PLANE OF THE SHEET.

(End of Table 4)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

APPENDIX J
Florida JetClean Report

FLORIDA JETCLEAN

HIGH PRESSURE WATER JETTING
EXPLOSION PROOF VIDEO INSPECTION
VACUUM TRUCK SERVICES
WWW.FLORIDAJETCLEAN.COM

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ODESSA, FL 33556
T: 800-226-8013 / F: 813-926-4616
FLORIDAJETCLEAN@YAHOO.COM

RCS Excavation, Inc.
JED Landfill Cell 11
New LCS Pipe Jetcleaning

Work Performed
August 2015

Conducted By:
Florida Jetclean
800-226-8013

FLORIDA JETCLEAN

HIGH PRESSURE WATER JETTING
EXPLOSION PROOF VIDEO INSPECTION
VACUUM TRUCK SERVICES
WWW.FLORIDAJETCLEAN.COM

7538 DUNBRIDGE DRIVE
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REPORT

DATE : 8/13/2015
TO : Mike Rowley – RCS Excavation, Inc.
FROM : Ralph Calistri (floridajetclean@yahoo.com)
SUBJECT : JED Landfill Cell 11

Florida Jetclean completed the high-pressure water-jetting of the new Cell 11 leachate piping on 8/13/2015.

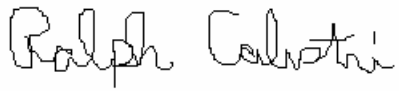
High-pressure Water-jetting:
As the below jetting log indicates, the new Cell 11 leachate piping was jetcleaned in its entirety via high-pressure water-jetting nozzle and was blockage free upon completion.

JED LANDFILL CELL 11
LEACHATE SYSTEM JETTING LOG
JETTING PERFORMED BY FLORIDA JETCLEAN
AUGUST 2015

LOCATION	ACHIEVED DISTANCE (ft)	COMMENTS
Cell 11 Collection 1	700.0'	Entire pipe jetcleaned.
Cell 11 Detection 1	700.0'	Entire pipe jetcleaned.
Cell 11 Collection 2	637.0'	Entire pipe jetcleaned.
Cell 11 Detection 2	637.0’	Entire pipe jetcleaned.

Please call us with questions or concerns.

Regards,



Ralph Calistri – Florida Jetclean - 800-226-8013

APPENDIX K
Daily Field Monitoring Reports

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/9/15 Mon

Weather Description

Sky Cover:	Partly Cloudy	Amt. of Precip:	2"	Wind:	5-10	(mph)
Temp: Low (F):	58 at 7:00	a.m.		High (F)	77at 3:00	p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:

Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RCS has small crew on site today working on dewatering site after site received 2" of rain over weekend. RCS is using 1 excavator, 1 Dozier and 6" pump at lower end of Cell 11. RCS is using Excavator to cut drainage trenches to divert water to south to pump across storm water Berm while Dozier pushes driest materials into low lying areas.

CQA (s) Monitoring Activities and Test Results:

Arrive on site to mob in and scope out area with Project plans and Drawings. Gather up files and paperwork needed for documentation of construction progress. Check out site conditions. Converse game plan with Mike Rowley and Richard with RCS about shots for quantities baseline within Cell 11 footprint. Peavy was to take shots today but has been rescheduled due to standing water throughout proposed Cell area.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/10/15 Tues

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0" Wind: 5-15 (mph)

Temp: Low (F): 56 at 7:00 a.m. High (F) 75 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:

Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS has small crew on site today working on dewatering using 1 excavator, 1 Dozier and 6" pump at lower end of Cell 11. RCS using excavator to cut trenches for drainage in Lower East end while Dozier pushes driest materials into low lying areas.

CQA (s) Monitoring Activities and Test Results:

Observe site conditions in Cell 11 location. Meet with Richard RCS to discuss progress of dewatering and status of Surveying for Topo which is delayed due to standing water. Document construction progress.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/11/15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip 0" Wind: 5-10 (mph)

Temp: Low (F): 59 at 7:00 a.m. High (F) 80 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	197 loads for staging pad only
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS Is on site today running material to working face for Landfill. RCS began to Haul structural fill material to east side of main access Rd to cell to build Staging Pad for Liner Material storage. RCS hauled material to pad throughout Day using 9 Haul Trucks and 1 Dozier to grade out material. RCS also began to haul material to Cell 11 to build access road into Cell for structural fill placement which is being spread out into 2 fingers to move material into Cell while remaining area is dewatered until Peavy can make it out on Friday to shoot Topo for quantities Baseline. .

CQA (s) Monitoring Activities and Test Results:

Observe and document construction of Liner Material Staging Pad and assess site conditions and dewatering activities. Discuss progress with Richard RCS

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/12/15 Thur

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip 0 Wind: 5-10 (mph)

Temp: Low (F): 46 at 7:00 a.m. High (F) 73 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	47 loads of general fill material (752 CY, Cumulative 752CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material to the 2 haul road fingers into cell today using 9 Haul trucks and 2 Dozers to spread material. RCS has the sites big pump set up on Storm water Berm in Southeast Corner of Cell pumping water from Cell into the south inside of Perimeter Berm north of sites Conex.

CQA (s) Monitoring Activities and Test Results:

Observe construction and dewatering progress in east end of Cell 11. RCS used 9 of 10 Haul trucks to place materials from Borrow site into Haul Rd which runs from Southeast corner of proposed cell into the Northeast edge then from East to West approximately halfway into cell.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/13/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip 0 " Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 70 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	140 loads of general fill material (2240 CY, Cumulative 2992 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material to the 2 haul road fingers into cell today using 9 Haul trucks and 2 Dozers to spread material. Peavy is on site today to shoot Topo with assistance of RCS to get throughout Cell 11 area. RCS has sites big pump set up on Storm water Berm in Southeast Corner of Cell pumping water from Cell into the south inside of Perimeter Berm north of sites Conex.

CQA (s) Monitoring Activities and Test Results:

Observe construction and dewatering progress in east end of Cell 11. Peavey has taken all shots for Topo today throughout Cell 11 footprint. RCS used 9 of 10 Haul trucks to place materials from Borrow site into Haul Rd which runs from Southeast corner of proposed cell into the Northeast edge then from East to West approximately halfway into cell.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/14/15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip 0 Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 70 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	60 loads of general fill material (960 CY, Cumulative 3952 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS on site today using 8 Haul Trucks running material from Borrow site to Cell 11 for a total of 60 loads. RCS graded/ Pushed material in Southwest corner pushing wet material towards the North.

CQA (s) Monitoring Activities and Test Results:

Document todays Cell construction activities.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/16/15 Mon

Weather Description

Sky Cover:	Partly Cloudy	Amt. of Precip:	0	Wind:	5-10	(mph)
Temp: Low (F):	55 at 7:00	a.m.	High (F)		77at 3:00	p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	72 loads of general fill material (1152 CY, Cumulative 5104 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS back in Cell 11 today with both Dozers at the Southwest corner bringing Haul trucks down Haul road next to Live Cell placing structural fill material in Southwest corner pushing wet material in a Northern direction following with dry material. RCS has 8 Haul Trucks running material from Borrow site to Cell 11 this morning. Around 11:00 am RCS began to strip area in Borrow site rerouting all Haul Trucks to Hill for Landfills Protective Cover operation. After lunch RCS is relocating the Landfills big pump to the Borrow area leaving the Main pump set @ Eastern storm water location Due East of Cell 11. After Haul Trucks relocated to Hill RCS continued grading in Southwest corner of Cell using D-6 Dozier pushing dry material over low wet areas soaking up and relocating wet material towards the North .

CQA (s) Monitoring Activities and Test Results:

Observe and Document todays Cell construction in Southwest Corner of Cell. Spoke with Richard and Mike Rowley from RCS about progress and Today's construction plans as well as Saturdays Load count. RCS says they will be back Hauling material to Cell 11 full steam tomorrow once Borrow source is straightened out.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/17/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip 0 Wind: 5-25 (mph)

Temp: Low (F): 60 at 7:00 a.m. High (F) 76 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	32 loads of general fill material (512 CY, Cumulative 5616 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material to hill this morning using 10 Haul Trucks to continue hauling stripings and vegetation from North end Cell 11 to the hill and stockpile for Temporary Storm water Berm. Trucks ran wet material from site in am till 11:00 am today then switched to Northeast side of Cell 11 with Excavator to remove wet material from Cell. Around 3:00 RCS returned to Borrow site with Excavator and Haul trucks to resume Hauling more material to Cell from Borrow site for Structural Fill.

CQA (s) Monitoring Activities and Test Results:

Observe & Document

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/18/15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 70 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	202 loads of general fill material (3232 CY, Cumulative 8848 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow site to Cell 11 placing a total of 202 loads of structural fill material into stockpile across the South end.

CQA (s) Monitoring Activities and Test Results:

Document today's Structural fill placement / Stockpile activities. No areas ready for testing at this time.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/19/15 Thur

Weather Description

Sky Cover Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 70 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads of general fill material (0 CY, Cumulative 8848 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS worked on haul roads and Borrow Pitt Today. No haul trucks today due to site conditions

CQA (s) Monitoring Activities and Test Results:

No cell construction today..

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/20/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 70 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	226 loads of general fill material (3616 CY, Cumulative 12464 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 10- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed running structural fill material from borrow site to Cell today using 9 haul trucks. Dozers are used to push wet material from Cell and to maintain Haul roads. Material placed in Cell is being stockpiled. No areas ready to compact or test due to high moisture content.

CQA (s) Monitoring Activities and Test Results:

Document today's Structural fill placement / Stockpile activities. No areas ready for testing at this time.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/24/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 70 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	130 loads of general fill material (2080 CY, Cumulative 14544 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 10- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed running structural fill material from borrow site to Cell today using 9 haul trucks. Dozers are used to push wet material from Cell and to maintain Haul roads. Material placed in Cell is being stockpiled. No areas ready to compact or test due to high moisture content.

