CEC

CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS, AIR PERMITTING, AND REGULATORY COMPLIANCE SERVICES

August 11, 2017

Ms. Kimberly Rush, P.E.
Permitting and Waste Cleanup Program Administrator
FDEP – Central District
3319 Maguire Blvd, Suite 232
Orlando, FL 32803-3767

Subject: Vista Class III Landfill – Apopka, Florida
DEP Permit Application No. SO48-0165969-029
Certification of Completion
Cell 5 Liner System and Leachate Collection System

Dear Ms. Rush:

On behalf of Vista Landfill, LLC (VLF), Carlson Environmental Consultants, PC (CEC) is please to submit the enclosed construction certification documents to the Florida Department of Environmental Protection (FDEP) for the above referenced project. These documents include the FDEP Certificate of Construction Completion Form 62-701.900(2) and CEC's Final Construction Quality Certification report and associated As-Built Drawings.

If you have any questions regarding the submittal please contact me via email snunes@cecenv.com or telephone at (863) 634-7185.

Respectfully Submitted,

Seth A. Nunes, P.E.
Principal
Carlson Environmental Consultants, PC

Copies To: Sheree Grant, Site Engineer, VLF
Deborah Perez, District Manager, VLF
Jay Davoll, P.E., City of Apopka

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: SC48-0165969-029-SO-MM County: Orange

Name of Project: Cell 5 Construction

Name of Owner: Vista Landfill, LLC

Name of Engineer: Seth A. Nunes, PE

Type of Project: Class III Landfill Cell Construction

Cost: Estimate $ 2,150,000 Actual $ 2,150,000

Site Design Quantity: 2,500 ton/day Site Acreage: 150 (total site) / 8.7 (Cell 5) Acres

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

No substantial deviations from the Plans except for the moving the liner runout on the south side up to an anchor trench on top of the intercell berm and for small adjustments to the basegrades on the east slope so that the actual tie-in with Cell 1's liner would match.

Address and Telephone No. of Site: 242 West Keene Road, Apopka, Florida 32703
Telephone: (407) 886-2920

Name(s) of Site Supervisor: Sheree Grant Cell Phone: (407) 902-1469

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.: SC48-0165969-029-SO-MM Dated: 7/7/2016

Date: 8/11/2017

SETH A. NUNES LICENSE No 69457 STATE OF FLORIDA PROFESSIONAL ENGINEER

Signature of Professional Engineer

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

Northeast District
7825 Baymeadows Way, Ste. B200
Jacksonville, FL 32256-7590
904-448-4300

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

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

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33901-3881
941-332-6975

Southeast District
400 North Congress Ave.
West Palm Beach, FL 33401
561-681-6600

CONSTRUCTION QUALITY ASSURANCE CERTIFICATION REPORT

For the:

CELL 5 CONSTRUCTION PROJECT

At the:

VISTA LANDFILL - APOPKA, FLORIDA

SC48-0165969-019

Prepared for:

VISTA LANDFILL, LLC
Vista Landfill
242 W. Keene Road
Apopka, Florida 32703

Prepared by:

CARLSON ENVIRONMENTAL CONSULTANTS, PC
305 South Main Street
Monroe, NC 28112
(704) 283-9765

August 2017

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1.0 INTRODUCTION

This report documents the construction, testing, and observations performed for the construction of the Cell 5 at Vista Landfill, LLC (VLF), which is a subsidiary of Waste Management of Florida, Inc. (WMIF), in Apopka, Florida. Cell 5 has a total area of 8.7 acres and ties into the adjacent Cell 1. WMIF retained Carlson Environmental Consultants, PC (CEC) of Monroe, North Carolina to perform Construction Quality Assurance (CQA) duties for this construction project. These CQA duties included field observations, field testing, review of field testing reports, laboratory results and record drawings prepared in accordance with the project design and permit requirements.

The following were exceptions associated with this construction. The construction drawings noted below did not have the exact surveyed locations for the tie-ins to the liner system of Cell 1 when prepared. When the Cell 1 tie-in area was exposed, some minor field adjustments had to be made to the base grades on the slopes of the east side of Cell 5 so that the tie-in slopes would effectively transitioned between the two cells. In addition, a deviation from the drawings, that was approved after their preparation, was used during this construction that had the southern cell geosynthetic boundary moved from its run-out location on the south side of the southern intercell berm up into an anchor trench on the top and in the middle of this berm.

Additional construction activities beyond the actual cell construction included extending Pond 12 on the east side of the property further to the east and constructing Pond 4 on the west side of the property just adjacent to Cell 5.

2.0 REFERENCE DOCUMENTS

The following are the reference documents for this project:

- Technical Specifications for Vista Landfill Class III Facility, prepared by Geosyntec, dated July 2012.
- Construction Quality Assurance Plan for Vista Landfill Class III Facility, prepared by Geosyntec, dated July 2012.
- Cell 5 Construction Drawings for Vista Class III Landfill, prepared by Geosyntec, dated December 2016.

3.0 PERSONNEL

The key personnel and companies involved with the construction of Cell 5 of VCHLF are:

1. OPERATOR & CONSTRUCTION MANAGER:
   Vista Landfill, LLC. (407) 553-4939
   242 West Keene Road
   Apopka, Florida 32703

Name	Title
Sheree Grant	Market Area Engineer

2. DESIGN ENGINEER:
   Geosyntec Consultants (813) 379-4394
   13101 Telecom Drive, Suite 120
   Temple Terrace, Florida 33637

Name	Title
Craig R. Browne, P.E.	Design Engineer

3. CONSTRUCTION QUALITY ASSURANCE (CQA):
   Carlson Environmental Consultants, PC (704) 283-9765
   305 S Main Street
   Monroe, North Carolina 28112

Name	Title
Seth A, Nunes, P.E.	Certifying Engineer
Tommy Bradford	CQA Site Manager

4. GENERAL CONTRACTOR:
   Southeast Environmental Contracting, Inc. (229) 794-3330
   5667 Val Del Rd,
   Hahira, GA 31632 ·

Name	Title
Randy Bradshaw	Project Manager
John Holmes	Superintendent

5. GEOMEMBRANE MANUFACTURER:
ARGU/America, Inc. (843) 546-0600
500 Garrison Road
Georgetown, South Carolina 29440

Name	Title
Danny Newton	Project Manager
Grant Palmer	Plant and Shipping Manager

6. GCL, GEOCOMPOSITE AND GEOTEXTILE MANUFACTURER:
GSE Environmental (281) 230-6745
19103 Gundle Road
Houston, Texas 77073

Name	Title
Mary E. Cruthirds	Project Manager

7. GEOSYNTHETICS INSTALLER:
Environmental Specialties International, Inc. (225) 291-2700
7943 Pecue Lane, Suite A
Baton Rouge, LA 70809

Name	Title
Robert Gant	Project Manager
Mohammed Malimar	Superintendent

8. SOILS TESTING LABORATORY:
Genesis Testing Services, Inc. (678) 413-9332
1070 Iris Drive, Suite C
Conyers, Georgia 30094

Name	Title
Jeff Akandu	Laboratory Manager

9. GEOSYNTHETICS TESTING LABORATORY:
TRI Environmental, Inc. (512) 263-6201
9063 Bee Caves Road
Austin, Texas 78733

Name	Title
Jennifer Tenney	Project Manager

10. PROJECT SURVEYOR:

Peavey and Associates Surveying & Mapping, PA (863) 738-4960
690 Alice Place
Bartow, Florida 33830

Name	Title
Deborah L. Peavey, P.S.M.	Registered Land Surveyor

4.0 SCOPE OF SERVICES

The scope of services for the CQA work is summarized below. Work was performed in conformance with the project design and permit requirements.

4.1 PROJECT MANAGEMENT/CERTIFYING ENGINEERING

A. Project management activities consisted of:

1. Reviewing project plans, specifications and permit requirements.
2. Scheduling field staff and site visits to ensure work has progressed in a satisfactory manner.
3. Attending any construction meetings, which would identify roles and responsibilities of parties, involving and establishing lines of communication.
4. Reviewing quality control data, conformance test data and daily field reports.
5. Assisting in the preparation of the construction documentation report.

B. Certifying Engineer activities included:

1. Reviewing documentation, plans, specifications, test procedures, and test data.
2. Performing site visits to ensure the construction and CQA are progressing as per the design and specification.
3. Assuring documentation compliance with design and permit requirements.
4. Observing field activities on a periodic basis and at critical design points.
5. Assisting the preparation of the construction documentation report.
6. Signing and sealing the certification report for Cell 5 construction as a Professional Engineer registered in the State of Florida.

4.2 FIELD CQA SERVICES

This project is constructing the 8.7-acre cell construction project. This construction project also included the construction of the forcemain for Cell 5, the construction of Pond 4 and the build out of Pond 12 to its final design configuration. The cell construction consisted of: 1) excavating, placing and preparing the subgrade surface for the cell area, the intercell berm and the perimeter berm for this cell, and sediment control structures; 2) placing four (4) dewatering drains across the floor to remove water from the subgrade to support cell construction; 3) placing and preparing structural fill and the preparing the base grade layer for the cell; 4) installing geosynthetic clay liner (GCL) on top of the base grade in the areas of the sump and along the leachate corridor; 5) installing textured 60-mil high density polyethylene (HDPE) liner over the cell (covering the GCL where designed immediately after it was placed); 6) installing the geocomposite drainage layer over the geomembrane; 7) placing the 2-foot minimum thickness of protective cover sand; 8) installing leachate riser and leachate pipes with aggregate and wrapping with geotextile in the sump and along the design leachate corridor alignment; and, 9) installing the forcemain pipe around the cell to connect to existing forcemain towards the existing manhole.

Field CQA services were generally subdivided into two activities, preconstruction and construction.

4.2.1 PRECONSTRUCTION ACTIVITIES

Preconstruction activities included the following:

1. Conformance sampling and testing of the soils and drainage media utilized for the project.
2. Review of all contractor submittals for materials and structures that will be used for construction.
3. Taking inventory and review of sampling and test results for conformance testing of geosynthetic components utilized for this project.

4. Review of the geosynthetic manufacturers' QC submittals.

4.2.2 CONSTRUCTION ACTIVITIES

Construction activities included the following:

1. Observation of the excavation required to achieve the landfill cell's subgrade.
2. Observation and documentation of fill placement to bring the subgrade up to base grade elevations with structural fill.
3. Observation, documentation and testing of all geosynthetic materials being installed: Geosynthetic Clay Liner (GCL), geomembrane, geocomposite, and geotextile. This included the geomembrane documentation for trial welds, panel placement, panel seaming, seam nondestructive testing, seam destructive testing, repairs and retests for the HDPE geomembrane liner installation.
4. Observation and documentation of the placement of the protective cover sand layer.
5. Observation of the HDPE pipe for Cell 5 leachate collection with the stone aggregate. The pipe and stone was wrapped with geotextile.
6. Observation, testing and installation of the forcemain for this cell.

4.3 GEOTECHNICAL/GEOSYNTHETIC LABORATORY TESTING

The Genesis Testing Services (GTS) and TRI Environmental (TRI) laboratories listed in Section 3.0 provided geotechnical and geosynthetic laboratory testing services, respectively. Test results were provided to the Senior Site Quality Assurance Manager and the Certifying Engineer to ensure the results were in general compliance with the project specifications. The tests and test methods performed in association with the geotechnical and geosynthetics portion of the project are listed below:

<u>Structural Fill and Base grade Soil Layer</u>

1. Soil Classification ASTM D 2487

2.	Particle Size	ASTM D 422
3.	Atterberg Limits	ASTM D 4318
4.	Moisture-Density Relationship	ASTM D 698

Protective Cover Sand Layer

1.	Soil Classification	ASTM D 2487
2.	Particle Size	ASTM D 422
3.	Hydraulic Conductivity	ASTM D 2434
4.	Calcium Carbonate	ASTM D 3042

Stone Aggregate

1.	Soil Classification	ASTM D 2487
2.	Particle Size	ASTM C 136
3.	Hydraulic Conductivity	ASTM D 2434
4.	Calcium Carbonate	ASTM D 3042

60-mil HDPE Geomembrane

1.	Thickness	ASTM D 5994
2.	Density	ASTM D 1505
3.	Tensile Properties	ASTM D 6693
4.	Carbon Black Content	ASTM D 1603
5.	Carbon Black Dispersion	ASTM D 5596
6.	Interface Shear Strength	ASTM D 5321

Non-woven Geotextile

1.	Mass/Unit Area	ASTM D 5261
2.	Grab Tensile Strength	ASTM D 4632
3.	Static Puncture Strength	ASTM D 6241
4.	Puncture Resistance	ASTM D 4833
5.	Trapezoidal Tear	ASTM D 4533
6.	AOS	ASTM D 4751
7.	Permittivity	ASTM D 4491

Geosynthetic Clay Liner

1.	Hydraulic Conductivity	ASTM D 5887
2.	Internal Shear Strength	ASTM D 5321

Geocomposite

Geotextile:

1.	Mass/Unit Area	ASTM D 5261
2.	Grab Tensile Strength	ASTM D 4632
3.	Trapezoidal Tear	ASTM D 4533
4.	AOS	ASTM D 4751
5.	Permittivity	ASTM D 4491

Geocomposite:

1.	Transmissivity	ASTM D 4716
2.	Ply Adhesion	ASTM D 7005
3.	Interface Shear Strength	ASTM D 5321

The tests and test methods were in general conformance with the requirements of the site permit and the Construction Quality Assurance Plan and appropriate for each of the materials.

4.4 SOILS & GEOSYNTHETICS DOCUMENTATION REPORT

This documentation report contains the following sections:

1. A narrative describing the construction sequence, certification and testing programs utilized on the project. A statement certifying that construction was in accordance with the permit drawings and the quality assurance plan.

2 A series of appendices documenting the following:

- Soil laboratory test results for structural fill which was also used for the base grade soil
- Field test results for structural fill and base grade soils
- Subgrade acceptance of base grade surface before geomembrane liner placement
- Manufacturer's geosynthetic quality control documentation
- Geosynthetic conformance testing results
- Geomembrane installation documentation data

- Soils laboratory test results for the protective cover sand and leachate collection stone
- Construction photographs

3. A set of record drawings containing the following:
   - Top of base grade and protective cover elevations
   - Location of HDPE leachate pipes within the cell
   - Location of HDPE liner panels, seams, destructive samples, repairs and anchor trench alignment.

5.0 CONSTRUCTION ACTIVITIES

5.1 INITIAL CELL CONSTRUCTION

Southeast Environmental Contracting, Inc. (SEC) started construction in early 2017. SEC started stripping the Cell 5 construction area and began excavating areas of the cell to achieve sub-base grades. Carlson Environmental Consultants, PC (CEC) field personnel arrived on site in mid-April while excavating was still in process. Conformance testing on this source and alternate materials were performed by GTS and are presented in Appendix A.1. During the excavation ground water was encountered near to the subgrade so that four sock-drains were installed with pumps to stabilize the subgrade during this construction. These drains were consistently maintained through the project. They were properly grouted below the liner system and then removed above after the protective soil layer and the leachate collection system had been installed. Structural fill was placed in the fill areas to bring the cell, the pond and the surrounding berms up to their design subgrade levels as shown in the construction drawings. Prior to placing any structural fill all areas were proof rolled with a loaded hauling truck and any loose or overly wet areas were removed. Each lift of structural fill was moisture conditioned as required and then mixed with a bulldozer. The one-foot lift of structural fill was then compacted with a HAMM 3410 smooth drum vibratory roller. Soil compaction of each lift was checked and verified to have at least the minimum compaction required in the CQA Plan. Density/moisture readings were determined in the field by our CQA site manager using a drive cylinder density apparatus. Results of these density tests are included in Appendix A.2. Placing and compacting structural fill progressed in 12-inch lifts as required up to the design grade elevation.

5.2 CELL BASE GRADE CONSTRUCTION

The base grade soil material for the cell was the same material used for structural fill. Conformance samples for base grade material were the same samples for structural fill and results are included in Appendix A.1. SEC placed (when necessary), conditioned and compacted the 6-inch base grade soil lift over the area requiring base grade for this Cell 5 construction.

Results of the density moisture tests are presented in Appendix A.2. Once SEC constructed the cell to design base grade elevations, they fine-graded the surface followed with a smooth drum vibratory roller. The top of subgrade elevations was then certified by a survey crew from Peavey and Associates Surveying & Mapping, PA (Peavey) prior to installing any geosynthetics (see the drawings in the Appendix F). The surface of the liner had to be maintained by moisture conditioning and rolling until the geosynthetic materials were installed over it. This was performed so that the sand would not dry out and become powdery. Once a significant part of the base grade surface had been certified, then ESI was mobilized to the site to begin installing the geosynthetic clay liner (GCL) and the geomembrane liner.

5.3 GEOSYNTHETIC PRECONSTRUCTION ACTIVITIES

5.3.1 GEOSYNTHETIC MATERIAL AND QUALITY CONTROL

The geosynthetic manufacturers provided quality control certificates for all material used on this project. This information was reviewed and found to be in compliance with the approved Quality Assurance Plan found in the site's operating permit. The geosynthetic system consisted of four types of materials. The components of the geosynthetic system included the following:

1. 60-mil textured high-density polyethylene (HDPE) geomembrane, AGRU
2. Geotextile, GSE Environmental
3. Geosynthetic Clay Liner (GCL), GSE Environmental
4. Geocomposite, GSE Environmental

A geotextile product was installed as a filter material between the leachate sump and corridor stone materials and the protective cover sand. Textured geomembrane liner was installed for the cell and was placed over a GCL which was installed under the leachate corridor and sump as part of the geosynthetic liner system for Cell 5. The geosynthetic materials were delivered, stockpiled and inventoried prior to or during the installation of the liner system.

5.3.2 GEOSYNTHETIC CONFORMANCE TESTING

Prior to shipment of the geosynthetics, the materials were sampled in the plant and sent to the TRI laboratory for conformance testing. Conformance testing was conducted in accordance with industry standards and the Quality Assurance Plan and project specifications. All test results met or exceeded the project requirements for all four different materials. In addition to these tests, interface shear testing was also performed on a layered liner sequence both with the GCL and without the GCL. The testing results were also greater than the minimum required results. These results are all shown in Appendix B.

5.3.3 SUBGRADE ACCEPTANCE

Prior to the deployment of the geomembrane and GCL, CEC's CQA Site Manager and the ESI's Superintendent conducted a final walkover of the base grade surface. The walkover was to identify any unacceptable areas to be addressed prior to its coverage with geomembrane and it applicable GCL. Once the area was deemed acceptable, both the ESI's Superintendent and CEC's representative would complete the subgrade acceptance form for that day, referencing the panels placed. These forms are included in Appendix A.5.

5.3.4 GEOSYNTHETIC INSTALLATION AND DOCUMENTATION

Upon arrival to the site, ESI supplied current gauge calibration records for the tensiometers used. These documents are included in the Appendix C.1.

Geosynthetic installation began along the north slope of Cell 5. ESI's deployment consisted of pulling HDPE liner (geomembrane) panels down the slope. The geomembrane rolls were 23 feet wide by about 520 feet long. The geomembrane was a 60-mil textured HDPE liner. Each geomembrane panel was pulled from the roll which was supported by a spreader bar attached to a compact track loader (CTL). The CTL was also used to bring the rolls around from their storage area up to the staging area. The panels were pulled into place by ESI technicians using both a LGP rubber-tired four-wheeler (ATV) and their hands. Additional ESI staff would help

position the panels for seaming. This activity was closely monitored to ensure that no damage occurred to the geomembrane or any underlying GCL. Panels were generally positioned to minimize the quantity of seams in the cell and leachate sump and corridor. Seams were shingled with at least a 4-inch overlap down slope within the cell.