CQA (s) Monitoring Activities and Test Results:

Document today's Structural fill placement / Stockpile activities. No areas ready for testing at this time.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/25/15 Wed

Weather Description

Sky Cover:	Cloudy	Amt. of Precip:	0	Wind:	5-10	(mph)
Temp: Low (F):	51 at 7:00	a.m.		High (F)	75 at 3:00	p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	130 loads of general fill material (2080 CY, Cumulative 16848 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed working on drainage in Borrow location using Excavator while crew used 2nd Excavator which arrived on Monday 2-23 to load excess Wet Material from the East and Northeast corner of Cell 11 using 9 Haul trucks to transport to stockpile location. Area through out cell is still very wet and pumping. Needs to dry out substantially to be ready for proof rolling and any additional testing.

CQA (s) Monitoring Activities and Test Results:

Observe and document cell conditions and communicate Conditions with both Richard and Rowley "RCS". Plan is to haul dirt, Structural fill material to Cell 11 tomorrow if weather permits.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/26/15 Thur

Weather Description

Sky Cover:	Cloudy	Amt. of Precip:	1"	Wind:	5-10	(mph)
Temp: Low (F):	53 at 7:00	a.m.		High (F)	75 at 3:00	p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	207 loads of general fill material (3312 CY, Cumulative 20160 CY)
Major Construction Equipment:	2- Excavators, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed working in Borrow Pit this morning Using the Main Excavator to load stockpiled material from yesterday's Rim Ditch in Borrow pit into 9 Haul trucks for transport to Cell 11 into low lying areas that were Shot for Topo yesterday in East side and Northeast corner of Cell 11. RCS used D6 Dozier to Push wet material out while pushing dryer material into low areas in Northeast quadrant of Cell 11.

CQA (s) Monitoring Activities and Test Results:

Observe and Document today's structural fill placement into above noted areas of Cell 11. Continue to monitor Placed material going in Cell for any unsuitable materials.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/27/15 Fri

Weather Description

Sky Cover:	Cloudy	Amt. of Precip:	0	Wind:	5-10	(mph)
Temp: Low (F):	53 at 7:00 a.m.			High (F)	54 at 3:00 p.m.	

CQA's On Site: Kevin Lesley

Daily Load Count:	150 loads of general fill material (2400 CY, Cumulative 22560 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS Is back Hauling Structural fill material from Borrow site to Cell 11 using all 9 trucks and 2 Excavators today. RCS has Smooth drum Roller working areas in Cell to seal off surface to protect from rain showers which are expected to continue throughout the weekend. Site has pretty much gotten rain everyday this week on and off. RCS also has there full time D6 Dozier spreading structural fill and grading out wet areas throughout the day.

CQA (s) Monitoring Activities and Test Results:

Observe and Document structural fill placement in Cell throughout afternoon and check overall cell conditions on foot using spade shovel for probe and inspection of placed material. South end of Cell is starting to dry out and is ready for proof rolling before afternoon showers hit. Left Message with Richard (RCS) as to results and suggest that should be ready for proof rolling of subgrade in South end.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 2/28/15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 70 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads of general fill material (0 CY, Cumulative 22560 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

No cell construction today.
RCS worked on Borrow Pitt and Haul road today.

CQA (s) Monitoring Activities and Test Results:

Work on field notes and overall documentation. Observed site conditions.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/2/15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 63 at 7:00 a.m. High (F) 80 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	145 loads of general fill material (2320 CY, Cumulative 24880 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow site for Structural Fill to Cell 11 using the 9 Haul trucks while D6 Dozier and Smooth Drum Roller worked on lay down area for Liner Material which is due in today or tomorrow. RCS used There D6T Dozier to build access to Wells for abandonment .

CQA (s) Monitoring Activities and Test Results:

Observe and document Site conditions after substantial rain event over weekend. Communicate with RCS about site conditions and projected progress. Relay communications between Geosyntec & RCS for Well Abandonment. Transported Geosyntec to Well locations with Buggy to keep Vehicles off of Storm water Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/3/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 0-5 (mph)

Temp: Low (F): 63 at 7:00 a.m. High (F) 76 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	214 loads of general fill material (3424 CY, Cumulative 28304 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow site for Structural Fill to Cell 11 using 11 haul trucks. RCS has 2 Dozers in Cell today spreading dryer material and working on drainage of standing water throughout Cell since Rain event. One of the 2 Dozers is also used to maintain Haul road into Cell 11 from Borrow site. RCS Used Front end loader and 1 worker on ground to unload Trucks # 2&3 of GCL Liner material. Crew then recovered GCL inventory with industrial Tarp.

CQA (s) Monitoring Activities and Test Results:

Observe and Document today's Structural fill placement activities in Cell 11. Monitor condition of soil being used for Structural Fill and Inventory Liner Material while Crew unloads to verify Material has arrived in good condition and is also stored properly. Planning on proof rolling South end of Cell tomorrow and possible density test depending on conditions.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/4/2015 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 70 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	180 loads of general fill material (2880 CY, Cumulative 31184 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow site for Structural Fill to Cell 11 using 11 haul trucks. RCS has 2 Dozers in Cell today spreading dryer material and working on drainage of standing water throughout Cell since Rain event. One of the 2 Dozers is also used to maintain Haul road into Cell 11 from Borrow site. RCS Used Front end loader and 1 worker on ground to unload Trucks # 4,5,& 6 of GCL Liner material. Crew then recovered GCL inventory with industrial Tarp.

CQA (s) Monitoring Activities and Test Results:

Observe and Document today's Structural fill placement activities in Cell 11. Monitor condition of soil being used for Structural Fill and Inventory Liner Material while Crew unloads to verify Material has arrived in good condition and is also stored in said condition. Planning on proof rolling South end of Cell tomorrow and possible density test tomorrow pending site conditions.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/5/15 Thur

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 58 at 7:00 a.m. High (F) 78 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	204 loads of general fill material (3264 CY, Cumulative 34448 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow site for Structural Fill to Cell 11 using 11 haul trucks. RCS has 2 Dozers in Cell today spreading dryer material and working on drainage of standing water throughout Cell since Rain event. One of the 2 Dozers is also used to maintain Haul road into Cell 11 from Borrow site several time today. RCS Used Front end loader and 1 worker on ground to unload Trucks # 7 & 8 of GCL Liner material. Crew then recovered GCL inventory with industrial Tarp.

CQA (s) Monitoring Activities and Test Results:

Observe and Document today's Structural fill placement activities in Cell 11.Monitor condition of soil being used for Structural Fill and Inventory Liner Material while Crew unloads to verify Material has arrived in good condition and is also stored in said condition. Planning on proof rolling South end of Cell tomorrow and hoping to take density test depending on conditions.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/6/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 70 at 7:00 a.m. High (F) 77 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	223 loads of general fill material (3568 CY, Cumulative 38016 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow site to Cell 11 using all Haul trucks on site . Material is still being stockpiled in middle of Cell in Wind Rows running West to East across floor. RCS also Began to Haul Material to the Old Haul Road into Cell from Cell 10 perimeter. Part of Road had been under water over time and is impassable. RCS is working to reopen road for access from both West & East sides of new Cell 11. RCS received and stored GCL for Trucks #9,10,11 while truck #10 had 1 pallet containing 50 lb. Bags of Bentonite. All roles and bags stored and tarped .

CQA (s) Monitoring Activities and Test Results:

Observe and documents cell construction activities monitor soil placement and inventory GCL liner material received today. Also Proof roll subgrade while trucks Haul in and out of cell.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/7/15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 45 at 7:00 a.m. High (F) 77 @ 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	168 loads of general fill material (2688 CY, Cumulative 40704 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS is on site today working on Cell 11 using both Dozers in South end of Cell working material from West to East pushing wettest Material out across towards the East while 2nd Dozier began to push the dryer Stockpiled material from approx. 200' North across towards the South end of Cell. RCS continues to Haul structural fill material into Cell North of area being reworked in the South end. Material from Borrow site continues to be placed in stockpiles in middle to Northern half of Cell, while floor is reworked for drying purposes. RCS received and checked in 1 GCL truck #12 before end of day.

CQA (s) Monitoring Activities and Test Results:

On site today to assist RCS with testing and Proof rolling of Southern end of Cell to be able to progress forward with Structural Fill Placement. Area still very spongy so RCS is reworking area while placing new Bridge lift across the south end to get above areas which have not dried out. RCS continues to haul material into Cell in stockpiles to the North of area being worked.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/9/15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 64 at 7:00 a.m. High (F) 81 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	268 loads of general fill material (4288 CY, Cumulative 44992 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow site to Cell 11 using all Haul trucks on site . Material is still being stockpiled Cell in Wind Rows running West. RCS received and stored GCL for Trucks #13 & 14. RCS is still running 11 haul Trucks to cell with Structural Fill. 8 were to be used in cell and other 3 on Berm expansion which has not taken place yet so all 11 Trucks still hauling material to Cell 11. RCS began to Degrub Side of Berm North of Cell 11 for expansion work. Plan is to crowd water in that end using Grub to push wet material out of cell location to Northeast Corner . RCS used several trucks in Evening to haul out some of the wet material that has been crowded up against Toe of Slope in Northeast Corner and is Stockpiling in Wind Rows south of Cell..

CQA (s) Monitoring Activities and Test Results:

Observe and documents cell construction activities monitor soil placement and inventory GCL liner material received today. Also Proof roll subgrade while trucks Haul in and out of cell. Took sample test with Nuke gauge today. Material looks much better, however is still too high in moisture to get passing test. Used Spade Shovel to dig test holes abound 8-10" deep and discover water still seeping into hole at around 8"depth.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/10/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 82 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	252 loads of general fill material (4032 CY, Cumulative 49024 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumes hauling material today with 11 Trucks total, 3 are hauling Wet material from Northeast Corner of Cell 11 to the Hill for stockpile of Top Soil . RCS has 1 Excavator and 2 Dozers in Cell working on Material distribution, removal & placement in the Northeast Corner. RCS resumed pushing material in Northeast Corner to crowd water and wet material out of Cell in Northeast Corner. RCS resumed hauling good dryer material in Northeast Corner of Cell to fill where wet material has been removed. RCS has both Dozers working on North end spreading good material in corner and working wet material from West to East at toe of Slope.