GCL panels were laid down the center of the leachate corridor along the floor from the east slope which is against Cell 1 down to the sump. These GCL panels were laid prior to placing the overlying geomembrane panels. GCL panels were also placed within the sump and at least 5 feet beyond its boundary. Another panel width of GCL was brought up the leachate riser trench on the west slope. The GCL panels were overlapped according to the specifications for this material which included the placing of bentonite powder between all butt seams. The GCL panels were only placed as far as they could be covered with geomembrane liner that day but also prior to any possible precipitation. The GCL material was always protected from being hydrated both while it was being stored on site and after it had been installed.

Prior to the deployment of the geomembrane, the anchor trench was excavated with a hydraulic excavator on the north, west and south berms. The anchor trench was cut to a minimum of two feet deep and approximately two feet wide as designated in the construction drawings. The anchor trench was verified to be clear of any debris prior to deployment. Once the installation of all geosynthetic materials and testing was completed, the anchor trench was then backfilled and compacted. The backfill material consisted of on-site soils which would not damage the geosynthetic materials.

CEC's CQA technician was responsible for documenting panel placement, trial weld testing, seam welding, testing (destructive and nondestructive) of completed seams and repairs, as well as visual inspection of the geomembrane installation. Field activities and observations were recorded on daily field reports and field logs. The data associated with the installation of the geomembrane is presented in Appendix C. The CQA technician included the daily activities in the Daily Field Reports which are presented in Appendix D.4 of this report.

Panel placement information included documenting the date of placement, the time of placement, panel number, panel location (slope or floor), source roll number, panel length, observer's identification and any pertinent comments. Once panels had been pulled into place, they were manually adjusted so that there was a minimum 4-inch overlap for adjoining panels.

Panel seaming information included the date of seaming, time the seam was started, seam's ID number, seam location, operator's ID number, seaming unit ID number, seam length, observer's ID and any pertinent comments. ESI utilized a double-wedge type fusion welder to perform most seaming. The double-wedge type fusion welder creates two fused welds split by an air channel. Extrusion welding was also performed using an extrusion gun and HDPE welding rod. The extrusion welding process was used on all repairs.

Trial weld information included date of test, time of test, sample ID number, seamer's ID number, seaming unit ID number, seaming unit settings, test values, sample pass or fail, observer's ID number and any pertinent comments. Trial welds were conducted as a rule at one for every five hours of machine/welder use, which is usually at the beginning of each morning and then after lunch. Occasionally, another trial weld would be carried out later in the evening if the seaming was to be continued beyond the five-hour period designated in the CQA Plan. Additional trial welds were conducted if machine operators changed, if machine settings changed, if the power supply was interrupted or if personnel on site determined that the seam quality had degraded to an unacceptable level. Trial weld specimens were tested on a calibrated field tensiometer. Each trial weld sample test series consisted of the testing of at least two one-inch wide specimens for peel adhesion and two one-inch wide specimens for shear strength.

Nondestructive testing information included date of test, seam ID number, seam location, seam station, tester's ID number, air test times and pressures, air test pass or fail, vacuum test pass or fail, test observer ID and any pertinent comments. Nondestructive testing was conducted to verify seam continuity and integrity.

Air pressure testing was conducted on fusion-welded seams. The testing involved sealing both ends of the air channel, inserting a hollow needle attached to a pressure gauge into the air

channel, and pressurizing the seam to 25 to 30 psi. A seam was accepted if it exhibited a pressure loss of not more than 3 psi over a 5-minute period after allowing the pressure to stabilize for approximately two minutes and if a total pressure loss was observed when the air channel was cut at the opposite end of the seam from the needle and test gauge. Seams exhibiting acceptable pressure loss were recorded as passing, and seams exhibiting unacceptable pressure loss were tested in segments until there was acceptable pressure loss and the flawed seam was then marked for repair.

Vacuum testing was conducted on all extrusion welds in the module (repairs and extruded seams). Vacuum testing consisted of wetting the seam segment to be tested with a soapy solution then applying a vacuum to a sealed area of the seam surface of the seam segment using a vacuum box. While under vacuum, the area was observed for approximately 20 seconds to see if any bubbling occurred which would indicate a leak in the seam. If no bubbling was found the area was marked approved and the testing moved to the next segment. If bubbling was noted, it was marked for repair. After it's repair and subsequent vacuum box test, the repair was then considered acceptable.

Destructive seam sample information included sample ID number, date sample was designated, date sample was tested, sample location (seam ID number and station), seamer ID number, machine ID number, field test pass/fail, laboratory test pass/fail and any pertinent comments. Destructive seam samples were designated and sampled from welded seams at a minimum rate of one per 500 linear feet seamed over this project. The goal of this testing program was two-fold: first, to obtain samples representative of the overall quality of the installation; and second, to test suspect areas.

Each destructive sample measured approximately 42 inches along the seam by 12 inches wide across the seam and was cut into three sections. ESI selected a section to conduct their field testing prior to submittal of another section to TRI for laboratory testing. The third section was kept on site for the duration of the project as an archive sample. If the specimens passed the field test, the sample was submitted to the geosynthetic laboratory for testing. If the specimens had failed the field test, then additional samples welded by the same machine and operator on that day, would be tracked on either side of the failed seam sample until passing results were

achieved. The same process would be repeated if a seam failed during a laboratory test. The seam would be tracked on either side until there were passing results for both field and laboratory samples. These tracked samples would be called bounding samples and they would define the limits of the unacceptable seam. The seams between these passing bounding samples would be repaired in accordance with the project design requirements.

For Cell 5 construction, 48 destructive seam samples were selected on wedge (fusion) welds. There were no destructive tests which failed. Since there were no failing tests there were also no bounding samples or tests. No seams had to be repaired due to a failing destructive sample. All test data, including data from TRI, is included in Appendix C.6.

Repair information included the repair number, date of repair, repair location, description of damage, size and type of repair, repair crew ID, date repair was tested, tester ID, observer ID and any pertinent comments. Typical repairs of the geomembrane included:

1. Patching locations of destructive seam samples and nondestructive air-testing holes,
2. Patching damage to the liner created during the transportation and installation process,
3. Repairing of any seams or segments of seams rejected due to nondestructive and destructive testing,
4. Repairing of any seams or segments of seams rejected by ESI's QC.
5. Patching of "T" seam locations.

The CEC CQA Site Manager and ESI Geosynthetic Superintendent conducted a final walkthrough prior to acceptance of each segment of geomembrane. The final walkthroughs were conducted to assure that necessary repairs and testing had been completed and that no additional damage had occurred during installation. Any areas requiring attention were noted and repaired and tested as appropriate prior to the certification of completion. A geomembrane panel layout drawing showing the panels and seams, all repairs and destructive sample locations is included in Appendix F.

After a walkthrough and approval of each geomembrane segment, geocomposite panels were deployed over the exposed geomembrane liner. The geocomposite panels were overlapped by 6 inches for adjacent panels and then by 12 inches for butt seams. All geocomposite repairs were overlapped by 12 inches. The geocomposite seams had the geonet portions tied with plastic ties and the upper geotextile portions were sewn or capped with geotextile for butt seams. Another walkthrough was done on the finished geocomposite prior to placing protective cover sand so that both CEC and ESI approved that all necessary repairs and testing had been completed and that no additional damage had occurred to this section during or since installation. Any areas requiring additional attention were noted, repaired, and tested as appropriate prior to the certification of completion.

5.4 PROTECTIVE COVER SAND

The protective cover sand was from soil that was already on site. Conformance samples were submitted to GTS for the testing of its particle size gradation, hydraulic conductivity, hydraulic conductivity and calcium carbonate content. These tests passed all requirements for this material prior to its installation into the cell (Refer to results in Appendix A.3). Off-road haul trucks were loaded with sand and the sand was hauled to the southern intercell berm and where it was placed into the cell with several 3- to 4-foot thick access roads that were established so that sand could be pushed out across the cell and up the slopes. The minimum 3-foot thick haul roads were established within the cell using protective cover sand so that the off-road haul trucks could travel in the cell without damaging the geosynthetic liner system underneath. A LGP dozer was then used for spreading the 2-foot protective cover sand layer. When protective cover reaches the leachate corridor and sump areas then these features were constructed as discussed in Section 5.5, then protective cover sand was placed over these to maintain the 2-foot of cover over the geosynthetic liner. In addition, a lift of protective cover was placed over the exposed geotextile at the sump so that the geotextile would not be adversely impacted by direct sunlight.

When this was completed, the top of protective cover elevations, from the established grid points, were then certified by a survey crew from Peavey (See the drawings in the Appendix F).

The certification was verified that a layer thickness of at least two feet of protective cover was established over the geosynthetic liner system and the leachate collection system.

Once the protective cover was placed and spread in the cell, the eight protruding sock drain pipes were grouted as discussed previously and the pipe-ends were then removed below the geosynthetic liner system. The subgrade, geomembrane and geocomposite were all repaired in accordance with the CQA plan and specifications for this project at each location. The protective cover layer was then spread to design grade as well.

5.5 LEACHATE COLLECTION SYSTEM INSTALLATION

SEC also began construction of the leachate collection system during the installation of the protective cover sand. A panel of 8-ounce per square yard nonwoven geotextile was laid down the middle of the proposed leachate corridor as a filter medium between the sand and the No. 57 stone. The perforated leachate pipe was then welded and placed on the 8-ounce fabric in the proposed corridor area. Prior to installing, samples of the leachate stone were sent to the GTS laboratory for conformance testing. The stone was typically non-carbonaceous and complied with the permeability requirements for this project. The gradation though was slightly coarser in the larger fraction of this stone than with ASTM's gradation envelop for No. 57 stone. This stone will still adequately perform its function as designed without an adverse impact since the permeability requirement has been met. The stone was hauled from the on-site stock pile to the leachate corridor area being constructed. The stone was placed on the geotextile around the perforated pipe. This was continued across the floor to the base of the east slope where it turned southward and then with a solid pipe cleanout going up the east slope. The top of pipe was surveyed by a survey crew from Peavey at 50-foot intervals (the as-built drawing is included in Appendix F). The geotextile seam was sewn together using an industrial grade sewing machine and a polypropylene fiber.

At the west end of the cell, the sump and the riser trench had to have the geotextile, pipes and stone aggregate installed. Panels of 8-ounce per square yard nonwoven geotextile were laid down to cover the sump area and to be able to enclose the stone. The panel seams were sewn

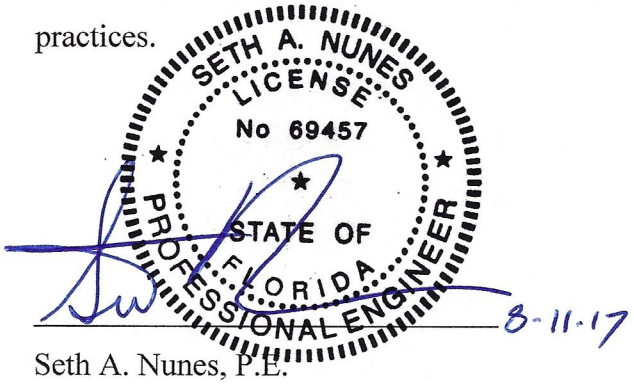
together using an industrial grad sewing machine and a polypropylene fiber. The perforated/solid leachate riser (18" diam. SDR 11) and collection (6" diam. SDR 11) pipe for the sump was welded and then No. 4 stone placed in the sump and up the riser trench. Samples of the leachate stone were sent to the GTS laboratory for conformance testing. The stone was typically non-carbonaceous and complied with the permeability requirements for this project. The gradation though was slightly coarser in the larger fraction of this stone than with ASTM's gradation envelop for No. 4 stone. This stone will still adequately perform its function as designed without an adverse impact since the permeability requirement has been met. The stone was hauled from the on-site stock pile to the sump during construction. The stone was placed on the geotextile around the piping. The geotextile was then wrapped and sewn once the stone had been brought up to the top of the designed protective cover. A layer of protective cover sand was then pushed over the sump area to protect the geotextile from UV degradation as discussed in the previous section.

The force main for Cell 5 was constructed. The existing permanent force main was extended from the flanged sealed forcemain just west of the manhole opposite the leachate holding tank around to the end of Cell 5. This permanent force main is made up of a 6-inch SDR 11 carrier pipe with a 10-inch SDR 17 containment pipe. These HDPE pipes were all welded together and then placed in their trenches where both carrier and containment pipes were leaked tested prior to the force main being connected at the manhole side. The pipe testing passed for both the carrier and the containment and the paper work is included in Appendix D.3. Subsequently the concrete structure was installed and piping was to be connected to the riser pipe.

6.0 CONSTRUCTION CERTIFICATION

CEC was retained by WMIF to provide CQA monitoring services during the construction of the Cell 5 at VLF in Apopka, Florida. Construction activities were observed and documented by qualified CQA technicians. The installation of structural fill, base grade layer, protective cover sand and aggregate materials were observed during installation and were tested as required to confirm/verify the material suitability and proper installation. The installation of the geosynthetic composite liner materials were observed, documented, and tested; as required, to confirm/verify material suitability and proper installation with construction documents. The leachate collection and transmitting pipes were installed according to the cell construction drawings and specifications and the CQA Plan. Variations to these documents were that the east slopes had to have base grades adjusted slightly to tie-in to actual Cell 1 liner grades and a layer of protective soil was placed over the exposed sump's geotextile to protect it from ultra-violate degradation. A deviation from the drawings, that was approved after their preparation, was to move the southern cell geosynthetic boundary from a run-out configuration to an anchor trench on top of the southern intercell berm.

Based on our professional opinion, and the information obtained through on-site observation of installation/construction, from laboratory test results, and from design and record drawings; the construction of the Cell 5 is considered to have been constructed in general accordance with the approved permit, construction drawings and specifications, CQA Plan, FDEP Solid Waste Rules, FDEP approved changes that are itemized above, and accepted industry engineering best practices.



8-11-17

Seth A. Nunes, P.E.
Certifying Engineer
Florida Registration No. 69457

A. SOIL CONSTRUCTION DATA

A.1 STRUCTURAL FILL CONFORMANCE TESTS

Apr-17

VISTA LANDFILL - CELL 5
SUMMARY OF SOIL DATA

2017-09

Sample ID	Sample Type	Sample Depth	Soil Classi-fication	In-Situ Moisture (%)	Atterberg Limits			Grain Size Distribution			Standard Proctor		Gs	Unit Weight		Permeability (cm/sec)	Additional Test (see notes)
					L.L.	P.L.	P.I.	% Finer No. 4 Sieve	% Finer No. 200 Sieve	% Finer .005 mm Sieve	Maximum Dry Density (lb/cu.ft)	Optimum Moisture Content (%)		Dry Density (lb/cu.ft)	Moisture Content (%)		
SF-1	Bulk	-	SM	11.1	NP	NP	NP	100.0	14.0	-	112.1	15.9	-	-	-	-	-
SF-2	Bulk	-	SP	7.9	NP	NP	NP	100.0	3.9	-	105.6	14.7	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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ABBREVIATIONS: LIQUID LIMIT (L.L.)
PLASTIC LIMIT (P.L.)
PLASTICITY INDEX (P.I.)
NON-PLASTIC (N/P)
SPECIFIC GRAVITY (Gs)
MOISTURE CONTENT (Mc)

NOTES:
T = TRIAXIAL TEST
U = UNCONFINED COMPRESSION TEST
DS = DIRECT SHEAR TEST
O = ORGANIC CONTENT
P = pH
CC = CARBONATE CONTENT

Genesis Testing Services, Inc.

MOISTURE DENSITY CURVE
ASTM D698 & D1557

MOLD NUMBER:	PM-2
MOLD WEIGHT:	2036.3

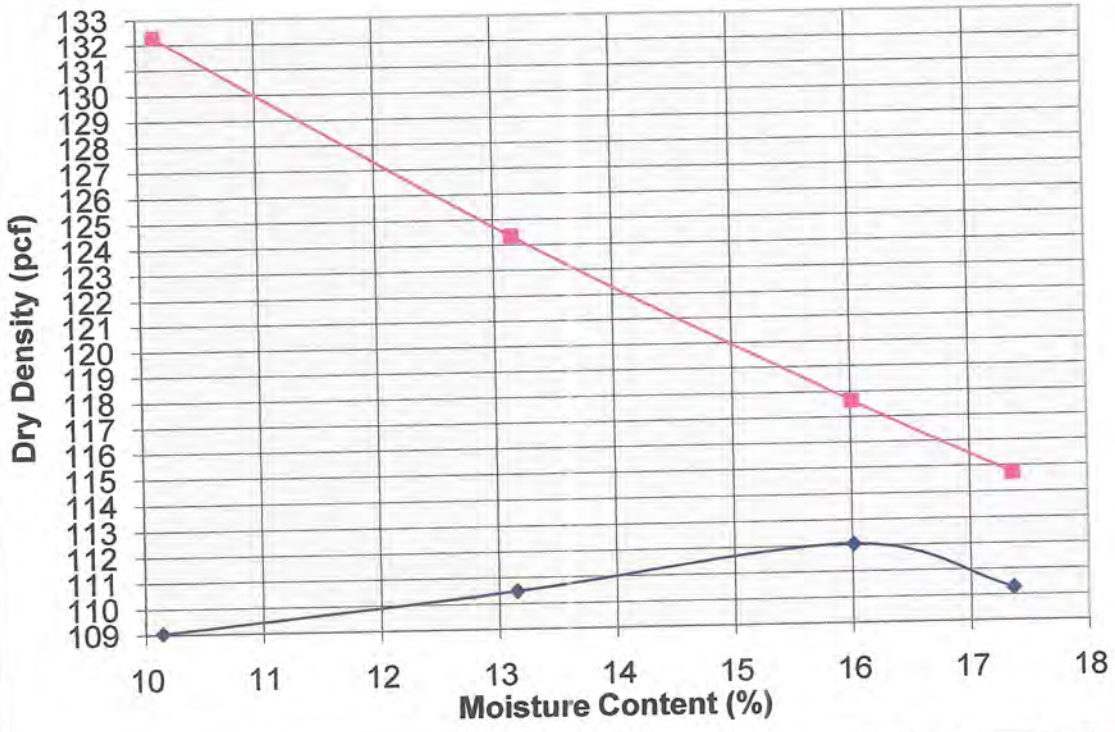
PROJECT TITLE: VISTA LANDFILL - CELL 5
PROJECT NUMBER: 2017-09
SAMPLE NUMBER: SF-1
DESCRIPTION: YELLOWISH TAN SILTY SAND

TEST TYPE:	ASTM D698
PROCEDURE:	METHOD A
VOLUME MOLD:	0.0331 cu. ft.

POINT RESULTS	1	2	3	4	5
Wet Wt. Soil & Mold (gm)	3844.90	3918.80	3994.10	3985.30	
Wt. Mold (gm)	2036.30	2036.30	2036.30	2036.30	
Wet Wt. Soil (gm)	1808.60	1882.50	1957.80	1949.00	
Wet Density (pcf)	120.10	125.00	130.00	129.42	
WATER CONTENTS					
Wet Wt. Soil + Tare (gm)	258.50	218.30	228.40	222.90	
Dry Wt. Soil + Tare (gm)	236.10	194.70	199.00	192.20	
Weight of Tare (gm)	15.30	15.30	15.40	15.40	
Weight of Water (gm)	22.40	23.60	29.40	30.70	
Wt. Dry Soil (gm)	220.80	179.40	183.60	176.80	
Moisture Content (%)	10.14	13.15	16.01	17.36	
Dry Density (pcf)	109.04	110.47	112.06	110.27	
Zero Air Void Den. (pcf) SG=2.70	132.27	124.34	117.64	114.72	

MAXIMUM DRY DENSITY (pcf): 112.1
OPTIMUM MOISTURE CONTENT (%): 15.9
Corrected Maximum Dry Density (pcf):
Corrected Optimum Moisture Content (%):

Liquid Limit:	N/P
Plastic Limit	N/P
Plasticity Index:	N/P
In-Situ Moisture:	11.1%
USCS Classification:	SM



Genesis Testing Services, Inc.