CQA (s) Monitoring Activities and Test Results:

Observe and documents cell construction activities and monitor soil placement and inventory GCL liner material received Saturday. Also Proof roll subgrade while trucks Haul in and out of cell. RCS returned Excavator to Borrow for Key ditch work in afternoon. Also met with and discussed plan of action with RCS to move forward and remove saturation from across Cell. Discuss with Mike Kaiser about upcoming Berm expansion and Plans to address moisture across Cell.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/11/15 Weds

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	179 loads of general fill material (2864 CY, Cumulative 51888 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow site to Cell 11 using all Haul trucks on site. RCS resumed placement in Northeast corner for Bridge lift in said Area. Material is still being stockpiled in middle of Cell in Wind Rows. RCS received GCL Truck #14 before lunch which leaves only 4 Rolls yet to be delivered to Complete GCL for Cell 11. Afternoon Crew began to Use Both Dozers and all 11 Trucks to build next Lay Down Area/Pad for Composite liner Material due to ship any day now.

CQA (s) Monitoring Activities and Test Results:

Observe and document cell construction activities, monitor soil placement and inventory GCL liner material received today. Also Proof roll subgrade while trucks Haul in and out of cell.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/12/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 70 at 7:00 a.m. High (F) 77 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	187 loads to berm (2992 CY, Cumulative 2992 CY), 0 loads to cell (0 CY, Cumulative 51888 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resume hauling Structural Fill material from Borrow Pit using all 11 Trucks to extend Haul road on out to Berm beyond the Southwest corner of Cell 11 for work on Berm Expansion Project. RCS Used Tractor w/Hare to disc up wet Material between stockpiles in Cell 11. In the afternoon RCS split off half the Haul trucks to take cover to the working face. RCS used 2 haul trucks and 1 Dozier to build Pad by Conex for place to park their Office Trailer which in due in later. RCS used Front end Loader to offload last 4 Rolls of GCL from final truck # 16.

CQA (s) Monitoring Activities and Test Results:

Observe and documents cell construction activities monitor soil placement and inventory GCL liner material received today. Also Proof roll subgrade while trucks Haul in and out of cell..

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/13/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	109 loads to berm (1744 CY, Cumulative 4736 CY), 128 loads to cell (2048 CY, Cumulative 53936 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow to Berm expansion area and to Southwest corner of Cell 11 for Bridge lift with 5 Trucks to Cell and 5 trucks to Berm expansion while 1 truck has been down since yesterday afternoon. RCS rolled and Bladed off areas on Cell 11 where Bridge lift is in progress. Bridge lift is starting in Southwest Corner and is progressing to the North in the Southwest Quadrant. Using D6T Dozier RCS Grades Bridge lift down to approximately 1 ft. working across The S.E. Quadrant. RCS uses Smooth Drum Roller to seal off area out ahead of Lift in case of rain.

CQA (s) Monitoring Activities and Test Results:

Observe and Document Berm Expansion Project Just east of New Cell . Test 1st lift of Berm from start to approx. Station 2+20. Soil placement in Berm does continue on to about Station 6+50 however it has not been rolled in for testing at this time. Area Tested in 1st 200' is passing.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/14/15 Sat

Weather Description

Sky Cover:	Partly Cloudy	Amt. of Precip:	0	Wind:	5-10 (mph)
Temp: Low (F):	70 at 7:00 a.m.			High (F)	84 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	63 loads to berm (1008 CY, Cumulative 5744 CY), 70 loads to cell (1120 CY, Cumulative 55056 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow to Berm expansion area and Cell 11.
5 Trucks to Cell and 5 trucks to Berm expansion. RCS continues to Blade off areas on Cell 11 where Bridge lift is in progress. Bridge lift continues progressing to the North from the Southwest Quadrant. D6T continues working across The S.E. Quadrant while Smooth Drum Roller compacts and seals
off area. RCS is Blading stockpiled material into lift along with material coming in from Borrow. RCS used Smooth drum Roller to compact Berm to Energy Plant.

CQA (s) Monitoring Activities and Test Results:

Observe & Document Cell construction operations and monitor Cell floor conditions and Berm expansion progress. Used Nuke Gauge and probe rod to test Berm. All Test Were Passing Once Berm was Rerolled throughout.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 16 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 72 at 7:00 a.m. High (F) 85 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	109 loads to berm (1744 CY, Cumulative 7488 CY), 170 loads to cell (2720 CY, Cumulative 57776 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material for Structural Fill to Cell 11 and to Berm expansion project. RCS continues Rolling all areas of Fill Material as Placement progresses in both Cell and Berm locations. RCS received and stocked composite trucks #1-4 , and HDPE liner Trucks #1&2. RCS continues using the 2 D6 Dozers for grading work in Cell and Berm expansion using a spotter at each location to watch for roots and guide Haul Trucks to drop locations .

CQA (s) Monitoring Activities and Test Results:

Observe and documents Both Cell construction and Berm expansion progress, Check in and inventory Composite Trucks 1-4, & HDPE liner Trucks 1&2. Also proof roll all Placed Material in all areas.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 17 / 15 Tues

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 80 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	33 loads to berm (528 CY, Cumulative 8016 CY), 255 loads to cell (4080 CY, Cumulative 61856 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumes Structural Fill Placement activities throughout Cell And Berm today using same equipment and spotters. RCS received and stored HDPE Truck #s 3-6 and Comp.Truck #s 5-7. RCS continues preparing Cell Area and part of Berm for test using Smooth Drum Roller for Compaction.

CQA (s) Monitoring Activities and Test Results:

Observe and Document today's Cell construction and Berm preparation for Density test. Perform Density test using Nuke Gauge. All Test were Passing by end of day In Both Berm and Cell locations.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3/18/15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 0-5 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 85 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	60 loads to berm (960 CY, Cumulative 8976 CY), 215 loads to cell (3440 CY, Cumulative 65296 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 9- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS continues Structural Fill Placement in Cell today using Both Dozers and all 11 Haul Trucks while Roller compacts Next lift in Berm expansion area before returning to Cell to continue Compaction of Placed areas in Cell. RCS also continues working in stockpiled material from windrows throughout areas In Cell into newly Placed material from Borrow site as lifts come up adjacent to stockpiled material. Once next Compacted lift or Expansion Berm is rolled and tested and Passing, RCS resumed hauling Material to Berm for next lift using 5 of the 11 Haul Trucks.

CQA (s) Monitoring Activities and Test Results:

Observe Document and proof roll all areas of Structural fill placement as well as Berm expansion project which continues daily. Used Density Nuke Gauge to test area of Cell and Berm Expansion project. All Test were satisfied as per specs for Berm And Cell construction today.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 19 / 15 Thur

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 84 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	141 loads to berm (2256 CY, Cumulative 11232 CY), 146 loads to cell (2336 CY, Cumulative 67632 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed running structural fill material into the Cell in the Northeast corner of the Cell across previously placed Bridge lift to continue Cell construction progress of Subgrade and Berms using all 11 Trucks and both Dozers before lunch. Afterwards, the crew resumed placing Fill material in Berm expansion area using half the Haul Trucks while other half remained hauling into Cell. RCS began to Roll area of Placed material in south end of Cell late afternoon.

CQA (s) Monitoring Activities and Test Results:

Observed and document Cell construction activities and Monitor equipment for pumping in Placed areas throughout day. No areas were ready to test by end of Day. Should be ready tomorrow. Check in & Inventory Liner materials.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 20 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 84 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	2 loads to berm (32 CY, Cumulative 11268 CY), 292 loads to cell (4672 CY, Cumulative 72304 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed running structural fill material into Cell for construction progress of Subgrade and Berms using all 11 Trucks and both Dozers in Cell. RCS Crew resumed Structural Fill material in Berm expansion area using half the Haul Trucks while other half remained hauling into Cell. RCS began to Roll area of Placed material in south end of Cell and the Berm. RCS also offloaded Composite trucks #12 & #13 of 330 series material and stockpiled accordingly with same crewmembers and equipment.

CQA (s) Monitoring Activities and Test Results:

Observed and document Cell construction activities and monitor equipment for pumping in placed areas throughout day. All processed areas of Placed Material were tested and passing by end of day today. Check in & Inventory Liner materials including 2 more Trucks of 330.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 23 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 74at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	101 loads to berm (1616 CY, Cumulative 12884 CY), 409 loads to cell (6544 CY, Cumulative 78848 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow to Cell and Berm using all Haul trucks and same equipment for Grading and compaction. RCS offloaded and stockpiled 2 more truckloads of 330 Composite Liner Material which should leave 1 more truck for final Composite shipment.

CQA (s) Monitoring Activities and Test Results:

Observe and Document Cell construction progress today as well as inventory more composite 330 materials.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 24/ 15 Tues

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 86 at 3:0(p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	64 loads to berm (1024 CY, Cumulative 13908 CY), 254 loads to cell (4094 CY, Cumulative 82912 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of structural fill today throughout Berm using majority of there Haul trucks throughout the day. RCS used a few of there haul trucks to run more material to Berm for energy plant. Both Cell And Berm have been compacted for Density while material are slowly loosing moisture due to dry and Hot days with no rain in site. So far Material is still wet enough from Borrow site to achieve required compaction throughout past week and half.

CQA (s) Monitoring Activities and Test Results:

Observe, Document and Test all Structural Fill Placement activities and areas processed for testing. All Test were Passing by end of day.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 25/ 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-15 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	78 loads to berm (1248 CY, Cumulative 15156 CY), 244 loads to cell (3904 CY, Cumulative 86816 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of Structural Fill material in Cell Using all 11 Trucks and Both Dozers. Materials need additional moisture due to extreme heat. Water truck should be arriving to site shortly. RCS has gotten in some better Material from pit for Berm Project plus mixing in material pushed aside to dry earlier in week has helped out Perimeter Berm expansion. RCS offloaded last off Composite material and Fabric today.

CQA (s) Monitoring Activities and Test Results:

Observe and Document today's Cell construction and Test Berm to Energy plant and Placed areas in Cell. Notified RCS of failing test from lack of sufficient compaction in some areas due to dry Conditions.... RCS says should have Water truck any Day after discussed needing Water Truck. Inventory Last Composite Truck and Geotextile material.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 26 / 15 Thur

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 85 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	20 loads to berm (320 CY, Cumulative 15476 CY), 332 loads to cell (5312 CY, Cumulative 92128 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placing Structural Fill today in the Cell in the South and North Berms of Cell 11. Lifts are being placed accordingly however moisture is still very low. South Berm has received enough moist material from Borrow Pit to get passing compaction while the South Berm is extremely dry and has yet to pass compaction.