DATE: 4/4/17
REVIEW: OSA

PARTICLE SIZE ANALYSIS (ASTM D 422)

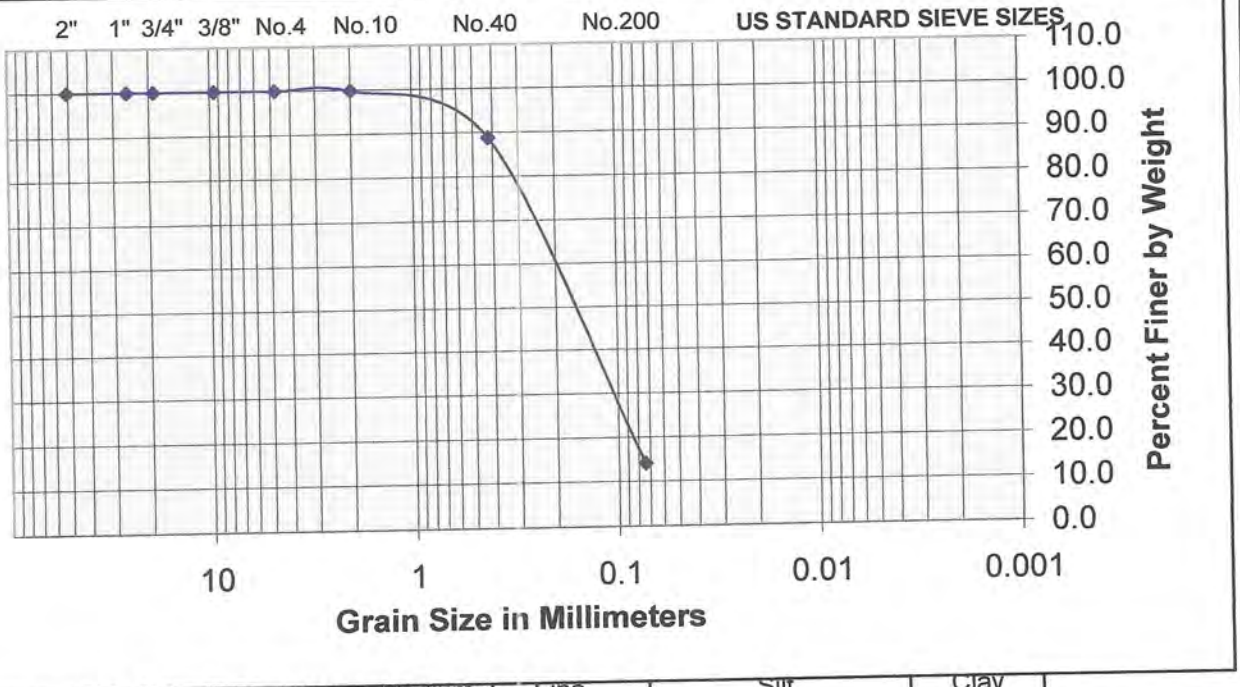
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: SF-1
PROJECT NUMBER: 2017-09	SAMPLE TYPE: BULK

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	1029.1
Dry Wt. Soil + Tare (gm)	964.0
Weight of Tare (gm)	376.1
Weight of Water (gm)	65.1
Weight of Dry Soil (gm)	587.9
Moisture Content (%)	11.1%

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	965.9
Weight of Tare (gm)	376.1
Weight of Sample (gm)	589.8

DESCRIPTION: YELLOWISH TAN SILTY SAND

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.9	0.15	0.15	99.8
No. 40	0.42	65.4	11.09	11.24	88.8
No. 200	0.074	440.8	74.74	85.98	14.0
Pan	-	82.5	13.99	99.97	-



Genesis Testing Services, Inc.

DATE: 4/4/17

REVIEW: DSA

MOISTURE DENSITY CURVE
ASTM D698 & D1557

MOLD NUMBER:	PM-2
MOLD WEIGHT:	2036.3

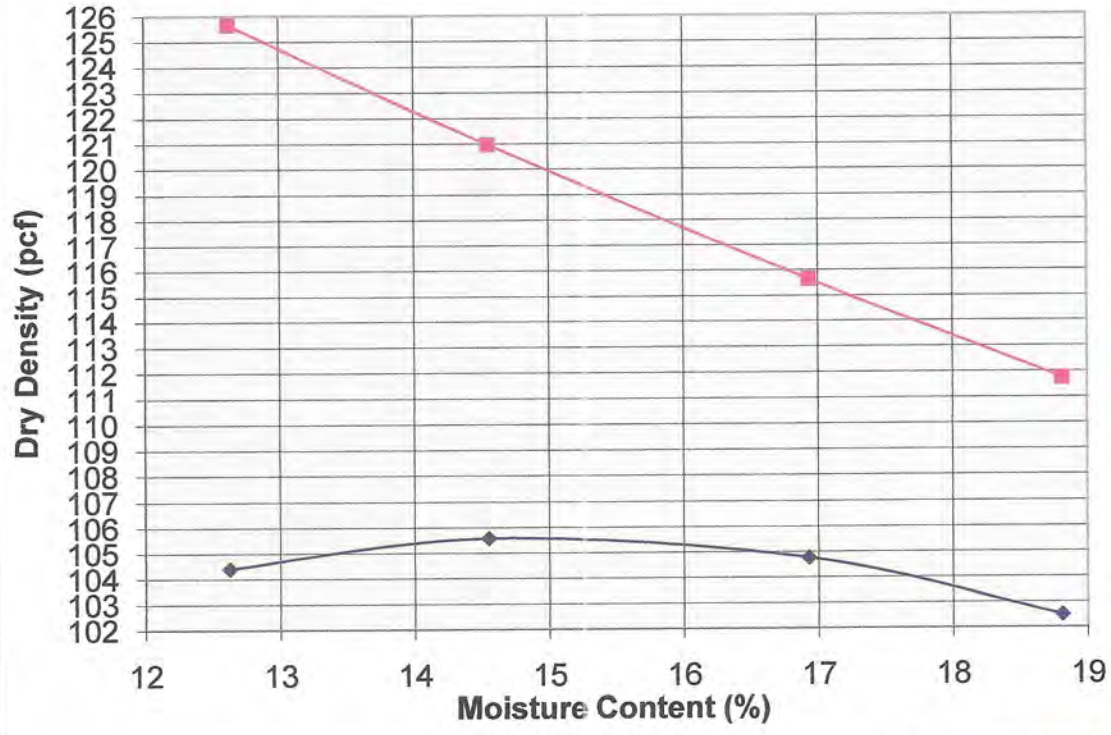
PROJECT TITLE: VISTA LANDFILL - CELL 5
PROJECT NUMBER: 2017-09
SAMPLE NUMBER: SF-2
DESCRIPTION: TAN SAND

TEST TYPE:	ASTM D698
PROCEDURE:	METHOD A
VOLUME MOLD:	0.0331 cu. ft.

POINT RESULTS	1	2	3	4	5
Wet Wt. Soil & Mold (gm)	3807.00	3857.50	3881.10	3870.30	
Wt. Mold (gm)	2036.30	2036.30	2036.30	2036.30	
Wet Wt. Soil (gm)	1770.70	1821.20	1844.80	1834.00	
Wet Density (pcf)	117.58	120.93	122.50	121.78	
WATER CONTENTS					
Wet Wt. Soil + Tare (gm)	243.70	259.20	220.60	231.50	
Dry Wt. Soil + Tare (gm)	217.20	227.20	189.70	196.00	
Weight of Tare (gm)	7.30	7.30	7.20	7.30	
Weight of Water (gm)	26.50	32.00	30.90	35.50	
Wt. Dry Soil (gm)	209.90	219.90	182.50	188.70	
Moisture Content (%)	12.63	14.55	16.93	18.81	
Dry Density (pcf)	104.40	105.57	104.76	102.50	
Zero Air Void Den. (pcf) SG=2.70	125.67	120.97	115.64	111.74	

MAXIMUM DRY DENSITY (pcf): 105.6
OPTIMUM MOISTURE CONTENT (%): 14.7
Corrected Maximum Dry Density (pcf):
Corrected Optimum Moisture Content (%):

Liquid Limit:	N/P
Plastic Limit	N/P
Plasticity Index:	N/P
In-Situ Moisture:	7.9%
USCS Classification:	SP



Genesis Testing Services, Inc.

DATE: 4/4/17
REVIEW: OSA

PARTICLE SIZE ANALYSIS (ASTM D 422)

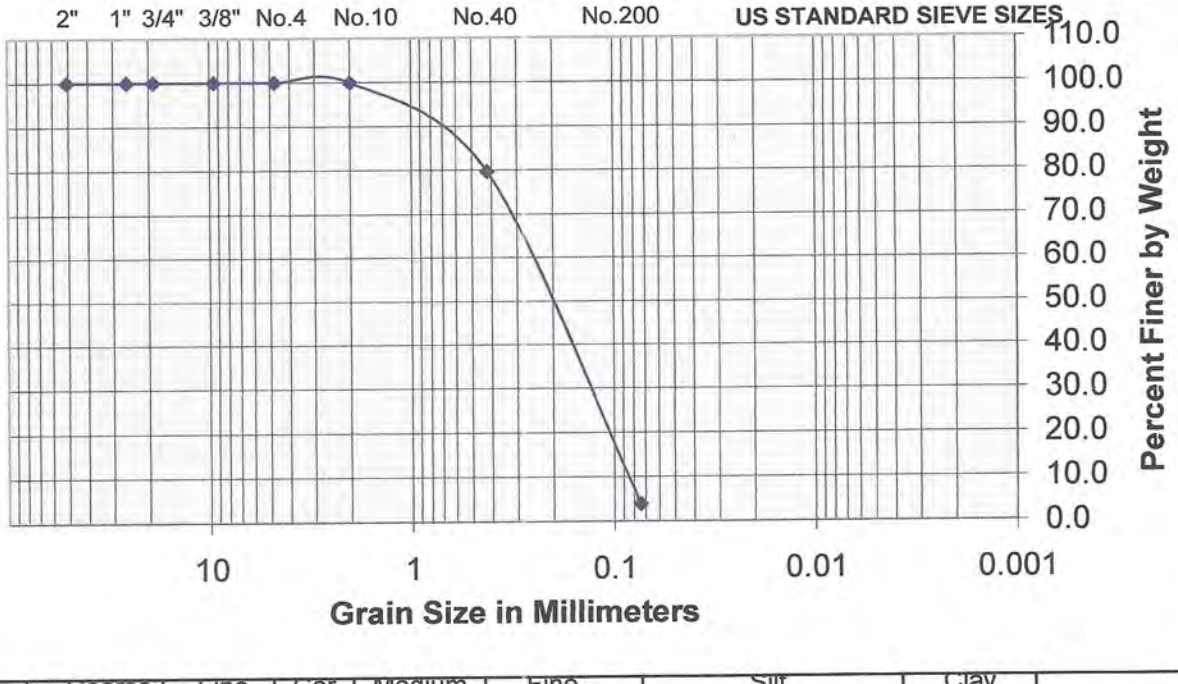
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: SF-2
PROJECT NUMBER: 2017-09	SAMPLE TYPE: BULK

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	1149.8
Dry Wt. Soil + Tare (gm)	1101.9
Weight of Tare (gm)	495.5
Weight of Water (gm)	47.9
Weight of Dry Soil (gm)	606.4
Moisture Content (%)	7.9%

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1102.5
Weight of Tare (gm)	495.5
Weight of Sample (gm)	607.0

DESCRIPTION: **TAN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.3	0.05	0.05	100.0
No. 40	0.42	123.5	20.35	20.40	79.6
No. 200	0.074	459.7	75.73	96.13	3.9
Pan	-	23.3	3.84	99.97	-



I Coarse I	Fine I	Cor. I	Medium I	Fine I	Silt I	Clay I
I GRAVEL I		SAND	I		FINES	I

Genesis Testing Services, Inc.

DATE: 4/4/17

REVIEW: DSA

A.2 STRUCTURAL FILL AND SUBBASE FIELD DENSITY TESTS

CEC

Field Density Test Report (Drive Cylinder Test)

Page 1 of 16

Date: 5-2-17
Daily Report No.: 7
Technician: T Braddock

Site: VISTA lANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Com-paction	
7-1	7-1-A	N-1, 1564, 550 E-490,350 (46)	5.29	1.38	3.91	366.85	349.85	17.0	20.5	.03338	117.1	97.2	14.7	105.6	92.0	*
7-1-A		N1, 1564. 550 (46)	5.27	1.38	3.89	366.90	353.05	13.85	16.1	.03338	116.5	100.3	14.7	105.6	95.0	
7-2		N1 1564,600 E 490,400 (47)	5.25	1.38	3.87	366.90	355.45	11.45	12.9	.03338	115.4	102.7	14.7	105.6	97.3	
7-3		N1 · 1564,650 E. 490,350 (48)	5.28	1.38	3.9	362.45	349.2	12.85	14.7	.03338	116.8	101.8	14.7	105.6	96.4	
7-4		N1 1564.550 E·490,450 (45)	5.30	1.38	3.92	366.85	358.25	8.6	9.4	.03338	117.4	107.3	15.9	112.1	95.7	
7-5		N1 1564,650 E 490 450 (44)	3.81	1.38	3.81	362.45	353.15	9.3	10.3	.03338	114.1	103.4	14.7	105.6	97.9	
7-6		N1 564,550 E 491,150 (5)	5.39	1.38	4.01	366.90	354.45	12.45	14.2	.03338	120.1	105.2	14.7	105.6	99.6	
7-7		N1,564,350 E·490,950 (6)	5.33	1.38	3.95	362.45	350.01	12.44	14.2	.03338	118.3	103.6	14.7	105.6	98.1	
7-8		N1,564,550 E-490,500 (59)	5.39	1.38	4.01	366.85	356.25	10.6	11.9	.03338	120.1	107.3	15.9	112.1	95.7	

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e\text{-}pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-3-17
Daily Report No.: 8
Technician: T. Bradford

Site: VISTA LANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Compaction
8-1		N-1564,750 E-490,350 (49)	5.26	1.38	3.58	362.45	351.85	10.8	12.1	.03338	116.2	103.7	14.7	105.6	98.2
8-2		N-1564,400 E-490,400 (50)	5.28	1.38	3.9	366.90	355.20	11.7	13.3	.03338	116.8	103.1	14.7	105.6	97.5
8-3		N-1564,875 E-490,375 (51)	5.40	1.38	4.02	366.85	357.25	9.6	10.6	.03338	120.4	108.9	15.9	112.1	97.1
8-4		N-1564,950 E-490,450 (52)	5.19	1.38	3.81	366.85	355.40	11.45	12.9	.03338	114.1	101.1	14.7	105.6	95.7
8-5		N-1564,850 E-490,450 (42)	5.23	1.38	3.85	362.45	353.75	8.7	9.5	.03338	115.3	105.3	14.7	105.6	99.7
8-6		N-1565,000 E-490,550 (53)	5.18	1.38	3.8	366.90	358.1	8.8	9.6	.03338	113.8	103.8	14.7	105.6	98.3
8-7		N-1565,000 E-490,650 (54)	5.24	1.38	3.86	366.85	357.05	9.8	10.9	.03338	115.6	104.2	14.7	105.6	98.7
8-8		N-1565,025 E-490,725 (56)	5.14	1.38	3.76	362.45	353.10	8.85	10.7	.03338	112.6	102.6	14.7	105.6	97.2
8-9		N-1565,025 E-490,825 (55)	5.24	1.38	3.86	366.90	354.75	12.5	13.8	.03338	115.6	101.6	14.7	105.6	96.2
8-10		N-1564,850 E-490,950 (36)	5.24	1.38	3.86	362.45	352.05	10.4	11.6	.03338	115.6	103.6	14.7	105.6	98.1
8-11		N-1564,540 E-491,325 (60)	5.22	1.38	3.84	366.85	355.15	11.7	13.3	.03338	115.0	101.5	14.7	105.6	96.1
8-12		N-1564,750 E-490,530 (31)	5.20	1.38	3.82	366.90	357.65	9.25	10.2	.03338	114.4	103.8	14.7	105.6	98.3
8-13		N-1564,750 E-490,650 (30)	5.46	1.38	4.08	366.85	355.45	11.4	12.9	.03338	122.2	108.2	15.9	112.1	96.5
8-14		N-1564,700 E-490,600 (23)	5.22	1.38	3.84	362.90	354.65	12.25	14.0	.03338	115.0	100.9	14.7	105.6	95.5
8-15		N-1564,650 E-490,550 (22)	5.18	1.38	3.8	362.45	352.55	9.9	11.0	.03338	113.8	102.5	14.7	105.6	97.1

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-4-17
Daily Report No.: 9
Technician: T. Bradford

Site: VISTA lANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Com-paction	
9-1		N-1564,950 E 490,900 (37)	5.17	1.38	3.79	366.85	357.9	8.95	9.8	.03338	113.5	103.4	14.7	105.6	97.9	
9-2		N-1564,850 E-490,850 (35)	5.19	1.38	3.81	366.90	357.45	9.45	10.4	.03338	114.1	103.4	14.7	105.6	97.9	
9-3		N-1564,850 E-490,750 (34)	5.26	1.38	3.88	362.45	355.1	7.35	7.9	.03338	116.2	107.7	15.9	112.1	96.1	
9-4		N 1564,750 E 490,750 (29)	5.52	1.38	4.14	366.85	356.55	10.3	11.5	.03338	124.0	111.2	15.9	112.1	99.2	
9-5	9-5-A	N-1564,650 E-490,650 (33)	5.29	1.38	3.91	366.90	351.95	14.95	17.6	.03338	117.1	99.6	14.7	105.6	94.3	*
9-5A		N-1564,850 E 490,650 (33)	5.28	1.38	3.9	362.45	352.60	9.85	10.9	.03338	116.8	105.3	14.7	105.6	99.7	
9-6		N-1564,975 E.490,825 (38)	5.25	1.38	3.87	362.45	348.95	13.5	15.6	.03338	115.9	100.3	14.7	105.6	95.0	
9-7		N-1564,950 E-490,950 (39)	5.48	1.38	4.1	366.85	354.25	12.6	14.4	.03338	122.8	107.3	15.9	112.1	95.7	
9-8		N-1564,925 E. 490,650 (40)	5.19	1.38	3.81	366.90	356.15	10.75	12.0	.03338	114.1	101.9	14.7	105.6	96.5	
9-9		N-1564,925 E-490,550 (41)	5.21	1.38	3.83	362.45	353.95	8.5	9.3	.03338	114.7	104.9	14.7	105.6	99.3	
9-10		N-1564,750 E-490,450 (43)	5.36	1.38	3.98	362.45	346.80	15.65	18.6	.03338	119.2	100.5	14.7	105.6	95.2	
9-11		N-1564,850 E 490,550 (32)	5.38	1.38	4.0	366.85	353.90	12.95	14.9	.03338	119.8	104.3	14.7	105.6	98.8	
9-12		N-1564,550 E 490,550 (8)	5.25	1.38	3.87	366.90	357.40	9.5	10.5	.03338	115.9	104.9	14.7	105.6	99.3	
9-13		N-1564,500 E 490,600 (14)	5.24	1.38	3.86	366.90	355.85	11.05	12.4	.03338	115.6	102.8	14.7	105.6	97.3	
9-14		N-1564,500 E 490,500 (3)	5.38	1.38	4.0	362.45	350.20	12.25	14.0	.03338	119.8	105.1	14.7	105.6	99.5	

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-4-17
Daily Report No.: 9
Technician: T. Bradford

Site: VISTA lANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass			Moisture				Density			k	l	m
			a	b	c	d	e	f	g	h	i	j			
			Wet Wgt. w/Cyl. (lb)	Wgt. of Cylinder (lb)	Wet Wgt. of Soil (lb)	Wet Wgt. w/Pan (gm)	Dry Wgt. w/Pan (gm)	Water Content (gm)	Moisture Content (%)	Vol. of Cyl. (cu. ft.)	Wet Density of Soil (lb/cu. ft.)	Dry Density of Soil (lb/cu.ft.)	Opt. Moisture Req. (%)	Proctor Density (Pcf)	% Com-paction
9.15		N-1864,500 E-491,000 (2)	5.38	1.38	4.0	316.85	355.80	11.05	12.4	.03338	119.8	106.6	15.9	112.1	95.1

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-6-17
Daily Report No.: 11
Technician: T. Bradford

Site: VISTA lANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Com-paction
11-1		N- 1564,750 E- 490,850 (28)	5.32	1.38	3.94	366.85	352.2	14.65	17.2	.03338	118.0	100.7	14.7	105.6	95.4
11-2		N- 1564,750 E- 490,950 (27)	5.43	1.38	4.05	366.90	356.1	10.8	[illegible]	.03338	121.3	108.2	15.9	112.1	96.5
11-3		N- 1564,750 E- 491,050 (26)	5.40	1.38	4.02	362.45	352.35	10.1	11.2	.03338	120.4	108.3	15.9	112.1	96.6
11-4		N- 1564,650 E- 491,150 (16)	5.42	1.38	4.04	362.45	350.05	12.4	14.2	.03338	121.0	105.6	14.7	105.6	100.0
11-5	11-5-A	N- 1564,600 E- 491,100 (14)	5.48	1.38	4.1	366.85	353.4	13.45	15.5	.03338	122.8	106.3	15.9	112.1	94.8 *
11-5A		N- 1564,600 E- 491,100 (Mud)	5.44	1.38	4.06	366.90	354.75	12.15	13.8	.03338	121.6	106.9	15.9	112.1	95.4
11-6		N- 1564,600 E- 491,000 (13)	5.44	1.38	4.06	366.90	355.65	13.25	15.3	.03338	121.6	105.5	14.7	105.6	99.9
11-7		N- 1564,600 E- 490,900 (12)	5.18	1.38	3.8	362.45	352.50	9.95	11.0	.03338	113.8	102.5	14.7	105.6	97.1
11-8		N- 1564,650 E- 490,550 (22)	5.27	1.38	3.89	366.90	355.85	11.05	12.4	.03338	116.5	103.6	14.7	105.6	98.1
11-9		N- 1564,600 E- 490,600 (9)	5.26	1.38	3.88	366.85	355.75	11.1	12.5	.03338	116.2	103.3	14.7	105.6	97.8
11-10		N- 1564,550 E- 490,650 (58)	5.33	1.38	3.95	366.90	357.25	9.65	10.7	.03338	118.3	106.9	15.9	112.1	95.4
11-11		N- 1564,600 E- 490,700 (10)	5.39	1.38	4.01	362.45	348.95	13.5	15.6	.03338	120.1	103.9	14.7	105.6	98.4
11-12		N- 1564,650 E- 490,750 (21)	5.27	1.38	3.89	366.85	356.15	10.7	12.0	.03338	116.5	104.0	14.7	105.6	98.5
11-13		N- 1564,550 E- 490,750 (7)	5.36	1.38	3.98	366.90	354.15	12.75	14.6	.03338	119.2	104.0	14.7	105.6	98.5
11-14		N- 1564,650 E- 491,050 (17)	5.41	1.38	4.03	366.85	354.20	12.65	14.5	.03338	120.7	105.4	14.7	105.6	99.8

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-6-17
Daily Report No.: 11
Technician: T. Bradley

Site: VISTA lANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass			Moisture				Density			k	l	m
			a	b	c	d	e	f	g	h	i	j			
			Wet Wgt. w/Cyl. (lb)	Wgt. of Cylinder (lb)	Wet Wgt. of Soil (lb)	Wet Wgt. w/Pan (gm)	Dry Wgt. w/Pan (gm)	Water Content (gm)	Moisture Content (%)	Vol. of Cyl. (cu. ft.)	Wet Density of Soil (lb/cu. ft.)	Dry Density of Soil (lb/cu.ft.)	Opt. Moisture Req. (%)	Proctor Density (Pcf)	% Compaction
11-15		N-1564,650 E-490,950 (18)	5.47	1.38	4.09	362.45	349.85	12.6	14.4	.03338	122.5	107.1	15.9	112.1	95.5
11-16		N-1564,650 E-490,850 (19)	5.37	1.38	3.99	366.85	355.45	11.4	12.9	.03338	119.5	105.8	14.7	105.6	100.2
11-17		N-1564,650 E-490,750 (20)	5.44	1.38	4.06	362.45	351.03	11.42	12.9	.03338	121.6	107.7	15.9	112.1	96.1
11-18		N-1564,600 E-490,800 (11)	5.40	1.38	4.02	366.90	355.65	11.25	12.7	.03338	120.4	106.8	15.9	112.1	95.3

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-8-17
Daily Report No.: 12
Technician: T. Bradford

Site: VISTA LANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Com-paction
12-1		N-1564,800 E-491,000 (57)	5.41	1.38	4.03	362.45	347.6	14.85	17.4	.03338	120.7	102.6	14.7	105.6	97.2
12-2		N 1564,700 E 491,000 (25)	5.19	1.38	3.81	366.90	358.25	8.65	9.5	.03338	114.1	104.2	14.7	105.6	98.7
12-3		N-1564,700 E 490,800 (24)	5.29	1.38	3.91	366.85	354.7	12.15	13.8	.03338	117.1	1029	14.7	105.6	97.4
12-4		N-1564,950 E-490,950 (37)	5.31	1.38	3.93	366.85	356.40	10.45	11.7	.03338	117.7	105.4	14.7	105.6	99.8
12-5		N-1564,850 E 490,950 (36)	5.26	1.38	3.88	362.45	353.03	13.42	14.8	.03338	116.2	101.2	14.7	105.6	958
12-6		N-1564,850 E-490,850 (35)	5.18	1.38	3.8	366.90	357.35	9.55	10.6	.03338	113.8	1029	14.7	105.6	97.4
12-7		N-1564,850 E-490,750 (34)	5.22	1.38	3.84	362.45	351.95	10.5	11.7	.03338	115.0	103.J	14.7	105.6	975
12-8		N-1564,850 E-490,650 (33)	5.28	1.38	3.9	366.90	356.65	10.25	11.4	.03338	116.8	104.8	14.7	105.6	99.8
12-9		N-1564,850 E 490,550 (32)	5.43	1.38	4.05	366.85	354.65	12.2	13.4	.03338	121.3	106.5	15.9	112.1	95.0
12-10		N-1564,650 E-490,550 (22)	5.20	1.38	3.82	366.85	357.65	9.2	10.1	.03338	114.4	103.9	14.7	105.6	98.4
12-11		N-1564,750 E-490,550 (31)	5.26	1.38	3.88	366.90	357.03	9.87	11.0	.03338	116.2	104.7	14.7	105.6	99.1
12-12		N 1564,750 E 490,650 (30)	5.28	1.38	3.9	362.45	350.95	11.5	13.0	.03338	116.8	103.4	14.7	105.6	97.9
12-13		N-1564,950 E-490,750 (39)	5.27	1.38	3.89	366.90	355.15	11.75	13.3	.03338	116.5	102.8	14.7	105.6	97.1
12-14		N-1564,925 E-490,650 (40)	5.23	1.38	3.85	366.85	355.25	11.6	13.1	.03338	115.3	101.9	14.7	105.6	96.5
12-15		N-1564,750 E-490,450 (43)	5.20	1.38	3.82	362.45	352.95	10.4	11.6	.03338	114.4	1025	14.7	105.6	97.1

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-9-17
Daily Report No.: 13
Technician: T. Bradford

Site: VISTA LANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Com-paction
13-1		N-1564, 700 E-491, 000 (25)	5.46	1.38	4.08	362.45	348.9	13.55	15.7	.03338	122.2	105.6	14.7	105.6	100.0
13-2		N-1564,750 E-490,950 (27)	5.38	1.38	4.0	366.90	351.1	15.8	18.8	.03338	119.8	100.8	14.7	105.6	95.5
13-3		N-1564,750 E-490,850 (28)	5.36	1.38	3.98	366.85	355.65	11.2	12.6	.03338	119.2	105.9	14.7	105.6	100.3
13-4		N-1564,750 E-490,750 (29)	5.38	1.38	4.0	362.45	350.06	12.39	14.1	.03338	119.8	105.0	14.7	105.6	99.4
13-5		N-1564,800 E-491,000 (57)	5.51	1.38	4.13	366.90	354.75	12.15	13.8	.03338	123.7	108.7	15.9	112.1	97.0
13-6		N-1564,540 E-491,325 (60)	5.44	1.38	4.06	366.85	355.95	10.9	12.2	.03338	121.6	108.4	15.9	112.1	96.7
13-7		N-1564,550 E-490,550 (8)	5.46	1.38	4.08	366.85	355.95	10.9	12.2	.03338	122.2	108.9	15.9	112.1	97.1
13-8		N-1564,500 E-490,600 (4)	5.37	1.38	3.99	366.90	355.20	11.7	13.3	.03338	119.5	105.5	14.7	105.6	99.9
13-9		N-1564,550 E-490,650 (58)	5.39	1.38	4.01	362.45	351.80	10.65	11.9	.03338	120.1	107.3	15.9	112.1	95.7
13-10		N-1564,600 E-490,600 (9)	5.52	1.38	4.14	362.45	352.02	10.43	11.6	.03338	124.0	111.1	15.9	112.1	99.1
13-11		N-1564,650 E-490,650 (21)	5.29	1.38	3.91	366.85	355.70	11.15	12.5	.03338	117.1	104.1	14.7	105.6	98.6
13-12		N-1564,700 E-490,600 (23)	5.33	1.38	3.95	366.90	355.45	11.45	12.9	.03338	118.3	104.8	14.7	105.6	99.2
13-13		N-1564,650 E-490,750 (20)	5.24	1.38	3.86	366.85	356.15	10.7	12.0	.03338	115.6	103.2	14.7	105.6	97.7
13-14		N-1564,600 E-490,700 (10)	5.28	1.38	3.9	366.90	354.95	11.95	13.6	.03338	116.8	102.8	14.7	105.6	97.3
13-15		N-1564,550 E-490,750 (7)	5.42	1.38	4.04	362.45	351.7	10.75	12.0	.03338	121.0	108.0	15.9	112.1	96.3

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Page 9 of 16

Date: 5-10-17
Daily Report No.: 14
Technician: T. Bradford

Site: VISTA LANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Compaction
14-1		N-1564,600 E-490,800 (11)	5.29	1.38	3.91	362.45	352.75	9.7	10.7	.03338	117.1	105.8	14.7	105.6	100.2
14-2		N-1564,500 E-490,800 (3)	5.28	1.38	3.9	366.85	355.15	11.7	13.3	.03338	116.8	103.1	14.7	105.6	97.6
14-3		N-1564,600 E-490,900 (12)	5.17	1.38	3.79	366.90	357.04	9.86	10.9	.03338	113.5	102.3	14.7	105.6	96.9
14-4		N-1564,500 E-490,600 (2)	5.28	1.38	3.9	366.85	355.9	10.95	12.3	.03338	116.8	104.0	14.7	105.6	98.5
14-5		N-1564,650 E-490,850 (19)	5.30	1.38	3.92	366.90	354.75	12.15	13.8	.03338	117.4	103.2	14.7	105.6	97.7
14-6		N-1564,650 E-490,950 (18)	5.55	1.38	4.17	362.45	349.55	12.9	14.8	.03338	124.9	108.8	15.9	112.1	96.3
14-7		N-1564,550 E-490,350 (46)	5.28	1.38	3.9	366.90	356.35	10.55	11.8	.03338	116.8	104.5	14.7	105.6	99.0
14-8		N-1564,550 E-490,450 (45)	5.19	1.38	3.81	366.85	355.20	11.65	13.2	.03338	114.1	100.8	14.7	105.6	95.5
14-9		N-1564,600 E-490,400 (47)	5.26	1.38	3.88	362.45	353.45	9.0	9.9	.03338	116.2	105.3	14.7	105.6	100.1
14-10		N-1564,650 E-490,350 (48)	5.19	1.38	3.81	362.45	353.15	9.3	10.3	.03338	114.1	103.4	14.7	105.6	97.9
14-11		N-1564,650 E-490,450 (44)	5.29	1.38	3.91	366.85	356.25	10.6	11.9	.03338	117.1	104.6	14.7	105.6	98.5
14-12		N-1564,750 E-490,350 (49)	5.37	1.38	3.99	366.90	355.35	11.55	13.1	.03338	119.5	105.7	14.7	105.6	100.1
14-13		N-1564,540 E-491,325 (60)	5.17	1.38	3.79	362.45	353.35	9.1	10.0	.03338	113.5	103.2	14.7	105.6	97.7
14-14		N-1564,555 E-491,250 (61)	5.26	1.38	3.88	366.90	356.60	10.3	11.5	.03338	116.2	104.2	14.7	105.6	98.7
14-15		N-1564,525 E-491,265 (62)	5.29	1.38	3.91	366.85	355.75	11.1	12.5	.03338	117.1	104.1	14.7	105.6	98.6

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-10-17
Daily Report No.: 14
Technician: T. Bradford

Site: VISTA LANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass			Moisture				Density			k	l	m
			a	b	c	d	e	f	g	h	i	j			
			Wet Wgt. w/Cyl. (lb)	Wgt. of Cylinder (lb)	Wet Wgt. of Soil (lb)	Wet Wgt. w/Pan (gm)	Dry Wgt. w/Pan (gm)	Water Content (gm)	Moisture Content (%)	Vol. of Cyl. (cu. ft.)	Wet Density of Soil (lb/cu. ft.)	Dry Density of Soil (lb/cu.ft.)	Opt. Moisture Req. (%)	Proctor Density (Pcf)	% Compaction
14-16		N-1564,700 E-490,800 (24)	5.22	1.38	3.84	362.45	352.85	9.6	10.6	.03338	115.0	104.0	14.7	105.6	98.5
14-17		N-1564,600 E-491,000 (13)	5.25	1.38	3.87	366.90	355.5	11.4	12.9	.03338	115.9	102.7	14.7	105.6	97.3
14-18		N-1564,975 E-490,825 (38)	5.22	1.38	3.84	366.85	357.20	9.65	10.7	.03338	115.0	103.9	14.7	105.6	98.4

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3 = ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Page 11 of 16

Date: 5-11-17

Daily Report No.: 15

Technician: T. Bradford

Site: VISTA lANDFILL

Project: Cell-5

Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass			Moisture				Density			k	l	m
			a Wet Wgt. w/Cyl. (lb)	b Wgt. of Cylinder (lb)	c Wet Wgt. of Soil (lb)	d Wet Wgt. w/Pan (gm)	e Dry Wgt. w/Pan (gm)	f Water Content (gm)	g Moisture Content (%)	h Vol. of Cyl. (cu. ft.)	i Wet Density of Soil (lb/cu. ft.)	j Dry Density of Soil (lb/cu.ft.)	Opt. Moisture Req. (%)	Proctor Density (Pcf)	% Com-paction
15-1		N-1564,550 E-491,150 (5)	5.18	1.38	3.81	366.90	357.85	9.05	10.0	.03338	114.1	103.7	14.7	105.6	98.2
15-2		N-1564,500 E-491,200 (1)	5.14	1.38	3.76	366.85	358.02	8.83	9.7	.03338	112.6	102.6	14.7	105.6	97.2
15-3		N-1564,600 E-491,200 (15)	5.59	1.38	4.21	362.45	349.75	12.7	14.5	.03338	126.1	110.1	15.9	112.1	98.2
15-4		N-1564,750 E-491,050 (26)	5.40	1.38	4.02	362.45	352.60	9.85	10.9	.03338	120.4	108.6	15.9	112.1	96.9
15-5		N-1564,650 E-491,050 (17)	5.33	1.38	3.95	366.90	354.95	11.95	13.6	.03338	118.3	104.1	14.7	105.6	98.6
15-6		N-1564,650 E-491,150 (16)	5.21	1.38	3.83	366.85	355.75	11.1	12.5	.03338	114.7	102.0	14.7	105.6	96.6
15-7		N-1564,875 E-490,375 (51)	5.30	1.38	3.92	366.85	357.25	9.6	10.6	.03338	117.4	106.1	14.7	105.6	100.5
15-8		N-1564,800 E-490,400 (50)	5.25	1.38	3.87	366.90	356.75	10.15	11.3	.03338	115.9	104.1	14.7	105.6	98.6
15-9		N-1564,850 E-490,450 (42)	5.34	1.38	3.96	362.45	353.65	8.8	9.6	.03338	118.6	108.2	15.9	112.1	96.5
15-10		N-1564,950 E-490,450 (52)	5.38	1.38	4.0	366.85	355.40	11.45	12.9	.03338	119.8	106.1	14.7	105.6	100.5
15-11		N-1565,000 E-490,550 (53)	5.17	1.38	3.79	366.90	357.20	9.7	10.7	.03338	113.5	102.5	14.7	105.6	97.1
15-12		N-1564,925 E-490,550 (41)	5.22	1.38	3.84	362.45	351.10	11.45	12.9	.03338	115.0	101.9	14.7	105.6	96.5
15-13		N-1564,540 E-491,325 (60)	5.30	1.38	3.92	366.85	354.40	12.45	14.2	.03338	117.4	102.8	14.7	105.6	97.3
15-14		N-1564,555 E-491,250 (61)	5.22	1.38	3.84	362.45	350.65	11.8	13.4	.03338	115.0	101.4	14.7	105.6	96.0
15-15		N-1564,525 E-491,265 (62)	5.24	1.38	3.86	366.90	354.80	12.1	13.8	.03338	115.6	101.6	14.7	105.6	96.2

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-11-17
Daily Report No.: 15
Technician: T. Bradford

Site: VISTA lANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Com-paction
15-16		N-1564,500 E-491,200 (1)	5.49	1.38	4.11	362.45	351.90	10.55	11.8	.03338	123.1	110.1	15.9	112.1	98.2
15-17		N-1564,600 E-491,200 (15)	5.32	1.38	3.94	366.80	354.30	12.6	14.4	.03338	118.0	103.1	14.7	105.6	97.6
15-18		N-1564,600 E-491,100 (14)	5.35	1.38	3.97	366.85	352.65	14.2	16.6	.03338	118.9	102.0	14.7	105.6	96.6

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 5-15-17
Daily Report No.: 18
Technician: T. Bradford