CQA (s) Monitoring Activities and Test Results:

Observe, Document and Test areas in Cell and Berm. No passing test today due to lack of moisture and Compaction as result of dry materials.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 27 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-15mph (mph)

Temp: Low (F): 65 at 7:00 a.m. High (F) 82 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	102 loads to berm (1632 CY, Cumulative 17108 CY), 228 loads to cell (3648 CY, Cumulative 95776 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of Material in Cell 11 today using all equipment in morning then splitting up to Place in Berm and Cell throughout afternoon. RCS was able to place and seal Material Due to expected rains today. Rain helped to tighten up Perimeter Berm however South Berm in Cell still dry. Perimeter Berm Lift is passing.

CQA (s) Monitoring Activities and Test Results:

Observe and Document today's Cell construction and Berm expansion progress. Expansion Berm has been tested and passing due to Moisture needed to tighten up and increase Compaction as well as Cell floor and North Berm. South Berm still lacking sufficient compaction.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 30 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 85 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	93 loads to berm (1488 CY, Cumulative 18596 CY), 449 loads to cell (7184 CY, Cumulative 102960 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of structural fill material across North end of Cell working on building up the Northern Berm of Cell 11. RCS Also finished up final loads for Berm expansion project today which continued from Saturdays material placement in Berm Expansion to Energy plant. More pipe trucks on site today. RCS had spotters double up and scour the cell on foot and with loader for removal of any roots that have surfaced since Structural Fill Placement.
RCS also used loader & spotter to offload and stockpile more pipe today for GCCS system.

CQA (s) Monitoring Activities and Test Results:

Monitored placement of materials for roots. All areas of Placed Material too dry and not meeting compaction requirements today.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 3 / 31 / 15 Tue

Weather Description

Sky Cover:	Partly Cloudy	Amt. of Precip:	0	Wind:	5-10	(mph)
Temp: Low (F):	73 at 7:00	a.m.	High (F)		86 at 3:00	p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 18596 CY), 354 loads to cell (5664 CY, Cumulative 108624 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS is getting water truck in sometime today. Meanwhile crew resumes with Structural Fill Placement activities across Southwest Quadrant of cell using 10 of 11 Haul trucks. Water truck has arrived on site this afternoon. RCS has water truck up & running around 4:30 in Evening. After 4 passes across Berm water truck is down with mechanical issues. Southeast quadrant of cell has been rolled compacted and tested.

CQA (s) Monitoring Activities and Test Results:

Observe and Document today's Cell construction. Conditions are very dry while water truck was able to Hydrate the North Berm the truck went down right after due to mechanical issues. The North Berm in Cell 11 was tested and passing by end of day.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 1 / 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 18596 CY), 366 loads to cell (5856 CY, Cumulative 114480 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

Today RCS resumed placing structural fill material in the south end of cell 11 working toward the east. RCS has roller compacting area behind placement. Cat has a man on site working on the water truck.
Began testing out the North Berm this morning. Notified RCS water content is good however compaction too low and needs to be rolled some more. Once RCS rerolled the north Berm was retested and passing. In the afternoon RCS resumed hauling material to Northern Berm in Cell with half Trucks while other half resumed Placement in South half of Cell. SE quadrant passing late yesterday and Southeast quadrant tested afternoon today.

CQA (s) Monitoring Activities and Test Results:

Observe and document today cell construction including structural fill placement in both cell floor and Cell Berms. Densities were passing in Cell floor south and North & South Berms by end of day.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 2 / 15 Thur
	4

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 76 at 7:00 a.m. High (F) 84 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 18596 CY), 309 loads to cell (4944 CY, Cumulative 119424 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Today RCS resumed fill placement in cell at South End using all 11 Truck. RCS continues to use 2 Dozers for placement operations, 1 water truck for moisture conditioning, and 1 pneumatic smooth drum roller for compaction. Both north and south Berms in Cell 11 have been moisture conditioned and compacted for density test in morning hours. RCS has pulled one Dozier from cell to work on silt fence project. Remaining dozer in cell moved to the North berm to start next lift once North and South Berms have been tested. In the afternoon both Dozers resumed grading work at end of North Berm in North east corner working back around to the South Berm with Structural Fill Placement. After today's test have been completed southeast quadrant of cell floor is ready for next lift placement tomorrow morning.

CQA (s) Monitoring Activities and Test Results:

Observe and documented structural fill placement in Cell 11 floor and North and South Berms. Continue to Proof Roll subgrade throughout Placement activities using Loaded Haul Trucks. All Material Tested Using Density Gauge has Been reworked as needed and is Passing by end of day prior to placement of next lifts.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 3 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip 0 Wind: 5-10 (mph)

Temp: Low (F): 70 at 7:00 a.m. High (F) 83 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 18596 CY), 352 loads to cell (5632 CY, Cumulative 125056 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Today RCS resumed Structural Fill placement in the south end of cell 11 using both dozers and all 11 Trucks resuming placement in Cell floor adjacent to the toe of the South Berm.
South Berm tested and passing this morning while North Berm was passing late yesterday afternoon. RCS moved placement to the north berm of cell 11 this afternoon.

CQA (s) Monitoring Activities and Test Results:

Observe and test all placed areas of structural fill in Cell 11 today using density gauge. Cell Floor and North and South Berms in Cell 11 have been tested and are Passing.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 6 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 72 at 7:00 a.m. High (F) 85 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 18596 CY), 570 loads to cell (9120 CY, Cumulative 134176 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of structural fill material across South Berm this morning while water truck Hydrates Southwest Quadrant of Cell floor. RCS has 2nd Dozier building temp Storm Berm above Tie in area while clearing out stripings Stockpile from area in Live Cell where trash needs to be placed. After Lunch RCS moved to Southwest Corner of Cell floor with Structural Fill Placement.

Water truck hydrates the last Placed lift of Berm Expansion to Plant for testing after lunch. Extension Berm Tested & passing as well as North & South berms and South end of Cell floor.

CQA (s) Monitoring Activities and Test Results:

Observe and Document Berm Construction in Cell 11 as well as Berm Expansion Project. Take Density test throughout day using Nuke gauge. All areas tested were passing as worked by RCS for compaction.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 7 / 15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 85 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	75 loads to berm (1200 CY, Cumulative 19796 CY), 235 loads to cell (3760 CY, Cumulative 137936 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Today RCS resume placing structural fill in cell 11 in the Southwest Quadrant Cell floor and across South Berm using all 11 haul trucks and Both Dozers. Just before lunch RCS sent one dozer to Degrub Expansion Berm to prep for an additional Lift. Both Dozers returned to North end of Cell to Degrub more of Slope at Tie in up to existing Liner Markers. Around Noon RCS split Dozers again sending D6t to expansion Berm for additional Lift while GPS Dozier worked on Lift in North Cell 11 Berm.

CQA (s) Monitoring Activities and Test Results:

Proofroll, Monitor, Document and Test All of today's Structural fill placement in Cell 11 and Expansion berm project. All Test passing by end of day including areas reworked for compaction in both Berms.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 8 / 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 84 at 3:00 p.m.

CQA's On Site: Kevin Lesley , Allan Brantley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 19796 CY), 323 loads to cell (5168 CY, Cumulative 143104 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS continues placement of structural fill in Cell 11 South Berm And Southwest corner of Cell floor using 4 Haul Trucks while 6 Trucks finish out lift In Expansion Berm from yesterday's Lift progression. Today RCS has relocated Pump for Water Truck operations behind Shop.
Water Truck continues to hydrate Cell Berms & Floor as needed throughout day.
RCS moved to North Berm around noon with next lift of Fill Material. All lifts in North & South Berms have been tested and passing once RCS reworked lifts for compaction by end of day.

CQA (s) Monitoring Activities and Test Results:

Continue monitoring Cell Berm construction and Expansion berm project , Morning meeting with M.Rowley, Mike Kaiser & Allan Brantley for quick progress meeting. Test out Berm in and outside of Cell 11 using Nuke gauge and probe area with probe rod. Communicate with RCS concerning moisture content of Structural fill as needed for compaction. All Test passing by end of Day.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 9 / 15 Thur

Weather Description

Sky Cover:	Partly Cloudy	Amt. of Precip:	0	Wind:	5-10	(mph)
Temp: Low (F):	74 at 7:00	a.m.	High (F)		86 at 3:00	p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	44 loads to berm (704Y, Cumulative 20500 CY), 218 loads to cell (3488 CY, Cumulative 146592 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material from Borrow to Expansion Berm for additional Lift using 6 Haul Trucks while 5 trucks resumed hauling to Cell Berm. RCS has D6T working Expansion Berm While GPS Dozier works on final grade work in Cell floor and Spreads material in Cell Berm.
RCS rolled Expansion Berm after today's placement of next lift. The lift has been tested & ready for next Lift Placement.
*** Ryan Pipe welding 350' stringer of 36" ***

CQA (s) Monitoring Activities and Test Results:

Observe and Document Berm Construction in Cell 11 and Expansion berm while part of crew Works on installing silt fence. Also Observe and document Fusion Welding of 36" Gas Pipe for Berm Expansion and GCCS project. Use Nuke Gauge for Densities in today's Structural fill placement activities. All Test where passing by end of day.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 10 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 87 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	70 loads to berm (1120 CY, Cumulative 21620 CY), 80 loads to cell (1280 CY, Cumulative 147872 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resume structural field placement in South Berm for Cell 11 using 10 of the 11 Trucks and the 1 D6T Dozier. RCS has water truck running full time now Wetting Both Berms prior to new lift placement late evening. Roller then Compacts and is ready for testing. All Densities are good this morning using Density gauge once Compaction has been achieved. RCS moved back to Expansion Berm while cell berms were processed for density. D6 GPS Dozier has been down since yesterday afternoon with mechanical issues and is still being worked on this morning.
RCS uses Loader to offload 1st shipment of Pipe fittings @ Energy Plant Location.
Afternoon RCS has GPS Dozier back up and running to ad Next Lift to Expansion Berm. Still only running single Dozier.