Site: VISTA lANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass			Moisture				Density			k	l	m
			a	b	c	d	e	f	g	h	i	j			
			Wet Wgt. w/Cyl. (lb)	Wgt. of Cylinder (lb)	Wet Wgt. of Soil (lb)	Wet Wgt. w/Pan (gm)	Dry Wgt. w/Pan (gm)	Water Content (gm)	Moisture Content (%)	Vol. of Cyl. (cu. ft.)	Wet Density of Soil (lb/cu. ft.)	Dry Density of Soil (lb/cu.ft.)	Opt. Moisture Req. (%)	Proctor Density (Pcf)	% Compaction
18-1		N-1565,030 E-490,650 (54)	5.39	1.38	4.01	362.45	349.25	13.2	15.2	.03338	120.1	104.3	14.7	105.2	98.8
18-2		N-1565,021 E-490,725 (56)	5.26	1.38	3.88	362.90	356.65	10.25	11.4	.03338	116.2	104.3	14.7	105.2	98.8
18-3		N-1565,225 E 490,825 (55)	5.31	1.38	3.93	366.85	354.6	12.25	14.0	.03338	117.7	103.2	14.7	105.2	97.7

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 6-1-17
Daily Report No.: 32
Technician: T. Bradford

Site: VISTA LANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Compaction
32-1		N-1564,505 E-491,050 (AT 3)	5.09	1.38	3.71	366.85	357.25	9.6	10.6	.03338	111.1	100.5	14.7	105.6	95.2
32-2		N-1564,505 E-491,150 (AT 2)	5.20	1.38	3.82	366.90	354.65	12.25	14.0	.03338	114.4	100.4	14.7	105.6	95.1
32-3		N-1564,505 E-491,250 (AT 1)	5.30	1.38	3.92	362.45	351.65	10.8	12.1	.03338	117.4	104.7	14.7	105.6	99.1
32-4		N-1564,500 E-490,500 (AT 4)	5.18	1.38	3.8	362.45	352.15	10.3	11.5	.03338	113.8	102.1	14.7	105.6	96.7
32-5		N-1564,935 E-490,400 (AT 5)	5.19	1.38	3.81	366.90	359.40	9.5	10.5	.03338	114.1	103.3	14.7	105.6	97.8
32-6		N-1564,505 E-490,750 (AT 6)	5.18	1.38	3.8	366.85	355.95	10.9	12.2	.03338	113.8	101.4	14.7	105.6	96.0
32-7		N-1564,505 E-490,650 (AT 7)	5.26	1.38	3.88	366.90	354.75	12.15	13.8	.03338	116.2	102.1	14.7	105.6	96.7
32-8		N-1564,505 E-490,550 (AT 8)	5.17	1.38	3.79	362.45	351.65	10.8	12.1	.03338	113.5	101.2	14.7	105.6	95.8
32-9		N-1564,505 E-490,450 (AT 9)	5.34	1.38	3.96	366.85	354.30	12.55	14.4	.03338	118.6	103.7	14.7	105.6	98.2
32-10		N-1564,505 E-490,350 (AT 10)	5.22	1.38	3.84	362.45	350.70	11.75	13.3	.03338	115.0	101.5	14.7	105.6	96.1
32-11		N-1564,550 E-490,335 (AT 11)	5.39	1.38	4.01	366.85	351.25	10.6	11.9	.03338	120.1	107.3	15.9	112.1	95.7
32-12		N-1564,650 E-490,340 (AT 12)	5.33	1.38	3.95	366.90	356.05	10.85	12.2	.03338	118.3	105.4	14.7	105.6	99.8

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Date: 6-2-17
Daily Report No.: 33
Technician: T. Bradford

Site: VISTA LANDFILL
Project: Cell-5
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Compaction
33-1		N-1565,040 E-490,575 (AT 17)	5.21	1.38	3.83	366.85	355.90	10.95	12.3	.03338	114.7	102.1	14.7	105.6	96.7
33-2		N-1565,000 E-490,475 (AT 16)	5.19	1.38	3.81	362.45	351.15	11.3	12.7	.03338	114.1	101.2	14.7	105.6	95.8
33-3		N-1564,940 E-490,400 (AT 15)	5.21	1.38	3.83	366.90	355.35	11.55	13.1	.03338	114.7	101.4	14.7	105.6	96.0
33-4		N-1564,850 E-490,355 (AT 14)	5.30	1.38	3.92	366.95	354.95	11.9	13.5	.03338	117.4	103.4	14.7	105.6	97.9
33-5		N-1564,750 E-490,350 (AT 13)	5.21	1.38	3.83	366.90	355.40	11.5	13.0	.03338	114.7	101.5	14.7	105.6	96.1
33-6		N-1565,035 E-490,675 (AT 18)	5.20	1.38	3.82	362.45	352.50	9.9	11.2	.03338	114.4	103.1	14.7	105.6	97.6
33-7		N-1565,040 E-490,775 (AT 19)	5.30	1.38	3.92	366.90	355.65	11.25	12.7	.03338	117.4	104.2	14.7	105.6	98.7

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.

CEC

Field Density Test Report (Drive Cylinder Test)

Page 16 of 18

Date: 7-13-17

Site: VISTA LANDFILL

Daily Report No.: 62

Project: Cell-5

Technician: T. Bradford

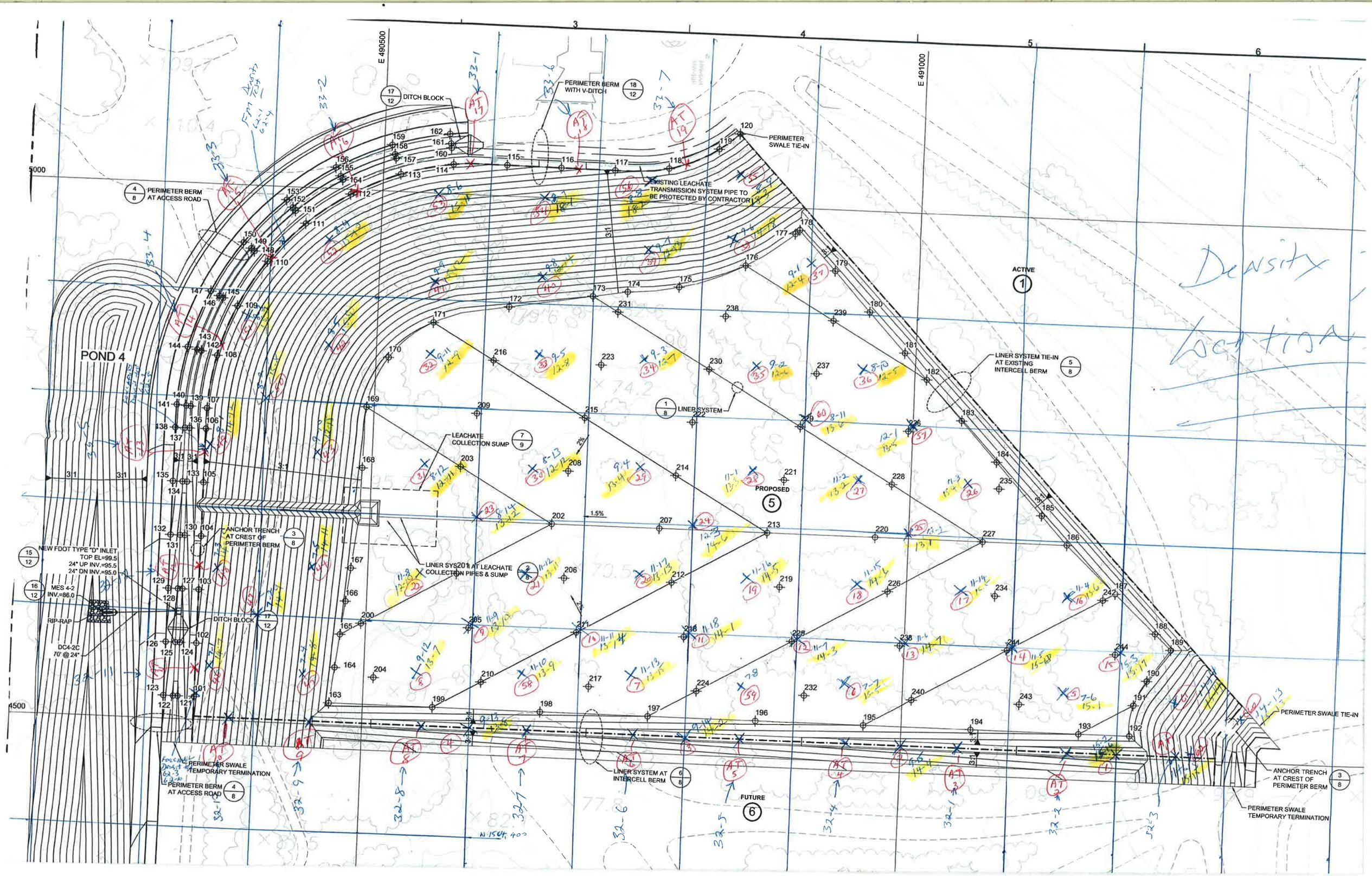
Project No.: 101.07.41

Test No.	Retest Ref. No.	Location/Description	Mass a Wet Wgt. w/Cyl. (lb)	Mass b Wgt. of Cylinder (lb)	Mass c Wet Wgt. of Soil (lb)	Moisture d Wet Wgt. w/Pan (gm)	Moisture e Dry Wgt. w/Pan (gm)	Moisture f Water Content (gm)	Moisture g Moisture Content (%)	Density h Vol. of Cyl. (cu. ft.)	Density i Wet Density of Soil (lb/cu. ft.)	Density j Dry Density of Soil (lb/cu.ft.)	k Opt. Moisture Req. (%)	l Proctor Density (Pcf)	m % Compaction
62-1		N-1564,950 E-490,420 Pipe	5.53	1.38	4.15	366.90	354.4	12.5	14.3	.03338	124.3	108.7	15.9	112.1	97.0
62-2		N-1564,750 E-490,350 Pipe	5.30	1.38	3.92	362.45	352.5	9.95	11.0	.03338	117.4	105.8	14.7	105.6	100.2
62-3		N-1564,525 E-490,330 Pipe	5.41	1.38	4.03	366.85	356.35	10.5	11.7	.03338	120.7	108.1	15.9	112.1	96.4
62-4		N-1564,950 E-490,420 Pipe	5.27	1.38	3.89	362.45	350.25	12.2	13.9	.03338	116.5	102.3	14.7	105.2	97.7
62-5		N-1564,750 E-490,350 Pipe	5.38	1.38	4.0	366.85	355.70	11.15	12.5	.03338	119.8	106.5	15.9	112.1	95.0
62-6		N-1564,525 E-490,330 Pipe	5.42	1.38	4.04	366.90	355.2	11.7	13.9	.03338	121.0	106.8	15.9	112.1	95.3

h_1= ___ cu.ft. h_2= ___ cu.ft. h_3= ___ cu.ft.

pan_1 = ___ gm pan_2 = ___ gm pan_3= ___ gm $c = a-b$ $f = d-e$ $g = f/(e-pan)$ $i = c/h$ $j = i/(1 + g/100)$ $m = j/l$

* Project Requirements: _____ Min. % Compaction _____ Min. % Moisture Req.



POND 4
PERIMETER BERM AT ACCESS ROAD
DITCH BLOCK
PERIMETER BERM WITH V-DITCH
PERIMETER SWALE TIE-IN
EXISTING LEACHATE TRANSMISSION SYSTEM PIPE TO BE PROTECTED BY CONTRACTOR
ACTIVE
LINER SYSTEM TIE-IN AT EXISTING INTERCELL BERM
LINER SYSTEM
LEACHATE COLLECTION SUMP
PROPOSED
ANCHOR TRENCH AT CREST OF PERIMETER BERM
NEW FDOT TYPE "D" INLET
TOP EL=99.5
24" UP INV.=95.5
24" DN INV.=95.0
MES 4-2
INV.=86.0
RIP-RAP
DC4-2C
70' @ 24"
LINER SYS201 AT LEACHATE COLLECTION PIPES & SUMP
PERIMETER SWALE TEMPORARY TERMINATION
PERIMETER BERM AT ACCESS ROAD
LINER SYSTEM AT INTERCELL BERM
FUTURE
PERIMETER SWALE TIE-IN
ANCHOR TRENCH AT CREST OF PERIMETER BERM
PERIMETER SWALE TEMPORARY TERMINATION
E 490500
E 491000
5000
4500
1.5%
Density
Location

A.3 PROTECTIVE COVER CONFORMANCE TESTS

VISTA LANDFILL - CELL 5
SUMMARY OF SOIL DATA

Sample ID	Sample Type	Sample Depth	Soil Classi-fication	In-Situ Moisture (%)	Atterberg Limits			Grain Size Distribution			Standard Proctor		Gs	Unit Weight		Permeability (cm/sec)	Carbonate Content (%)
					L.L.	P.L.	P.I.	% Finer No. 4 Sieve	% Finer No. 200 Sieve	% Finer .005 mm Sieve	Maximum Dry Density (lb/cu.ft)	Optimum Moisture Content (%)		Dry Density (lb/cu.ft)	Moisture Content (%)		
PC-1	Bag	-	SP-SM	-	-	-	-	99.5	5.7	-	-	-	-	90.7	2.5	2.97E-03	1.3
PC-2	Bag	-	SP	-	-	-	-	100.0	2.4	-	-	-	-	87.9	1.9	1.34E-02	-
PC-3	Bag	-	SP	-	-	-	-	100.0	1.9	-	-	-	-	91.7	1.4	2.00E-02	1.0
PC-4	Bag	-	SP	-	-	-	-	100.0	1.4	-	-	-	-	90.9	0.9	2.29E-02	1.1
PC-5	Bag	-	SP	-	-	-	-	100.0	1.7	-	-	-	-	91.8	0.9	1.66E-02	0.4
PC-6	Bag	-	SP	-	-	-	-	100.0	2.5	-	-	-	-	90.6	1.6	1.30E-02	-
PC-7	Bag	-	SP	-	-	-	-	100.0	1.9	-	-	-	-	93.7	1.6	1.10E-02	0.7
PC-8	Bag	-	SP	-	-	-	-	100.0	0.6	-	-	-	-	91.8	2.0	1.21E-02	-
PC-9	Bag	-	SP	-	-	-	-	99.9	1.3	-	-	-	-	93.5	0.7	1.25E-02	0.9
PC-10	Bag	-	SP	-	-	-	-	100.0	1.0	-	-	-	-	92.1	0.8	8.02E-03	-
PC-11	Bag	-	SP-SM	-	-	-	-	100.0	5.1	-	-	-	-	87.9	2.5	1.52E-02	2.2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS: LIQUID LIMIT (L.L.)
PLASTIC LIMIT (P.L.)
PLASTICITY INDEX (P.I.)
NON-PLASTIC (N/P)
SPECIFIC GRAVITY (Gs)
MOISTURE CONTENT (Mc)

NOTES: T = TRIAXIAL TEST
U = UNCONFINED COMPRESSION TEST
DS = DIRECT SHEAR TEST
O = ORGANIC CONTENT
P = pH
CC = CARBONATE CONTENT

PARTICLE SIZE ANALYSIS (ASTM D 422)

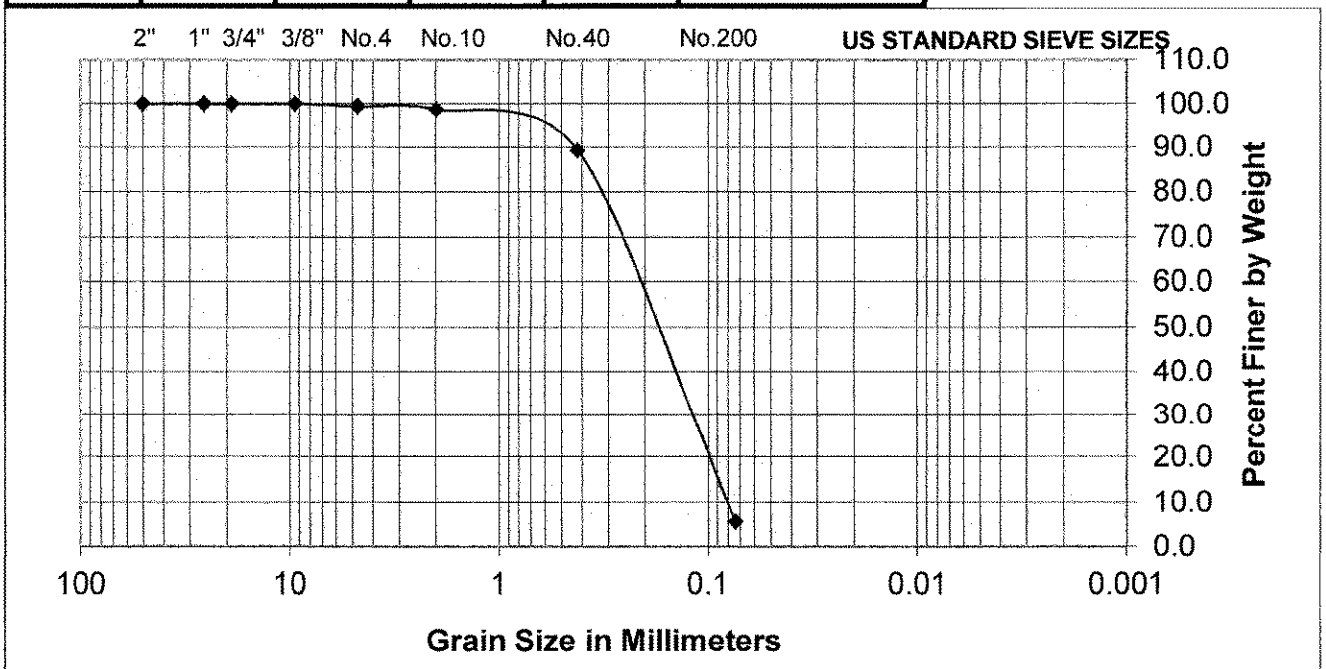
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-1
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1132.8
Weight of Tare (gm)	495.6
Weight of Sample (gm)	637.2

DESCRIPTION: **LIGHT BROWN SAND WITH SILT**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	3.3	0.52	0.52	99.5
No. 10	2.00	4.2	0.66	1.18	98.8
No. 40	0.42	60.8	9.54	10.72	89.3
No. 200	0.074	532.6	83.58	94.30	5.7
Pan	-	35.7	5.60	99.91	-



Coarse	Fine	Cor.	Medium	Fine	Silt	Clay
GRAVEL		SAND			FINES	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: OJA

RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/21/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-1	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	LIGHT BROWN SAND WITH SILT	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

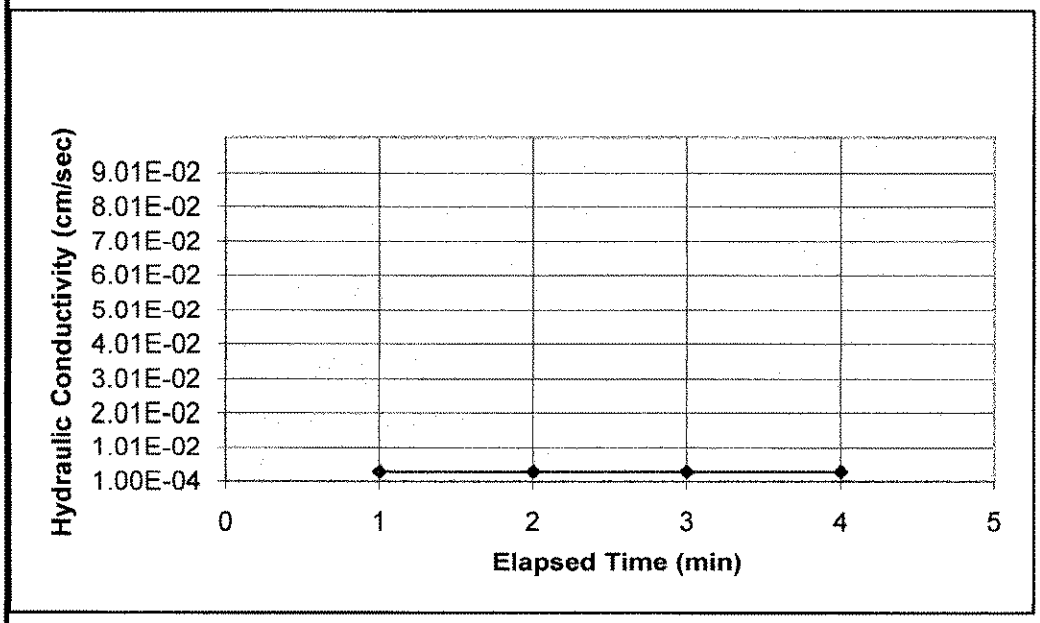
SPECIMEN PROPERTIES

INITIAL	
MOISTURE %:	2.5%
DRY WEIGHT (**pcf**):	90.7
SATURATION (%):	8.0%
VOID RATIO:	0.83

FINAL	
MOISTURE %:	31.2%
DRY WEIGHT (**pcf**):	90.7
SATURATION:	100.0%
VOID RATIO:	0.83
ROOM TEMP. (°C):	23.89

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

PERMEATION	
FINAL BACK PRESSURE:	-
EFFECTIVE CONSOLIDATION PRESSURE:	-
PORE PRESSURE DIFFERENCE:	-
HYDRAULIC GRADIENT:	1.04
QUANTITY OF FLOW:	37.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	2.97E-03	2.97E-03	2.97E-03	2.97E-03

HYDRAULIC CONDUCTIVITY @ 20 oC 2.97E-03 cm/sec

DATE: 5-25-17

REVIEWED BY: OJA

Genesis Testing Services, Inc.