CQA (s) Monitoring Activities and Test Results:

Observe and Document Berm Construction in Cell and Berm Expansion project. Test lifts according to specs as same process continues. All Test are Passing once Cell Berm. Has been reworked for compaction and Moisture.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 13 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 2" Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 82 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	237 loads to berm (3792 CY, Cumulative 25412 CY), 78 loads to cell (1248 CY, Cumulative 149120 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumes Structural Fill Placement activities in South Cell Berm and expansion Berm today using all Haul trucks and the 1 D6T Dozier.
The site received a little over an inch of rain over weekend so water truck was not needed today.
All placed areas of Berm Material has been compacted tested and passing by days end.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 14 / 15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 85 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	42 loads to berm (672 CY, Cumulative 26084 CY), 31 loads to cell (496 CY, Cumulative 149616 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Site received 2 " Rain overnight.
Pipe crew sealed off ends of 36" pipe stringers with fabric. As of yesterday there are 4 - 350' Stringers assembled and fusion Welded.
Pipe crews generator went down late yesterday, No pipe fusing today.

RCS resumed placing structural fill in Berms using both Dozers while Roller compacts material. In the late morning the GPS Dozier dropped back to work on washout around Berms while D6T Continues to spread Placed Structural Fill Material.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 15 / 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 71 at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 26084 CY), 179 loads to cell (2864 CY, Cumulative 152480 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RCS has Both Dozers working on Berms today while Smooth Drum Roller works on sealing off floor, More rain expected today.
RCS using GPS Dozier to grade while D6T continues to place & spread Fill Material in North Berm. RCS is running all 11 Haul Trucks.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 16 / 15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 69 at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	80 loads to berm (1280 CY, Cumulative 27364 CY), 0 loads to cell (0 CY, Cumulative 152480 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Arcs resume placing structural fill in areas of the extension berm this morning using the GPS dozer and all 11 haul trucks. Areas being placed are 3-6" low in spots along Perimeter Access Berm/ Expansion Berm project.
Arcs has the D6T dozer cutting and spreading excess material from curve @ Power Line location back to the West end of slope in North Berm.
D6T continues grading work on slopes around Cell 11.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 17 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 69 at 7:00 a.m. High (F) 87 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	81 loads to berm (1296 CY, Cumulative 28660 CY), 36 loads to cell (576 CY, Cumulative 153056 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed working on Berms in Cell 11 and down Expansion Berm for Access from Plant to Landfill Cells.

Pipe crew continues to Fusion Weld pipe together for GCCS system. 4" welding is 40' sticks x 5 for 200' stringers while 36" continues with 50' sticks for 350' stringers.
After lunch, pipe crew finished welding up the last of the 36" stringers for total of 7 350' stringers and 1 200' Stringer =2,650'

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 20 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 69 at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	93 loads to berm (1488 CY, Cumulative 30148 CY), 127 loads to cell (2032 CY, Cumulative 155088 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS has Both Dozers and all Haul Trucks running material to Berm expansion this morning to build up slopes.
RCS has crew of 3 with shovels and 1 Excavator with smooth edge bucket exposing Tie In @ Southwest corner of Cell 11 working towards the North.
Pipe crew back on site Fusing more 4" Pipe together for 200' runs welding 5 x 40' sticks per run/stringer..
Pipe crew done for week.
Afternoon RCS is down to 1 Dozier on Berm Expansion Project and Smooth Drum Roller.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 21 / 15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 70 at 7:00 a.m. High (F) 86 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	67 loads to berm (1072 CY, Cumulative 31220 CY), 0 loads to cell (0 CY, Cumulative 155088 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed hauling material to Berm expansion for Berm widening working slopes in areas using 8 Haul Trucks and D6 GPS Dozier. Crew uses Smooth Drum Roller to re compact areas refilled Ruts throughout day from Haul Truck traffic .
RCS continues to expose Liner Tie in using 3 crewmembers with flat shovels and Excavator with smooth edge bucket.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 22 / 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 72 at 7:00 a.m. High (F) 89 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	98 loads to berm (1568 CY, Cumulative 32788 CY), 0 loads to cell (0 CY, Cumulative 155088 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of structural fill material for Berm expansion to build out slope using 8 of the 11 Haul trucks. RCS has 2 Excavators Working in Cell 11, one working on Storm water diversion Berm above Tie in West of Cell while 2nd Excavator resumes exposing Liner @ Tie in using crew of 3 with Flat shovels. RCS still has 3rd main Excavator working in Borrow pit.
After lunch RCS Used D6T Dozier to begin Degrubing East of Ponds @ New Power station site for Borrow source to supply Structural Fill for Pad construction near Power station.
RCS finished exposing Liner in west of cell today.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 23 / 15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 70 at 7:00 a.m. High (F) 87 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	74 loads to berm (1184 CY, Cumulative 33972 CY), 0 loads to cell (0 CY, Cumulative 155088 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of Structural Fill in Berm expansion @ Northeast corner of Cell 11 to match up to new Ramp/Perimeter Berm Access Rd in North end of Cell 10 & Cell 11 as shown in Drawings. RCS Used 8 Haul Trucks and 1 D6 GPS Dozier for today's construction. RCS has one excavator at pond north of power station stockpiling material for future pad.
In the Afternoon, RCS has a 3rd Excavator at Northeast corner of Cell 11 to remove Vegetation and Muck from area adjacent to Northeast Corner where Temporary Ramp in Cell 11 comes off Berms in NE corner and Perimeter Berm for the widened 3:1 slope.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 24 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 1" Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 87 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	110 loads to berm (1760 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 155088 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed degrubing Pad area East of Energy Plant using D6T Dozier while GPS Dozier resumes grading work in Cell 11 starting at Tie in side of floor and slope.
RSI resumes work in Berm dewatering location for CS1 with well point assembly going in.
Light to heavy rain throughout noon & afternoon.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 27 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 87 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	110 loads to berm (1760 CY, Cumulative 35732 CY), 201 loads to cell (3216 CY, Cumulative 158304 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Arcs is down to 6 Haul trucks today running material to ramp extension outside of Northeast corner of Cell 11. Peavy on site this am shooting points for Sumps in Berm expansion for GCCS system to new energy plant. RCS also continues to stockpile material for Pad near Energy Plant using Excavator and uses Dozier to Degrub area for Pad placement.
After lunch, pipe crew began to excavate for well point pump once Peavy confirmed location of existing Force main.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 28 / 15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: .5" Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 89 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 3 loads to cell (48 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed degrubing Pad area East of Energy Plant using D6T Dozier while GPS Dozier resumes grading work in Cell 11 starting at Tie in side of floor and slope.
RSI resumes work in Berm dewatering location for CS1 with well point assembly going in..
Light to heavy rain throughout noon & afternoon.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 29 / 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 90 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed degrubing Pad area before placing structural fill material using D6T Dozier and 5 Haul trucks. RCS has 3 man crew on ground picking up roots from 1st area lift of Placed material while Smooth Drum Roller compacts material.
RSI resumes dewatering @ CS1 location in Perimeter Berm then moves on to next location in Berm for CS1 sump to Excavate and set up Well point for dewatering.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 4 / 30 / 15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 90 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of structural fill East of Energy Plant Location for New entrance and Pad using D6T Dozier and 3 haul trucks running from Borrow site next to Leachate pond.
Excavator still pulling material from said Borrow site next to construction area East of Energy Plant. RCS uses D6 GPS Dozier to continue grading work in Cell 11 in preparation for Liner which is scheduled for next Mon. 5-4-15.
RSI resumes setting up 2nd Well point @ location for CS2 Sump in Perimeter Berm. After lunch RSI has pump set in place and activates Well Point for dewatering of Sump location.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 1 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS continues Grading out Cell 11 for Liner today using GPS Dozier while 5 man crew rakes Berm slopes using rakes & shovels. RCS also has loader and 1 Haul truck in Cell hauling out excess Cut Material. RCS has 2nd crew working on entrance pad for Energy Plant using D6T Dozier and 2 haul trucks from borrow site. RSI has excavated sump subgrade base for CS1 today using rover for correct placement of sump. Once in place and level concrete truck arrived and transferred material to Excavator bucket for placement around base of Sump. Area around Sump has been compacted with track hoe bucket during backfill progress. RSI has removed well point from CS1 location and switched CS1 pump to CS2 location. Plan is for anchor trench to be excavated on Monday along with Leach ate line in Cell 11.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 4 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 90 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins, Allan Brantley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS is working on LCS line in Cell early This am using Excavator with special Trench Bucket and crew of 5 to clean out trench area of unsuitable materials such as small roots and any misc. debris. RCS has been grading and rolling Cell surface all weekend using D6 GPS Dozier and Loader to remove any excess cut materials. RCS resumes placing Structural fill material in Parking pad area @ Energy Plant Location. Area was compact & tested, and passing.
In the Afternoon, RCS excavated Anchor Trench.
RSI is on site setting up CS2 and excavated for CS3 and set well point for CS3.
Comanco has crew on site walking Cell area this morning. They began filling sandbags & Staging GCL material & Geomembrane HDPE in preparation of deployment tomorrow.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 5/ 15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins, Allan Brantley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