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	PC-1

Residue +Tare weight (g)	531.73	536.18	524.69
Tare Weight (g)	74.56	80.97	78.06
Residue weight (g)	457.17	455.21	446.63

After Acid Application and Wash

Residue + Tare weight (g)	525.61	529.10	520.58
Residue weight (g)	451.05	448.13	442.52
Carbonate Content (%)	1.3	1.6	0.9

Average Carbonate Content (%) **1.3**

REMARKS

SAMPLE DESCRIPTION -

USCS -

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	TJ
DATE	5/18/17
CHECK	
REVIEW	
APPROVE	

PARTICLE SIZE ANALYSIS (ASTM D 422)

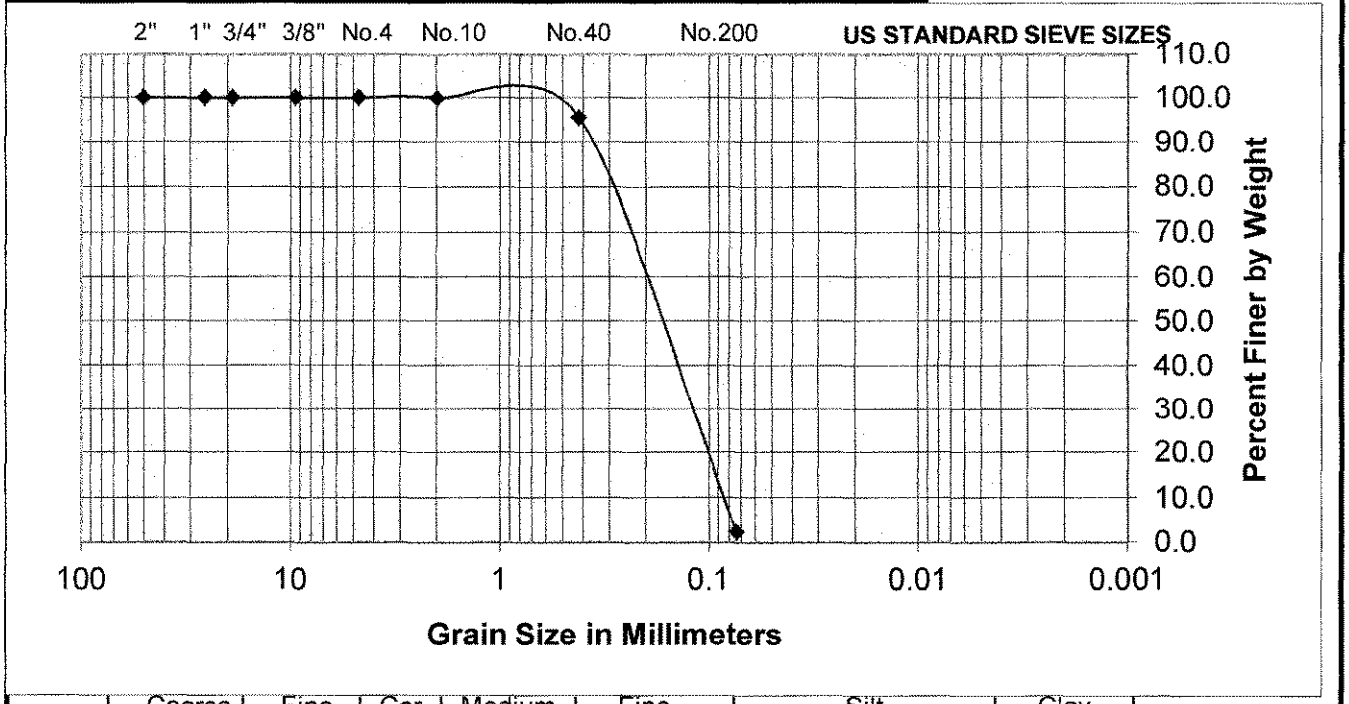
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-2
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1146.0
Weight of Tare (gm)	504.9
Weight of Sample (gm)	641.1

DESCRIPTION: **TAN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.3	0.05	0.05	100.0
No. 40	0.42	27.2	4.24	4.29	95.7
No. 200	0.074	597.9	93.26	97.55	2.4
Pan	-	15.5	2.42	99.97	-



Coarse	Fine	Cor.	Medium	Fine	Silt	Clay
GRAVEL		SAND			FINES	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: OSA

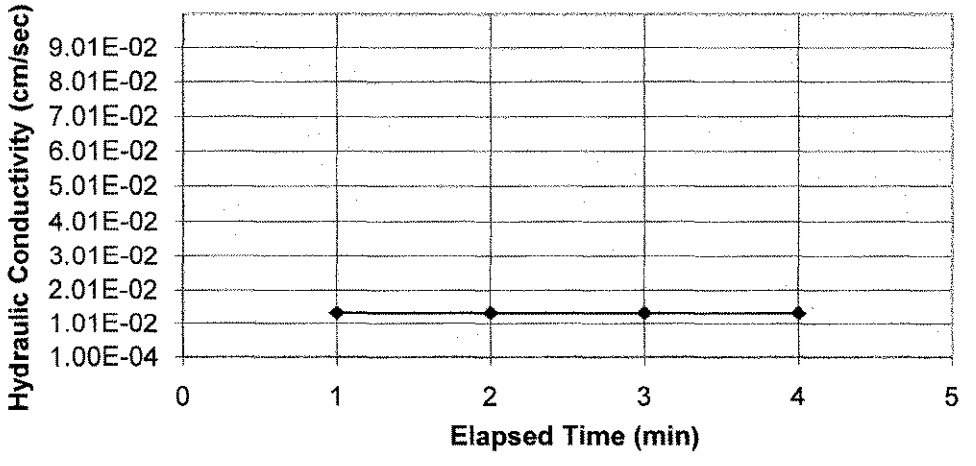
RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/21/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-2	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	TAN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

SPECIMEN PROPERTIES	
INITIAL	
MOISTURE %:	1.9%
DRY WEIGHT (**pcf**):	87.9
SATURATION (%):	5.7%
VOID RATIO:	0.89

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

FINAL		**PERMEATION**	
MOISTURE %:	33.4%	FINAL BACK PRESSURE:	-
DRY WEIGHT (**pcf**):	87.9	EFFECTIVE CONSOLIDATION PRESSURE:	-
SATURATION:	100.0%	PORE PRESSURE DIFFERENCE:	-
VOID RATIO:	0.89	HYDRAULIC GRADIENT:	0.22
ROOM TEMP. (°C):	23.89	QUANTITY OF FLOW:	36.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	1.34E-02	1.34E-02	1.34E-02	1.34E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 1.34E-02 cm/sec

DATE: 5-25-17
REVIEWED BY: DSH

Genesis Testing Services, Inc.

PARTICLE SIZE ANALYSIS (ASTM D 422)

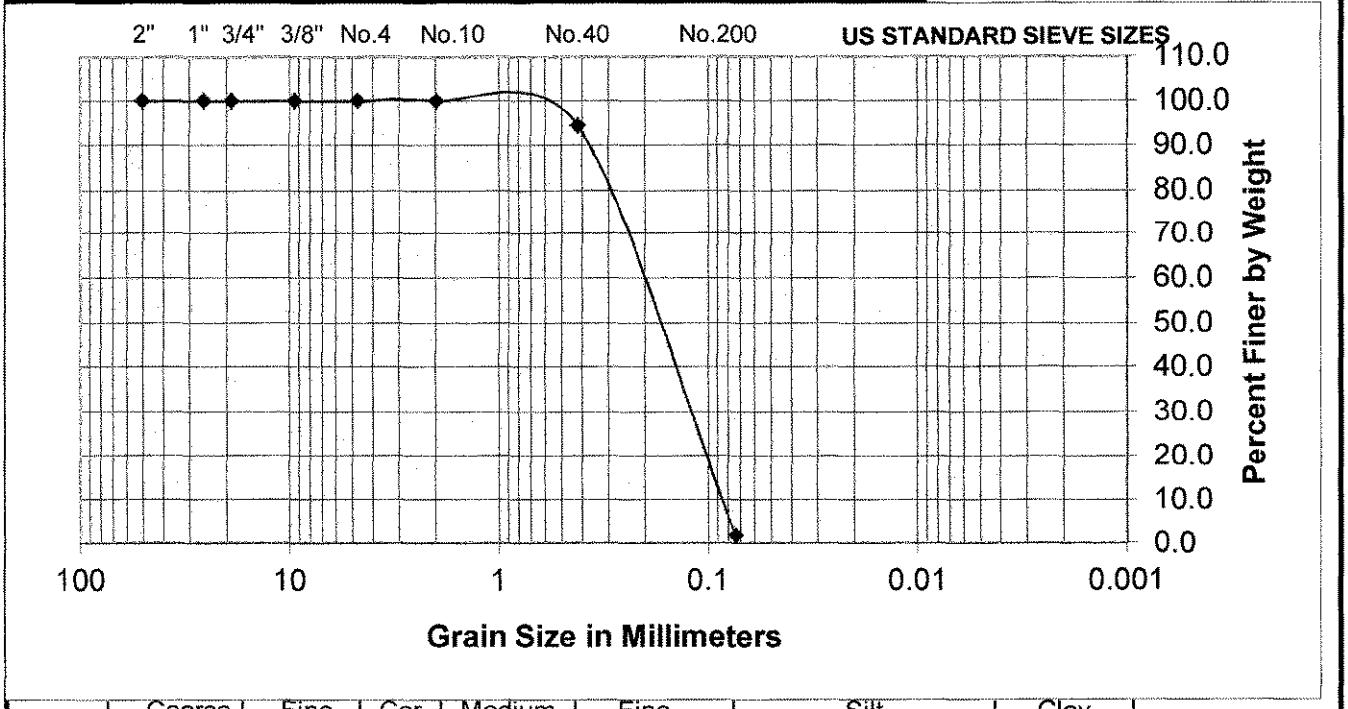
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-3
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1016.0
Weight of Tare (gm)	371.6
Weight of Sample (gm)	644.4

DESCRIPTION: **LIGHT BROWN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.0	0.00	0.00	100.0
No. 40	0.42	35.4	5.49	5.49	94.5
No. 200	0.074	596.9	92.63	98.12	1.9
Pan	-	11.8	1.83	99.95	-



Coarse	Fine	Cor.	Medium	Fine	Silt	Clay
GRAVEL		SAND			FINES	

DATE: 5-25-17

Genesis Testing Services, Inc.

REVIEW: OJA

RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

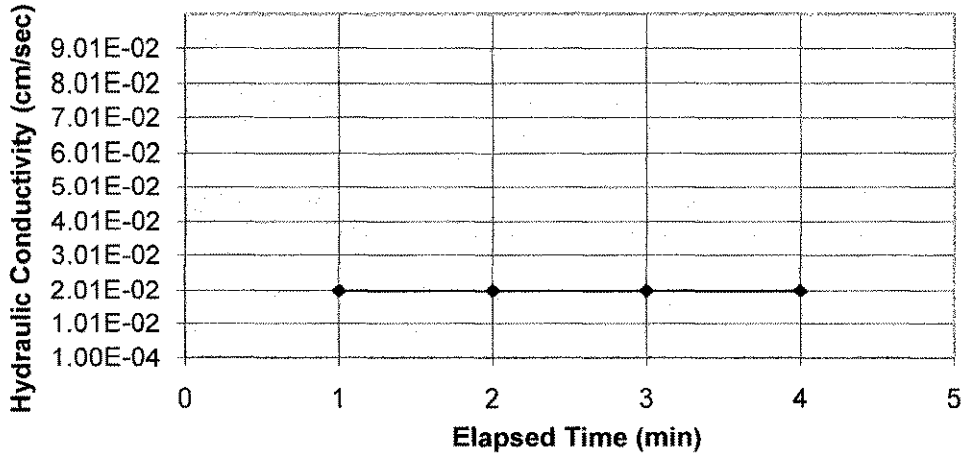
PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/21/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-3	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	LIGHT BROWN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

SPECIMEN PROPERTIES

INITIAL	
MOISTURE %:	1.4%
DRY WEIGHT (**pcf**):	91.7
SATURATION (%):	4.7%
VOID RATIO:	0.81

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

FINAL		PERMEATION	
MOISTURE %:	30.5%	FINAL BACK PRESSURE:	-
DRY WEIGHT (**pcf**):	91.7	EFFECTIVE CONSOLIDATION PRESSURE:	-
SATURATION:	100.0%	PORE PRESSURE DIFFERENCE:	-
VOID RATIO:	0.81	HYDRAULIC GRADIENT:	0.092
ROOM TEMP. (°C):	23.89	QUANTITY OF FLOW:	22.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	2.00E-02	2.00E-02	2.00E-02	2.00E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 2.00E-02 cm/sec

DATE: 5-25-17
REVIEWED BY: OJA

Genesis Testing Services, Inc.

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	PC-3

Residue +Tare weight (g)	567.16	561.25	559.23
Tare Weight (g)	83.55	76.81	79.97
Residue weight (g)	483.61	484.44	479.26

After Acid Application and Wash

Residue + Tare weight (g)	561.47	557.37	554.24
Residue weight (g)	477.92	480.56	474.27
Carbonate Content (%)	1.2	0.8	1.0

Average Carbonate Content (%) **1.0**

REMARKS

SAMPLE DESCRIPTION -

USCS -

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	TJ
DATE	5/18/17
CHECK	
REVIEW	
APPROVE	

PARTICLE SIZE ANALYSIS (ASTM D 422)

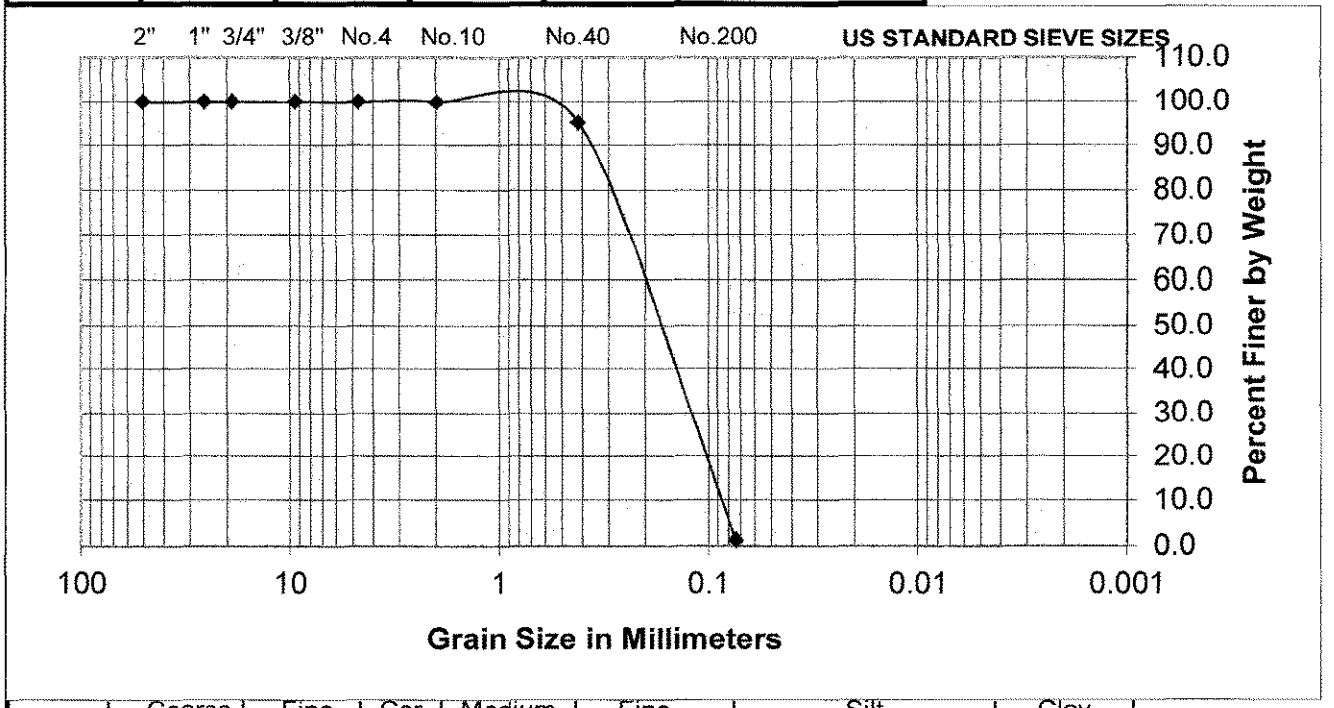
PROJECT TITLE: VISTA LANDFILL - CELL5	SAMPLE NUMBER: PC-4
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1147.1
Weight of Tare (gm)	498.3
Weight of Sample (gm)	648.8

DESCRIPTION: **TAN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.2	0.03	0.03	100.0
No. 40	0.42	30.3	4.67	4.70	95.3
No. 200	0.074	609.4	93.93	98.63	1.4
Pan	-	8.6	1.33	99.95	-



I Coarse I	Fine I	Cor. I	Medium I	Fine I	Silt I	Clay I
I GRAVEL I		SAND I			FINES I	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: OSA

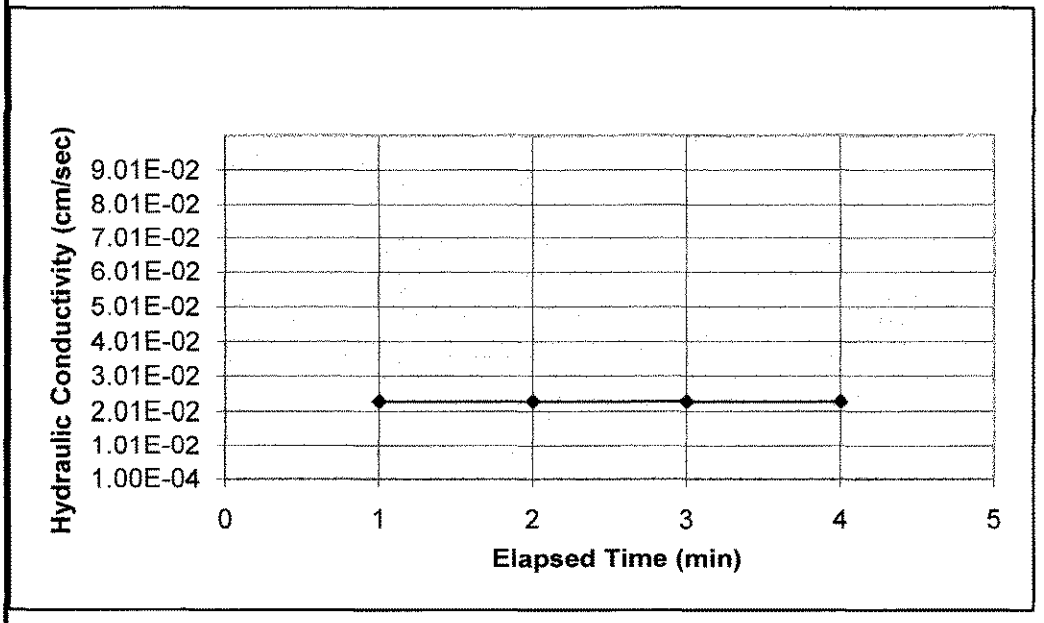
RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/21/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-4	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	TAN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

SPECIMEN PROPERTIES	
INITIAL	
MOISTURE %:	0.9%
DRY WEIGHT (**pcf**):	90.9
SATURATION (%):	2.8%
VOID RATIO:	0.83

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

FINAL		**PERMEATION**	
MOISTURE %:	31.1%	FINAL BACK PRESSURE:	-
DRY WEIGHT (**pcf**):	90.9	EFFECTIVE CONSOLIDATION PRESSURE:	-
SATURATION:	100.0%	PORE PRESSURE DIFFERENCE:	-
VOID RATIO:	0.83	HYDRAULIC GRADIENT:	0.066
ROOM TEMP. (°C):	23.89	QUANTITY OF FLOW:	18.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	2.29E-02	2.29E-02	2.29E-02	2.29E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 2.29E-02 cm/sec

DATE: 5-25-17

REVIEWED BY: OSA

Genesis Testing Services, Inc.