COMANCO :
12 man crew
Daily sq. Ft. 28,091covered with GCL and HDPE

RSI set up well points in excavated area for condensation sump CS 3. RCS onsite working on building pad.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 6/ 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Daily Sq. Ft. 35,682
Accumulated
Total Sq. Ft. 63,773
RCS continue working out in front of Comanco to prepare subgrade by maintaining moisture in surface and smooth drum rolling.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 7/ 15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE.
RSI installed sump # 3 on the rock bed followed by cement around base of sump. RSI then began to remove the well points from sump area. RCS continue to work out in front of liner crew preparing subgrade.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 8/ 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 90 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE.
RSI fused sections of 36" Pipe at location on Berm including 1- 36" T for future Cell Tie in with Metal Flanges and One Reducer with vertical Clean out Riser. Pipe fused together spans from CS1 down to Inline Clean out Riser.
RCS worked on grading work on Cell 11 Berms and Excavated the 2nd LCS trench in East side of Cell.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 9 / 15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 90 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE.
RCS Excavated Anchor Trench in North Berm today and re cleaned Tie In in Northwest side of Cell.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 11 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE.
RSI begin to excavate trench for 36" pipe in Berm Expansion today starting at Condensate Sump. Working back towards the East using Excavator and crew on foot running the laser for verification of correct fall.
RCS placed a small amount of fill material in Energy plant Parking pad area with nothing ready to test today per RCS.
RCS also continues maintenance work of cell floor ahead of Liner deployment as well as working on grooming Trench for LCS system.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 12 / 15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE.
RSI resumes excavating trench for 36 " pipe in Berm.
RCS continues to grade Cell in NE Corner & uses excavator to load 2 haul trucks with excess cut material. RCS also resumes excavation of 2nd LCS trench in Cell floor.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 13 / 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 69 at 7:00 a.m. High (F) 90 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE.
RSI spent day welding Flanges onto 36" pipe today and welded 45° 36" elbow in line
RCS started to excavate sump area then stopped at last minute due to GPS issue.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 14 / 15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 69 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE.
RSI resumes excavating trench for 36" pipe today snaking pipe into trench along the way towards the east end.
RCS is on site with Peavy survey today shooting more points in floor and Berm in Northeast corner. RCS also began to excavate for RCP pipe culvert at pad entrance location of New Energy Plant.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 15 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 92 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE. Cumulative total to date installed of GCL and Secondary HDPE is 388,631 SF of each component.
RCS began to excavate anchor trench in East half of North Berm this morning.
RSI resumes excavating trench for 36" pipe and begins to Back fill enough material along side of pipe to stabilize pipe until compaction machine arrives.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 16 / 15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
Continued installing GCL and secondary HDPE.
RCS finished excavating anchor trench in North Berm this morning next to LCS Sump for Cell 11 and begins to set up excavator and crew to excavate Sump.

Comanco has placed GCL and Secondary Liner as far East as possible in floor until Power lines are relocated tying into North slope down to Sump location. Comanco and RCS have been working together daily to key in Placed Liner to seal off and protect GCL from any adverse weather. From South to North Berms and across floor along panel 115 next to East LCS trench.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 18 / 15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 69 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
16 man crew
RCS Is finishing up Sump excavation this morning while Comanco gets extra people in on crew to double up work load for this week. COMANCO Begins to Deploy secondary Composite today while part of crew catches up on vacuum Testing and repairs as other crew members begin repairs in North east corner of Cell once pressure test is completed on seams placed Friday & Saturday.
36 rolls of composite deployed today..
Comanco had six extra guys today and we'll have more tomorrow. Up to 30 crew members total One Crew to deploy composite and the second to continue HDPE liner.
Peavey surveying on site today to survey cell 11 Sump and top of 36 inch pipe for expansion berm project.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 19 / 15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 69 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
20 man crew
RCS excavates last section of Anchor Trench today above Sump location.
Comanco focuses on repairs and details while part of crew deploys Secondary Composite.
RSI resumes placing 36" pipe and back filling sides of pipe...

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 20 / 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 90 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco
30 man crew
Comanco installing secondary geocomposite today and working on repairs of HDPE. Mark destructive samples to be taken tomorrow.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 21 / 15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

Comanco continues deployment with 30 man crew deploying from both south Berm slope & West Tie in side of Cell deploying 4.18 Acres of Primary HDPE liner. Part of crew works on repairs throughout panels deployed yesterday including Sump area.
RSI resumes back filling around sides of 36" pipe throughout day.
RCS resumed work on CRP pipe installation @ Energy plant office pad construction area off of Omni Way..

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 22 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY), 0 loads to cell (0 CY, Cumulative 158352 CY)
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

Comanco working on Deployment of Primary Composite in Southwest corner of Cell where RCS wants to start placing Protective cover into said area of Cell 11.
Comanco installed temporary rub sheet in Southwest side of South Berm and cleaned out anchor trench to vacuum Box the welded end seam down in anchor trench.
Once completed, RCS began to build ramp up Southwest corner of South Berm slope for entry into Cell for Protective cover placement.

RSI began compacting sides of back filled pipe with second machine supplied by RCS

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 23 / 15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS placed protective cover in Southwest corner of Cell 11 using 6 Haul trucks and D6 LGP Dozier. RCS is to have 2 crewmembers on ground watching for wrinkles and unsuitable cover material such as small roots or rocks capable of penetrating liner material.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 26 / 15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumes placing Primary Composite in Southwest corner of Cell 11 to panel 47 of Primary HDPE liner. Then moved towards Northwest end of Cell with Secondary Composite to prepare for Continuing HDPE Liner deployment in West half of Cell.. Repairs and non destructive testing continues today..

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 27 / 15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco continues deployment of Secondary Composite in Northwest quadrant of Cell 11 today with 14 man crew working on nondestructive testing to continue coverage of Secondary Liner with Secondary Composite. Crew has made it past Sump with Secondary Composite once trenches and sump area have been cleaned of debris from dust and sand that has been washed down the placed Secondary Liner system via LCS trench to the lower sump end of Cell. RCS removed sump pump and hoses so that Comanco could finish cleaning area @ sump and Toe of North Berm slope to continue with placement of Secondary composite. Sump was under water from weekend rains which had left a film of dust where water had stained Liner in & around sump which had been pumped back out by RCS yesterday and remained dry.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 28 / 15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 63 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Sam Nejad

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Today Comanco resumed placing Primary Liner in the North West corner of Cell followed by Composite while RCS is close behind placing protective cover into the Northwest quadrant.
RSI resumes fusing together final sections of 36" pipe while RCS takes over with backfill process of said pipe in Berm..

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 29 / 15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 64 at 7:00 a.m. High (F) 92 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Sam Nejad

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco finished repairs today for Primary Liner in the North West quadrant of Cell followed by Primary Composite completing the floor and 2/3 of North West half of Berm. RCS resumed placing protective cover in Northwest quadrant using 8 haul trucks and 2 crewmembers on ground watching for wrinkles and roots as Dozier spreads material. RSI excavated road crossing for 36" pipe transition from Berm to final Sump next to Blower pad location. RSI fused last section of said pipe and installed last section into trench and over bridge to complete transition to final sump @ Energy plant. RSI bolted 36" pipe to CS3 and back filled around part of pipe in road crossing until final flow fill arrives on site tomorrow @ 10am..

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 5 / 30 / 15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 92 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Sam Nejad

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placing protective cover in Northwest quadrant of Cell 11 using 6 Haul trucks while keeping 1 man on ground watching for wrinkles and roots. By end of day crew has protective cover placed along side of the West trench for LCS to sump and plans to be ready to start placing fabric and rock on Monday.
RSI also on site today to work flowable fill material into trench for road crossing of the 36" pipe to CS3 as Cement trucks hauled and poured the fill material. RCS also finished Bolting up Flanges with hardware and anti corrosive material which has been applied to all Hardware during installation.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 1 /15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumed placing Secondary Composite today in the Southeast quadrant of Cell 11 starting on the south slope then onto floor. Plan for tomorrow is to go across floor with more composite then back to start on South east slope with primary liner.
RCS resumed placing protective cover in Northwest half of Cell and along Tie In side of Cell.
RSI began fusing and placing the 6" perforated pipe into the West Leachate Collection Trench today over the geotextile fabric.
RCS following in behind RSI placing the approved #4 stone over perf. Pipe in trench as per Drawings.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 2 /15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 1.5" Wind: 5-10 (mph)

Temp: Low (F): 65 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumes placing Secondary Composite today throughout floor of East half of Cell in hopes of finishing up so they can start on Primary Liner deployment in East half starting on South east slope.
RCS is waiting for Leachate Gravel to arrive on site while continuing to spread Protective cover in the West half of Cell.
RSI has completed the 6"perforated Leachate Collection pipe in Cell and has set up fusion machine at Liner lay down area to fuse remaining 24" riser pipe to Elbow and floor section of 24" Perforated pipe. Rains in late afternoon shut down activities.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 3 /15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumed placing Secondary Composite in Northwest corner of Cell floor and North slope.
RCS resumed spreading protective cover using both LGP Dozers. Around 9 am crew resumed running protective cover back into Cell once Haul road was reworked from Borrow site.
Part of RCS crew is setting up second & third Storm water Structures and 24" corrugated pipe at Office Building Pad next to energy plant.
RSI resumes back filling around sides of 36" pipe from last bend in Berm on around to 90° elbow at bridge & road crossing.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 4 /15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 91 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumes spreading protective cover using both LGP Dozers.
RSI continues welding LCS trench pipe.
Comanco resumed placing Primary Liner Along South Berm preparing to Tie in at West Secondary Leachate Collection pipe trench.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 5 /15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 66 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumes placing Primary Liner deployment activities tying in at West Leachate Collection Trench to cover Secondary Composite with Primary liner to close gap between the two trenches so RCS can make way to Second trench with Protective cover giving access to trench so it can be fitted with Secondary Pipe system.
RSI began fusing Primary Leachate Collection pipe in Cell.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 6 /15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 64 at 7:00 a.m. High (F) 92 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumes placing secondary geocomposite to allow RCS access to place protective cover near the leachate trench. RCS continues to spread protective cover already hauled in.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 8 /15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 67 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Allan Brantley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumes placing secondary geocomposite on cell floor along western leachate line. Comanco also worked on HDPE repairs. RSI began placing the fabric and leachate pipe. RCS followed by placing the stone around the pipe while Comanco wrapped the fabric around and stitched it up. RSI also set the primary sump riser in place.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 9 /15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 68 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Allan Brantley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumes placing secondary geocomposite on cell floor along western leachate line. Comanco also worked on HDPE repairs. RSI continued placing the fabric and leachate pipe continuing towards the sump. RCS followed by placing the stone around the pipe while Comanco wrapped the fabric around and stitched it up. Later in the afternoon, Comanco completed primary geocomposite placement and switched back to laying primary HPDE on the floor. RCS spends afternoon and evening Placing protective cover across West trench into area between both Trenches to gain access to East trench for Pipe & Rock drainage system of Secondary trench.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 10 /15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 70 at 7:00 a.m. High (F) 89 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Sam Nejad

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placing protective cover into East half of floor between West & East Leachate trench. RSI resumes fusing the 6" riser section of Pipe to the perforated pipe which runs parallel across the sump.
Comanco resumed deploying Primary HDPE in floor East of Trenches including all detail work as Liner progresses in East.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/ 11 /15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 76 at 7:00 a.m. High (F) 89 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Sam Nejad

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

RSI resumed fusing and placing 6" perforated pipe for Secondary Leachate Collection Trench in East side of Cell 11 while rock stockpile is being replenished.
RCS resumed placing protective cover in Southern half of Cell via Southwest Access ramp into Cell using D6T Dozier and 2 spotters on the ground.
Comanco spent morning and afternoon Detailing Primary Liner that was deployed in Northeast yesterday from Northeast Berm across floor and back towards East trench and Sump area Including all repairs and Vacuum test before switching to deployment.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/12/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 74 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Sam Nejad

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RSI resumes placing Secondary rock in LCS trench East for 6" perforated pipe burrito wrap.
RCS has group of Laborers helping spread rock with rakes & shovels. Before lunch RCS & RSI worked together placing structural fill material in trench Crest over 24" Secondary Pipe out of sump up slope preparing for GCL and Primary Liner in Sump location.
RCS also has same protective cover placement crew placing and spreading material in area between the 2 Trenches and down toe of South Berm.
Comanco has crew of 6 on site finishing up detail on Primary Composite in Northeast corner of Cell.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/13/15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 72 at 7:00 a.m. High (F) 89 at 3:00 p.m.