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	PC-4

Residue +Tare weight (g)	569.82	567.08	570.10
Tare Weight (g)	84.86	82.42	83.74
Residue weight (g)	484.96	484.66	486.36

After Acid Application and Wash

Residue + Tare weight (g)	563.87	562.49	564.95
Residue weight (g)	479.01	480.07	481.21
Carbonate Content (%)	1.2	0.9	1.1

Average Carbonate Content (%) **1.1**

REMARKS

SAMPLE DESCRIPTION -

USCS -

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	TJ
DATE	5/18/17
CHECK	
REVIEW	
APPROVE	

PARTICLE SIZE ANALYSIS (ASTM D 422)

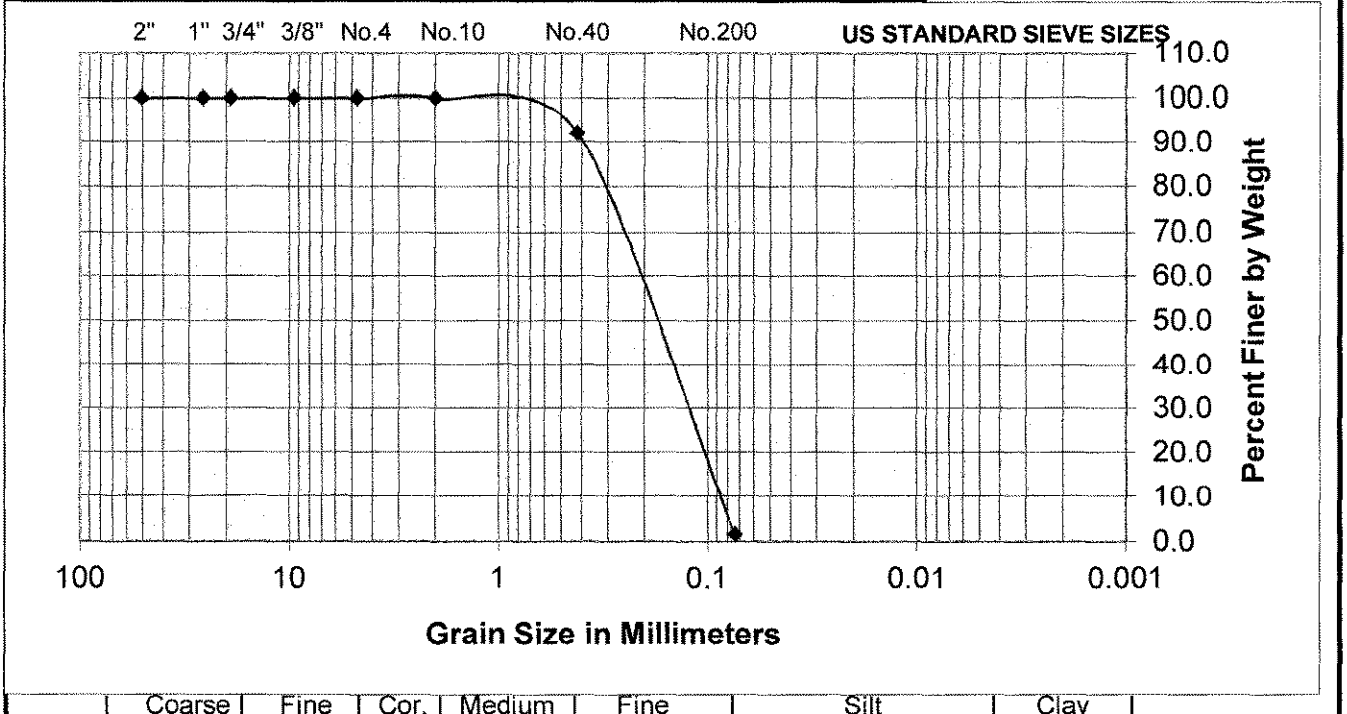
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-5
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1011.7
Weight of Tare (gm)	369.2
Weight of Sample (gm)	642.5

DESCRIPTION: **TAN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.0	0.00	0.00	100.0
No. 40	0.42	50.8	7.91	7.91	92.1
No. 200	0.074	581.0	90.43	98.33	1.7
Pan	-	10.2	1.59	99.92	-



Coarse	Fine	Cor.	Medium	Fine	Silt	Clay
GRAVEL		SAND			FINES	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: OJA

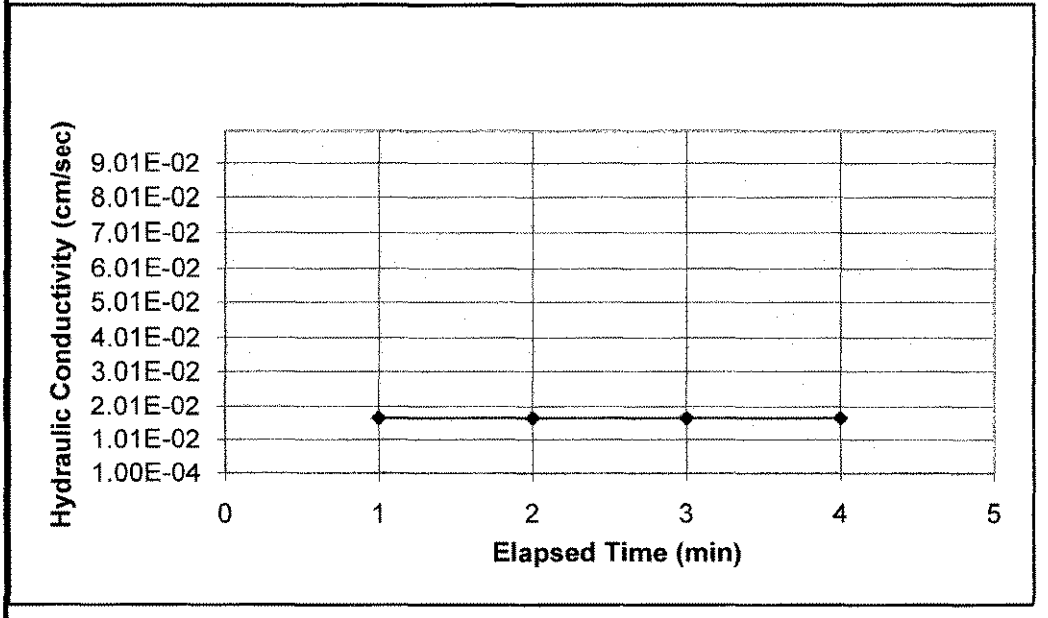
RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/22/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-5	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	TAN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

SPECIMEN PROPERTIES	
INITIAL	
MOISTURE %:	0.9%
DRY WEIGHT (**pcf**):	91.8
SATURATION (%):	2.9%
VOID RATIO:	0.81

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

FINAL		**PERMEATION**	
MOISTURE %:	30.4%	FINAL BACK PRESSURE:	-
DRY WEIGHT (**pcf**):	91.8	EFFECTIVE CONSOLIDATION PRESSURE:	-
SATURATION:	100.0%	PORE PRESSURE DIFFERENCE:	-
VOID RATIO:	0.81	HYDRAULIC GRADIENT:	0.29
ROOM TEMP. (°C):	22.78	QUANTITY OF FLOW:	56.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	1.66E-02	1.66E-02	1.66E-02	1.66E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 1.66E-02 cm/sec

DATE: 5-25-17

REVIEWED BY: DSA

Genesis Testing Services, Inc.

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	PC-5

Residue +Tare weight (g)	473.20	472.94	473.33
Tare Weight (g)	82.41	82.62	82.10
Residue weight (g)	390.79	390.32	391.23

After Acid Application and Wash

Residue + Tare weight (g)	472.08	471.64	471.48
Residue weight (g)	389.67	389.02	389.38
Carbonate Content (%)	0.3	0.3	0.5

Average Carbonate Content (%) **0.4**

REMARKS

SAMPLE DESCRIPTION -

USCS -

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	TJ
DATE	5/18/17
CHECK	
REVIEW	
APPROVE	

PARTICLE SIZE ANALYSIS (ASTM D 422)

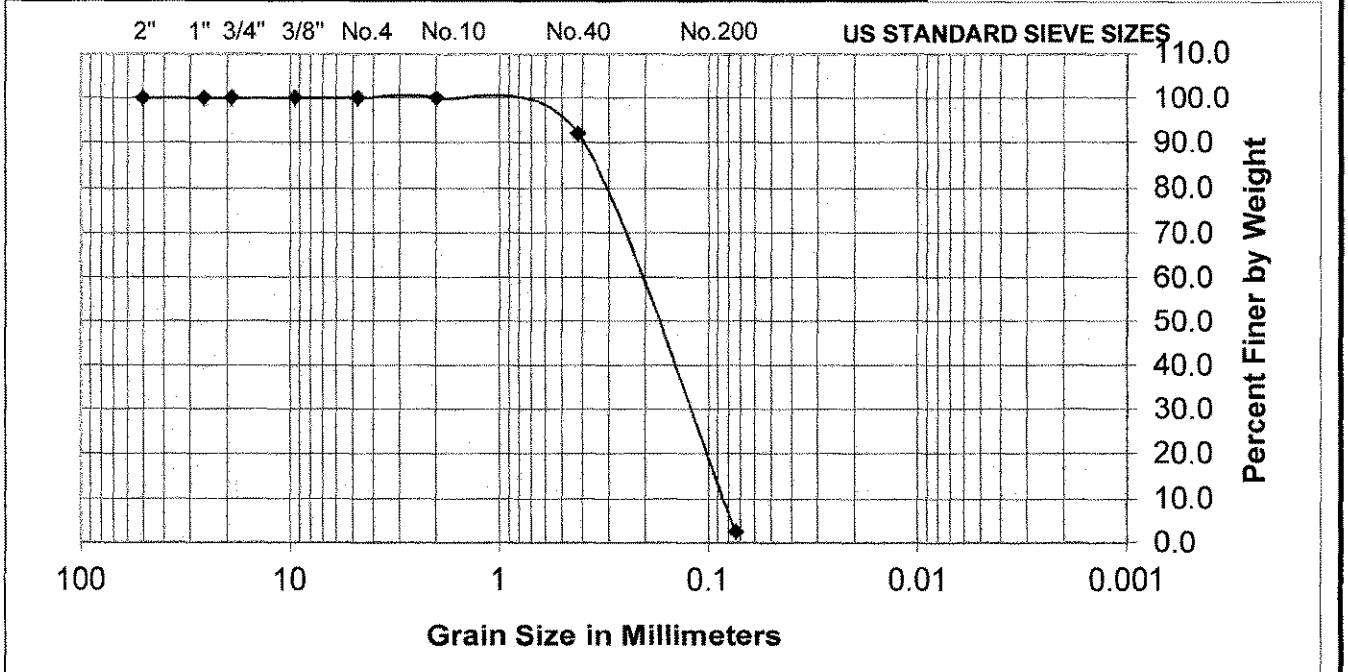
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-6
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1013.6
Weight of Tare (gm)	376.1
Weight of Sample (gm)	637.5

DESCRIPTION: **LIGHT BROWN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.0	0.00	0.00	100.0
No. 40	0.42	51.0	8.00	8.00	92.0
No. 200	0.074	570.3	89.46	97.46	2.5
Pan	-	15.4	2.42	99.87	-



I Coarse I	Fine I	Cor. I	Medium I	Fine I	Silt I	Clay I
I GRAVEL I		SAND I			FINES I	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: OSA

RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/22/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-6	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	LIGHT BROWN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

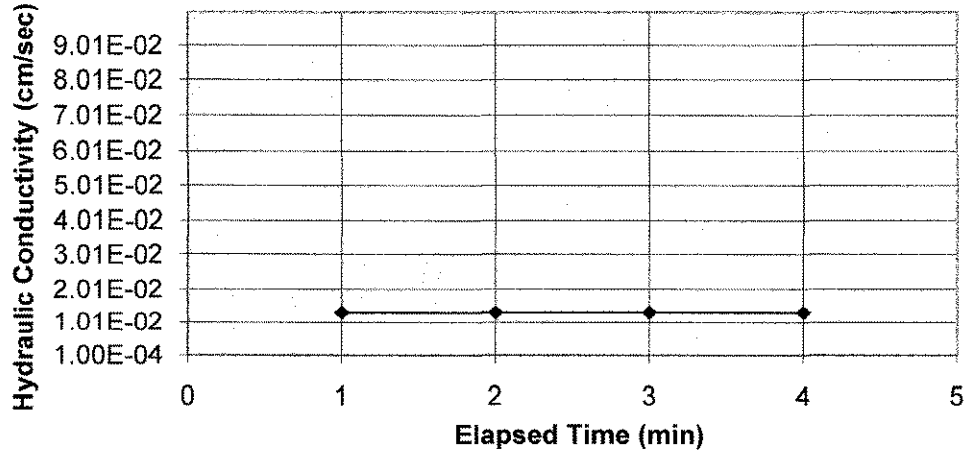
SPECIMEN PROPERTIES

INITIAL	
MOISTURE %:	1.6%
DRY WEIGHT (**pcf**):	90.6
SATURATION (%):	5.1%
VOID RATIO:	0.83

FINAL	
MOISTURE %:	31.3%
DRY WEIGHT (**pcf**):	90.6
SATURATION:	100.0%
VOID RATIO:	0.83
ROOM TEMP. (°C):	22.78

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

PERMEATION	
FINAL BACK PRESSURE:	-
EFFECTIVE CONSOLIDATION PRESSURE:	-
PORE PRESSURE DIFFERENCE:	-
HYDRAULIC GRADIENT:	0.105
QUANTITY OF FLOW:	16.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	1.30E-02	1.30E-02	1.30E-02	1.30E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 1.30E-02 cm/sec

DATE: 5-25-17

REVIEWED BY: OSA

Genesis Testing Services, Inc.

PARTICLE SIZE ANALYSIS (ASTM D 422)

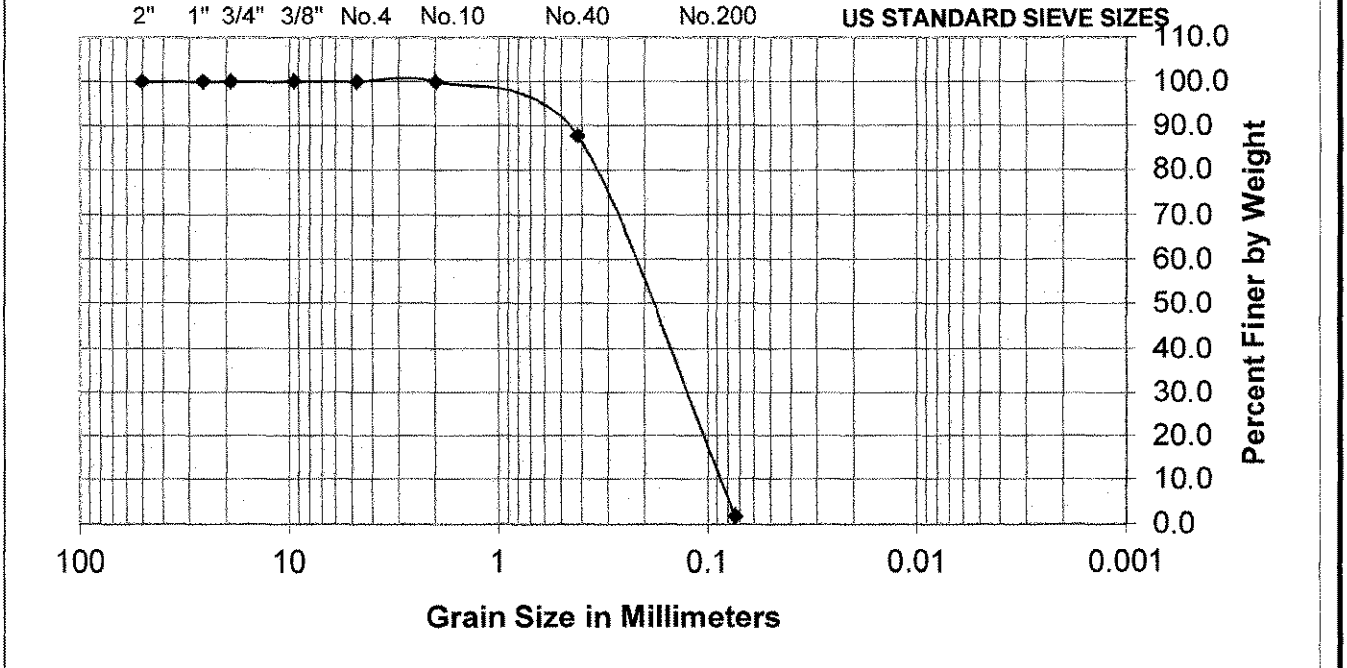
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-7
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1148.1
Weight of Tare (gm)	504.8
Weight of Sample (gm)	643.3

DESCRIPTION: **LIGHT BROWN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.0	0.00	0.00	100.0
No. 40	0.42	78.7	12.23	12.23	87.8
No. 200	0.074	552.6	85.90	98.13	1.9
Pan	-	11.2	1.74	99.88	-



I Coarse I	Fine I	Cor. I	Medium I	Fine I	Silt I	Clay I
I GRAVEL I		SAND I			FINES I	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: OSA

RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/22/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-7	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	LIGHT BROWN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

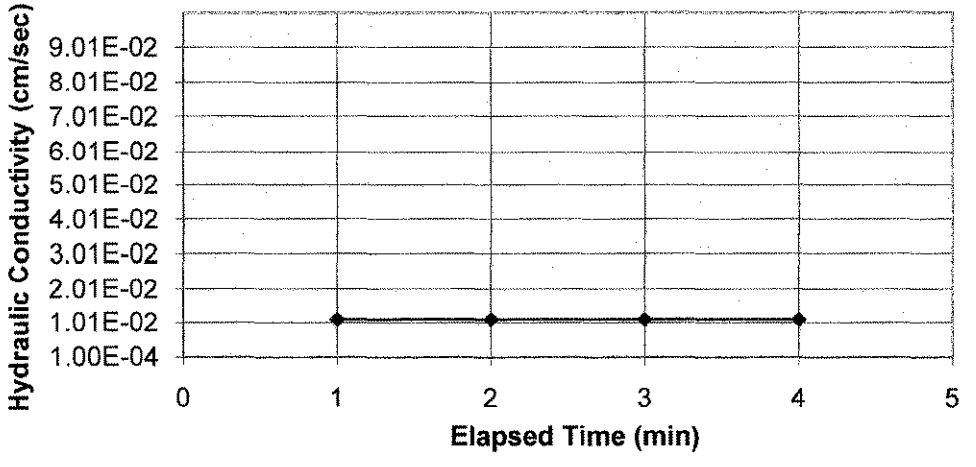
SPECIMEN PROPERTIES

INITIAL	
MOISTURE %:	1.6%
DRY WEIGHT (**pcf**):	93.7
SATURATION (%):	5.5%
VOID RATIO:	0.77

FINAL	
MOISTURE %:	29.0%
DRY WEIGHT (**pcf**):	93.7
SATURATION:	100.0%
VOID RATIO:	0.77
ROOM TEMP. (**°C**):	22.78

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

PERMEATION	
FINAL BACK PRESSURE:	-
EFFECTIVE CONSOLIDATION PRESSURE:	-
PORE PRESSURE DIFFERENCE:	-
HYDRAULIC GRADIENT:	0.34
QUANTITY OF FLOW:	44.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	1.10E-02	1.10E-02	1.10E-02	1.10E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 1.10E-02 cm/sec

DATE: 5-25-17

REVIEWED BY: OJA

Genesis Testing Services, Inc.