CQA's On Site: Kevin Lesley, Sam Nejad

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumed deploying Primary HDPE liner today in far East side of Cell from South Berm to North Berm and Sump area. Comanco Deployed Primary HDPE liner panels 165 - 173 to finish covering all Secondary Liner system. Comanco had entire crew working on deployment and all detail work including extrusion welding all repairs and Destructs, Pressure test of all Fusion Welded seams, Vacuum Box test of all repairs Extrusion welded, installation of Boot around Risers @ Anchor trench and Deployment of Primary Composite only leaving Sump location and 3 adjacent panels uncovered by Primary Composite.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/15/15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 74 at 7:00 a.m. High (F) 92 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumes placing Primary Composite in North Berm and Sump area with 6 man crew today, also resumes extrusion welding HDPE Primary & Secondary layers together in North trench. All detail work on Composite continues all day after deployment is completed. Zip ties, sewing and Patches across but seams.

RSI also began fusing 6" perforated pipe for Primary LCS system @ East trench completing run from South end of trench to point just shy of where the 2 pipes run parallel just before Sump.
RCS has Dozier and pneumatic roller fine grading and compacting GCCS Expansion Berm for Duke Energy Contractor who is on site to begin Power pole installation from Energy Plant to Landfill. RCS also has water truck Hydrating Berm for Dozier & Roller work shaping up and compacting Berm. GCCS Berm has been Probed and retested After lunch and afternoon..

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/16/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 74 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1-Smooth drum Roller

Contractor(s) Construction Progress:

Comanco has finished seaming & detail work on Composite and are all working in North Trench on extrusion welding Primary & Secondary HDPE liner together. Comanco to drop back To vacuum Box complete area in trench and around Sump riser Boot.
Comanco is also Welding rainflap in North Berm today.
RCS resumes spreading protective cover in Southern end of Cell 11 up to the East LCS trench area. By noon RCS has began to push protective cover material up the South Berm slope working from entrance ramp Southwest towards the East. RSI has 6"perforated pipe welded and placed in Geotextile fabric from South end to approx 80' south of Sump area. Today RSI has been getting all loose ends tightened up at CS 3 Bolting up 36" Flanges..

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/17/15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 75 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS offloaded more structures and headwalls this am. RSI is setting up to work in Sump. RSI & RCS worked together on sump using 2 excavators to bring down and place the Primary 24" SDR 32.5 HDPE Sump Riser Assemblies. Also placed are the twin 8" Perforated collection Pipes with HDPE elbows installed per Plans same as Secondary pipes previously installed as noted on Drawings pg 9 of 18. Both Secondary leak detection and Primary Leachate Collection layers of pipe have been installed satisfactory to Design Plans/Drawings including Leachate Collection Gravel and Fabric geotextile with sewn seams.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/18/15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 81 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed spreading protective cover in Southern end of Cell 11 in the AM. Afternoon RCS began to move across the East Leachate Collection Trench with Protective cover placement using 3 guys on foot watching for wrinkles and roots. RCS has 2 gps Dozers placing protective cover today. RSI resumes placing Primary Burrito wrapped Stone @ the 8" Leachate pipe trench working from Sump back towards the South installing survey risers along the way. Fabric is being sewn closed for sealing of fabric wrap throughout process.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/19/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 82 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placing protective cover in Cell 11 today using both LGP Dozers with GPS. RCS has also ramped up to 4 guys on ground to remove and clean Composite from unwanted material such as roots. RSI has resumed and completed the 8" Perforated collection Pipe/Rock Burrito wrap trench complete with survey risers from Sump to South end of trench.
Surveyor Peavy back out today to survey remaining Collection Trench and top of Rock Sump.
Once surveyed RSI removed survey risers and sealed voids with Rock and then patched top of fabric where survey risers have been removed.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/22/15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 77 at 7:00 a.m. High (F) 96 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placing protective cover in Cell 11 using 6 Haul trucks and crew of 3 on ground ahead of Dozier spreading material looking out for roots.
RSI finished fusing Perf pipe for temporary horizontal gas Pipe leading to Sump in Toe of North Berm. RSI installed the 8 oz fabric for Burrito wrap before placing pipe and filtration rock.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/23/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 76 at 7:00 a.m. High (F) 92 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placing protective cover into Cell 11 using same trucks as yesterday and 1 single Dozier basically stockpiling material for when construction kicks back in gear.
RCS is also working on new entrance road into energy plant office pad East of new Plant structure off of Omni Way. LBR road base is being Transported in via road trucks competing lift 1 of 3 today compacted & tested to specs per Proctor.
RSI has been working on sealing off entire GCCS system from CS 1 to CS3 including 4" force main and 2" Air line. Started pressure test @ 16:13 this afternoon.
RCS spread & compacted lifts 2 of 3 of LBR road base today.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/24/15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 75 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS reworked road base for Lift 2 this morning and is tested & passing.
RSI has been ramping up 4" force main for Hydrostatic test and had system level off and ready for test after lunch. Test ran from 2:53-3:55 Pm. @ 130 psi pressure for the required 1 hr. Gauge was actually showing 132 psi once system leveled out and remained at 132 psi for remainder of Hydrostatic test.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/29/15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 72 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed Cell 11 construction using both Dozers and 8 Haul trucks on site placing structural fill material in East end of Cell to finish Final section of Berm. The first lift resumed has been compacted and tested including area where power line pole was removed. Area was back filled and compacted in lifts. Afternoon rains growing increased and heavier caused RCS to shut trucks down early in evening.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 6/30/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of structural fill material in 2 additional lifts by Lunch time in Northeast corner of Cell Perimeter Berm using total of 9 haul trucks today and single D6T Dozier while pneumatic Roller Compacts placed Lifts behind Dozier. Compaction results are higher as Moisture content is closer to optimum due to rain yesterday.
RCS also has Sod crew on slopes of parking pad area by energy plant and second Dozier shaping up expansion Berm Slopes for Sod crew working from Plant back to Cell..
All lifts for Cell construction have been Compacted and tested and are passing for today.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/1/15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 74 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placement of structural fill material in East end of Cell 11 using 8 of the 9 haul trucks on site and single D6T Dozier while pneumatic Roller Compacts as material is placed and graded. So far moisture remains good straight from Borrow pit for fill material. RCS also resumes shaping Berm from energy plant to Cell using 2 Dozers and 1 worker on ground with rake. Sod crew has started to Sod the outside slope of said Berm this morning starting at GCCS 36" pipe bridge working towards the Cells.
By Lunch time RCS finished shaping GCCS Berm and returned to East end of Cell 11 to help finish construction in preparation for final Grading of subgrade. RCS finished up hauling material into Cell Berm by 4 PM. RCS spends evening grading with GPS Dozier and using D6T Dozier to help grade slopes and excess material. Survey Peavy Due on site tomorrow for shots of final Subgrade for Cell 11..

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/6/15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley and Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS worked in Cell 11 pushing protective cover from South slope back filling Anchor trench with 2 crew members watching for wrinkles and deleterious materials as well as removing all debris and sandbags from trench. Second crew is using Mini Excavator and crew to cut remaining Anchor trench around East end of Cell. RCS is also working on Storm water structures in North end of Cell Perimeter Berm.
Comanco has began to uncover edge of Liner in East end to check GCL and prepare all layers of Liner for Tie in. Trailer with equipment arrived at 11:30 due to mechanical issues. Comanco began to stage Liner material and set up trailer by Lunch time. Comanco Deployed GCL and Secondary Liner panels 152-156 in floor of Cell before rains came.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/7/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 76 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley and Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco Vacuum tested 80' section of seamed HDPE in anchor trench before Deployment of Composite started in Northeast corner Working North to south. Comanco has 9 person Crew working today.
RCS is working on placing crushed concrete for maintenance road on Berm from Energy plant. Also has small crew setting up to widen Berm that runs East to West between tire Pad and cells 10 & 11.
Concrete guys back setting up Walls for Cell 11 pump station @ Sump Risers. Base has been plumbed with Conduits for power.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/8/15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley and Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumed deploying Secondary Composite today while part of crew works on repairs throughout North end of Cell ahead of Composite Deployment. All areas ahead of composite have been repaired and vacuum tested finishing all repairs by end of day leaving a handful of patches to be tested.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/9/15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 74 at 7:00 a.m. High (F) 93 at 3:00 p.m.

CQA's On Site: Kevin Lesley and Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumed placement of Secondary Composite once final patches have been tested. North end of Cell floor and East Berm has been covered and Secondary Composite starts in South Berm by 10 am.
It started raining heavy before RCS could finish excavating East anchor trench to the 2' width as per Specs. Crew back on Liner twice to clean up for start of Primary HDPE liner but rain came again. Installation activities ended around 3:30 PM due to adverse weather.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/10/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 74 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley and Elias Perkins

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco Deployed Primary HDPE liner panels 174-202 completing HDPE for Cell 11 using 2 fusion wedges. Crew worked on installing rain flap in South Berm so RCS can shape outside slope of Berm for Sod placement. Primary & Secondary layers have been seamed together and vacuum tested at South Anchor trench. Destructs DFP 52-59 have been taken and sent to Lab..

Crew to start repairs and seaming Primary and Secondary layers together in remaining Anchor trench and start Pressure test and repair work on Monday to prepare for Composite Deployment. Test results for Destructs taken today should be in by Monday evening.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/13/15 Mon

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco is on site to resume detail work & repairs of Primary HDPE liner. Comanco worked on repairs throughout day and Vacuum tested all repairs today. Began cleaning out North Anchor trench for seaming Primary HDPE to Secondary Liner. Plan is to finish Welding in Anchor trench tomorrow then deploying Primary Composite. Comanco welded Rainflap @ Tie in joining Cell 11 to Cell 10 before leaving today so RCS can finish Sod in Slope joining Cell 10 & 11 .

RCS has guys on site to build forms for Concrete Wall Structure @ sump Risers. Base is set and poured by end of day.
RCS also has small crew working on spreading and rolling crushed concrete on Berm from Energy plant.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/14/15 Tue

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 74 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco Vacuum tested 80' section of seamed HDPE in anchor trench before Deployment of Composite started in Northeast corner Working North to south. Comanco has 9 person Crew working today.
RCS is working on placing crushed concrete for maintenance road on Berm from Energy plant. Also has small crew setting up to widen Berm that runs East to West between tire Pad and cells 10 & 11 .
Concrete guys back setting up Walls for Cell 11 pump station @ Sump Risers. Base has been plumbed with Conduits for power.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/15/15 Wed

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 72 at 7:00 a.m. High (F) 96 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumed deploying composite today covering the Southeast Berm Slope completing deployment. Crew is seaming all seams with zip ties per Specs and completing repairs at all Butt seams with fabric. By end of day Comanco resumed welding Primary to Secondary in East anchor trench. Late afternoon Rain storm stopped crew just shy of finishing anchor trench work.
RCS continues work on access road down Berm from Plant. Also has small crew with Mini Excavator installing Storm water drains at structures around outside of Cell 11 with corrugated Pipe and building concrete pads around inlets of pipe on either side of Drainage structures.
Concrete guys back dismantling wood forms around Concrete Wall @ Sumps Risers.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/16/15 Thr

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 72 at 7:00 a.m. High (F) 95 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco resumed welding Primary HDPE liner to Secondary Liner in East anchor trench before installing Rainflap around East Berm. Part of crew is cleaning up throughout Cell including Removing all empty sand bags throughout. Majority of crew working on Rainflap. Comanco has crew welding Boots on Primary riser pipes after lunch. Comanco stopped welding Boots on Risers @ 5pm due to rain. Plans to complete Boot work tomorrow and Vacuum test seam in East trench. RCS is working on Storm water structures around outside of Cell while Concrete guys are cleaning up all materials left over from concrete forms at Sump pumping station. Concrete guys formed up the encasements above the existing Force main / LCS transmission pipes as per Drawings on pg 8 section A-A'. Concrete poured in said Encasement forms by end of day as well as mitered End Sections of Storm water drains @ West & East of Downdrain Junction Boxes. See Storm water Drainage Outlet Structure Details marked "Plan View" on pg 8.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/17/15 Fri

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 73 at 7:00 a.m. High (F) 92 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

Comanco has small crew on site to finish Welding Boots @ Riser pipe and to finish Vacuum testing East anchor trench seaming.
RCS resumes using Excavator to sift through stockpile of Protective cover and load 1 Haul truck to move material back into area for placement in East end of Cell 11. RCS has 2 crewmembers on ground watching for Roots and Stumps as well as wrinkles to remove any unacceptable material From Protective cover during placement. RCS has GPS Dozier spreading protective cover into East end of Cell.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 7/18/15 Sat

Weather Description

Sky Cover: Partly Cloudy Amt. of Precip: 0 Wind: 5-10 (mph)

Temp: Low (F): 72 at 7:00 a.m. High (F) 94 at 3:00 p.m.

CQA's On Site: Kevin Lesley

Daily Load Count:	0 loads to berm (0 CY, Cumulative 35732 CY),
Major Construction Equipment:	1- Excavator, 1 - Cat D-8T Dozier, 1 - CAT D-6 Dozier, 11- Off road haul trucks, 1- Smooth drum Roller

Contractor(s) Construction Progress:

RCS resumed placing protective cover using both Doziers and Excavator with 1 Haul truck. Crew also has 3 crewmembers on ground watching for Roots and unsuitable materials.

200×180' area left to Cover staring this morning. Crew finished protective cover placement this evening. Haul truck brought out of Cell before grading down the temporary 4' entrance road into Cell in East end.

CQA (s) Monitoring Activities and Test Results:

Observe & document today's construction activity in and around Cell 11 and test material as needed in Berm.

CQA Specialist: Kevin Lesley

Brantley Engineering, LLC

CQA Daily Field Monitoring Summary

Project Number: 2015-101	Owner: Omni Waste of Osceola County, LLC
Project Name: JED Cell 11 Construction	Contractor: RCS Excavation
Location: St. Cloud, Florida	Installer: Comanco
	Date: 8/27/15

Weather Description

Sky Cover:	Partly Cloudy	Amt. of Precip:	0"	Wind:	5-10	(mph)
Temp: Low (F):	63 at 7:00	a.m.		High (F)	90 at 3:00	p.m.

CQA's On Site: Allan Brantley

Daily Load Count:

Major Construction Equipment:

Contractor(s) Construction Progress:

RCS and Brantley Engineering were on site to walk through completion of the project and generate a punch linst of any outstanding items before demobilization.

CQA (s) Monitoring Activities and Test Results:

The site was visited at the request of the client to perform full time CQA services for the JED Cell 11 construction project. A final walk through of the site was performed to determine completion of the project. A meeting was held with the contractor and client to discuss punch list items that need to be completed. Items were purely cosmetic and do not warrant a second visit.

CQA Specialist: Allan Brantley

APPENDIX L
Project Photos

Photographs

Initial Clearing of Wet Materials, Topsoil, and Vegetation

Dewatering Pump During Initial Construction Activities

Initial Placement of General Fill Materials

Placement, Spreading and Compaction of General Fill Material

Compaction Testing of General Fill Utilizing the Nuclear Density Gauge

Moisture Conditioning of General Fill Materials

Construction of Eastern Berm

Unloading and Tarping of GCL Material

Excavation of Anchor Trench

Excavation of Leak Detection Trench

Exposing Geosynthetics at Tie-In to Cell 10

Tie-In to Cell 10

Prepared Subbase Prior to Geosynthetic Deployment

Continued Preparation of Subbase Prior to Geosynthetics Deployment

Placement of GCL in Cell Floor

Placement of Secondary HDPE over GCL

Deployment of Primary HDPE Liner

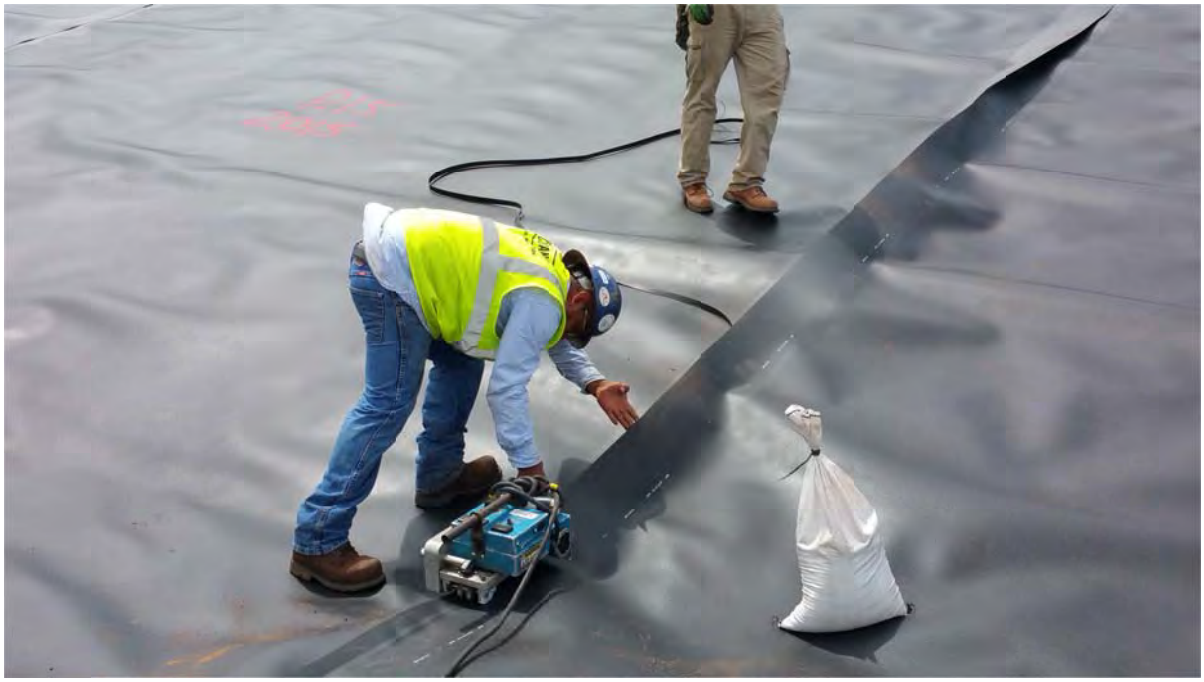
Deployment of Secondary Geocomposite

Fastening of Geonet Seams with Zip Ties

Sewing Geotextile Seams on Geocomposite

Extrusion Welding of a Patch

Non Destructive Vacuum Testing of Extrusion Weld



Fusion Weld of HDPE Seams

Cell Progression with Secondary Geocomposite and Primary HDPE

Placement of Protective Cover Material

Continued Placement of Protective Cover Material

Spreading of Protective Cover Material with Spotters

Construction of Leachate Collection System with Pipe and Stone Wrapped in Geotextile

Butt Fusion Weld of Leachate Cleanout Line at Sump Risers

Installation of Reinforced Concrete Pad at Sump

Installation of Storm Water Drainage Outlet Structure

Stabilization of Cell Perimeter Slopes with Sod Vegetation