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	PC-7

Residue +Tare weight (g)	469.99	474.10	471.62
Tare Weight (g)	82.21	82.69	82.45
Residue weight (g)	387.78	391.41	389.17

After Acid Application and Wash

Residue + Tare weight (g)	466.76	471.29	469.39
Residue weight (g)	384.55	388.60	386.94
Carbonate Content (%)	0.8	0.7	0.6

Average Carbonate Content (%) **0.7**

REMARKS

SAMPLE DESCRIPTION

USCS

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	TJ
DATE	5/19/17
CHECK	
REVIEW	
APPROVE	

PARTICLE SIZE ANALYSIS (ASTM D 422)

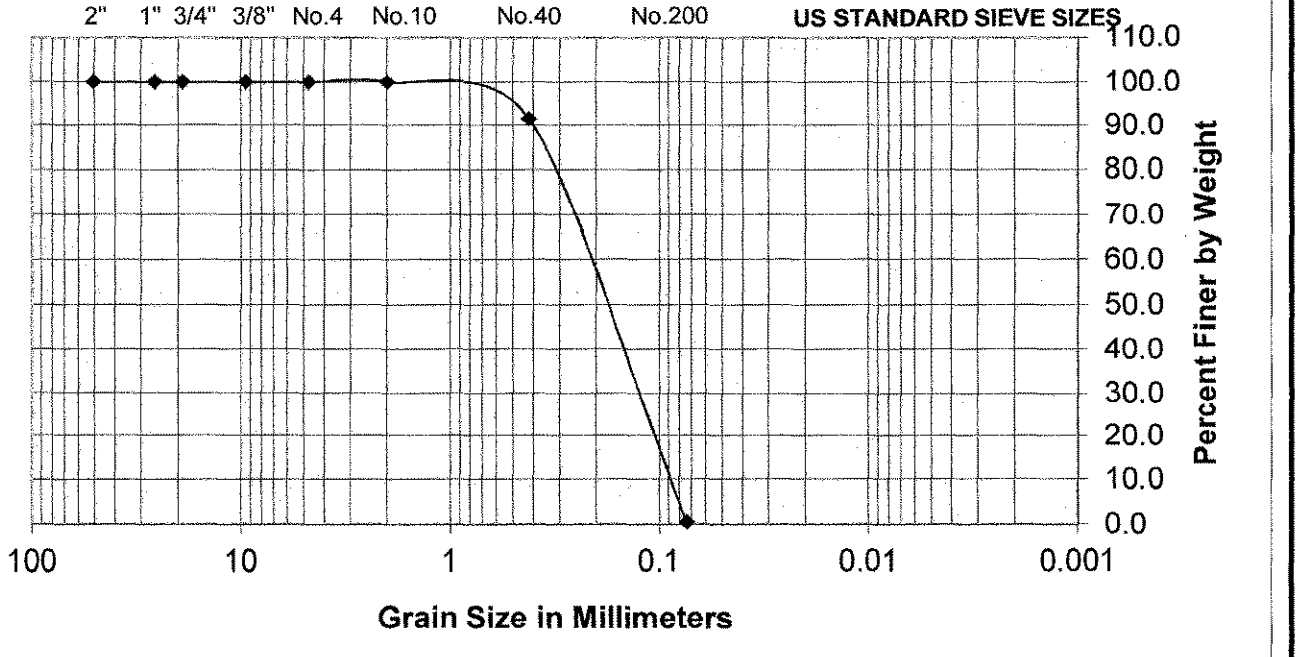
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-8
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1007.4
Weight of Tare (gm)	371.5
Weight of Sample (gm)	635.9

DESCRIPTION: **TAN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.0	0.00	0.00	100.0
No. 40	0.42	54.2	8.52	8.52	91.5
No. 200	0.074	578.1	90.91	99.43	0.6
Pan	-	3.1	0.49	99.92	-



Coarse	Fine	Cor.	Medium	Fine	Silt	Clay
GRAVEL		SAND			FINES	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: OSA

RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/22/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-8	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	TAN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

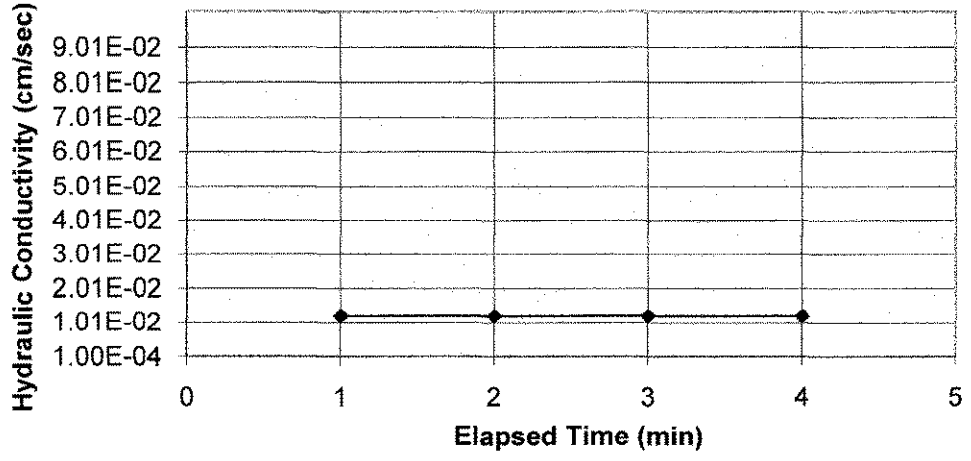
SPECIMEN PROPERTIES

INITIAL	
MOISTURE %:	2.0%
DRY WEIGHT (**pcf**):	91.8
SATURATION (%):	6.6%
VOID RATIO:	0.81

FINAL	
MOISTURE %:	30.4%
DRY WEIGHT (**pcf**):	91.8
SATURATION:	100.0%
VOID RATIO:	0.81
ROOM TEMP. (°C):	22.78

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

PERMEATION	
FINAL BACK PRESSURE:	-
EFFECTIVE CONSOLIDATION PRESSURE:	-
PORE PRESSURE DIFFERENCE:	-
HYDRAULIC GRADIENT:	0.18
QUANTITY OF FLOW:	26.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	1.21E-02	1.21E-02	1.21E-02	1.21E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 1.21E-02 cm/sec

DATE: 5-25-17

REVIEWED BY: OSA

Genesis Testing Services, Inc.

PARTICLE SIZE ANALYSIS (ASTM D 422)

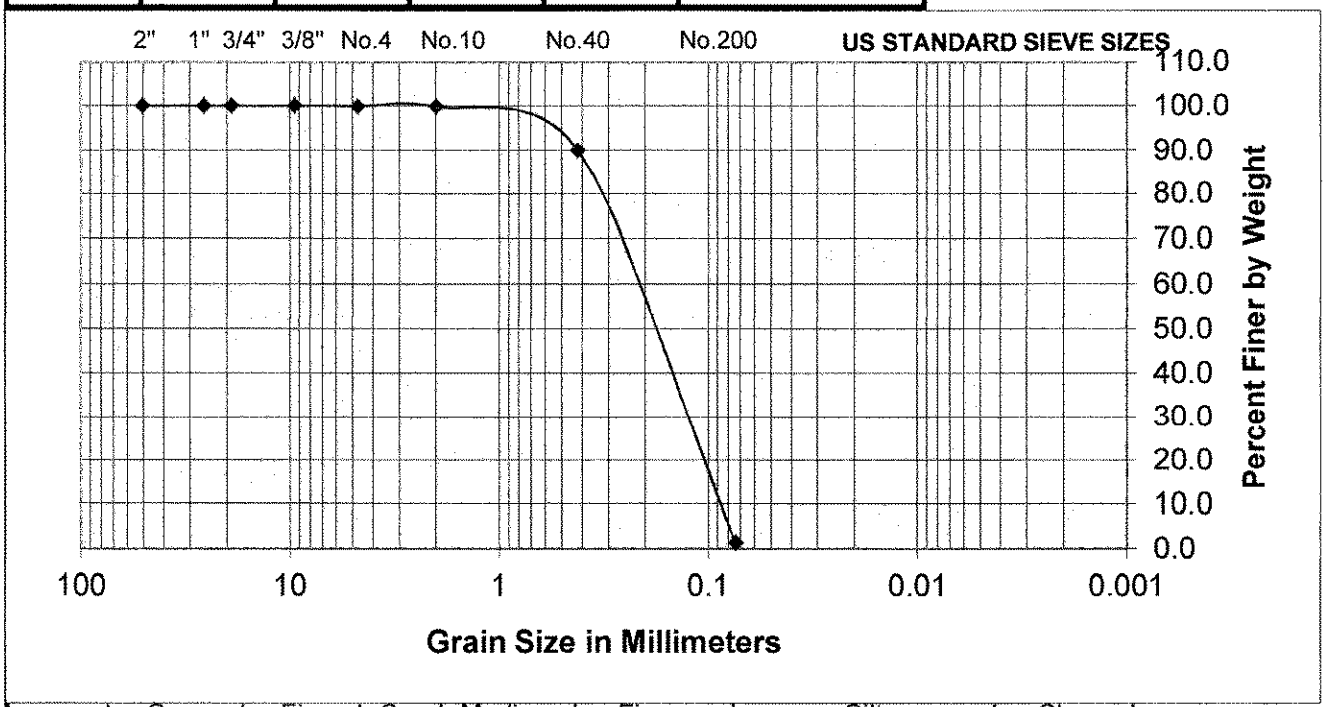
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-9
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1142.8
Weight of Tare (gm)	498.3
Weight of Sample (gm)	644.5

DESCRIPTION: **TAN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.4	0.06	0.06	99.9
No. 10	2.00	0.5	0.08	0.14	99.9
No. 40	0.42	63.2	9.81	9.95	90.1
No. 200	0.074	571.7	88.70	98.65	1.3
Pan	-	8.0	1.24	99.89	-



Genesis Testing Services, Inc.

DATE: 5-29-17

REVIEW: OSA

RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/22/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-9	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	TAN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

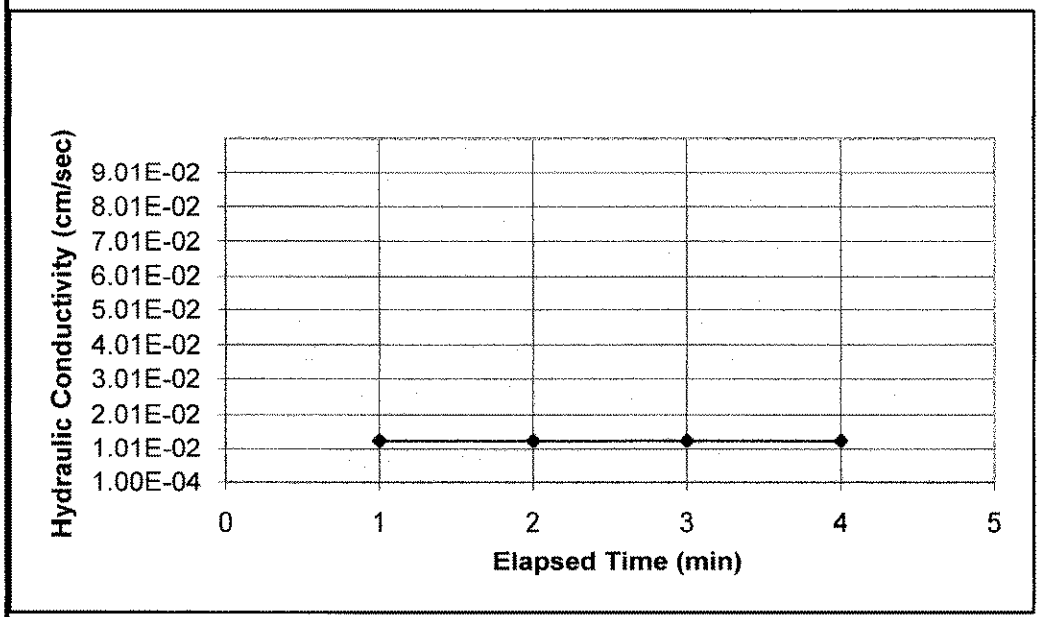
SPECIMEN PROPERTIES

INITIAL	
MOISTURE %:	0.7%
DRY WEIGHT (**pcf**):	93.5
SATURATION (%):	2.3%
VOID RATIO:	0.78

FINAL	
MOISTURE %:	29.1%
DRY WEIGHT (**pcf**):	93.5
SATURATION:	100.0%
VOID RATIO:	0.78
ROOM TEMP. (°C):	22.78

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

PERMEATION	
FINAL BACK PRESSURE:	-
EFFECTIVE CONSOLIDATION PRESSURE:	-
PORE PRESSURE DIFFERENCE:	-
HYDRAULIC GRADIENT:	0.3
QUANTITY OF FLOW:	44.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	1.25E-02	1.25E-02	1.25E-02	1.25E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 1.25E-02 cm/sec

DATE: 5-25-17

REVIEWED BY: OJA

Genesis Testing Services, Inc.

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	PC-9

Residue +Tare weight (g)	471.48	469.51	468.90
Tare Weight (g)	81.56	82.43	81.37
Residue weight (g)	389.92	387.08	387.53

After Acid Application and Wash

Residue + Tare weight (g)	468.68	464.33	466.23
Residue weight (g)	387.12	381.90	384.86
Carbonate Content (%)	0.7	1.3	0.7

Average Carbonate Content (%) **0.9**

REMARKS

SAMPLE DESCRIPTION

USCS

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	**TJ**
DATE	**5/19/17**
CHECK	
REVIEW	
APPROVE	

PARTICLE SIZE ANALYSIS (ASTM D 422)

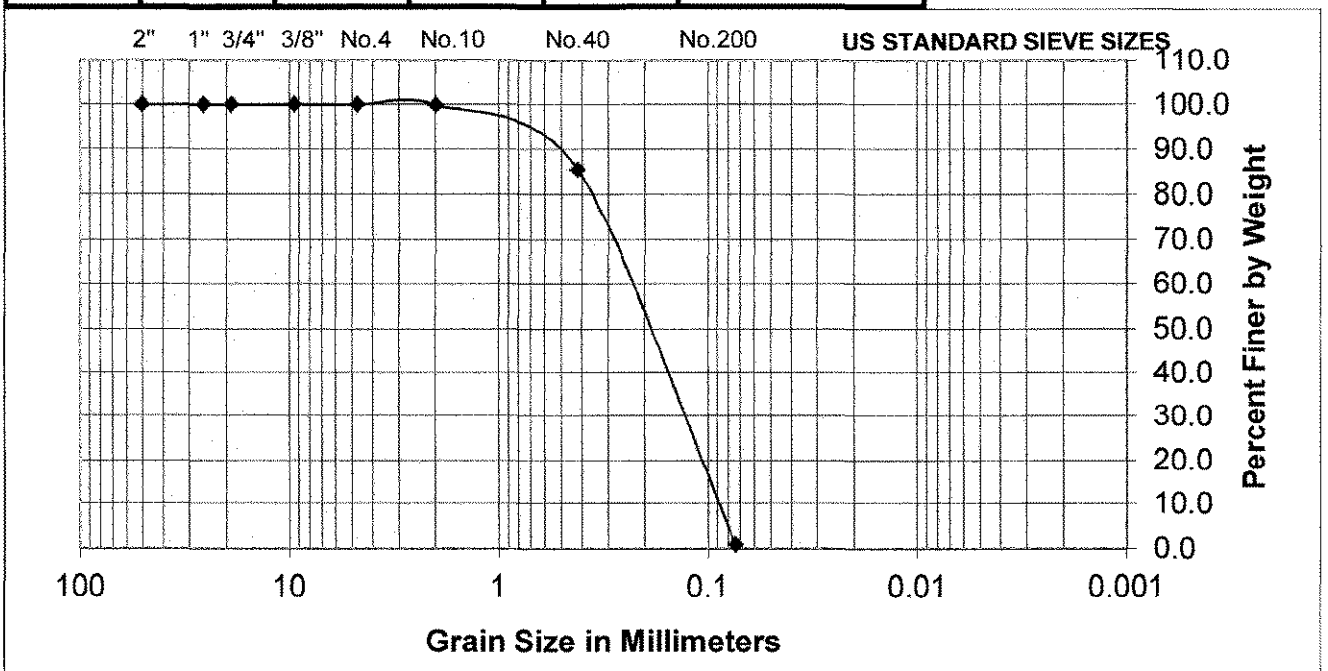
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-10
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1016.4
Weight of Tare (gm)	369.1
Weight of Sample (gm)	647.3

DESCRIPTION: **TAN SAND**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	0.2	0.03	0.03	100.0
No. 40	0.42	93.2	14.40	14.43	85.6
No. 200	0.074	547.4	84.57	99.00	1.0
Pan	-	5.9	0.91	99.91	-



Coarse	Fine	Cor.	Medium	Fine	Silt	Clay
GRAVEL		SAND			FINES	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: OJA

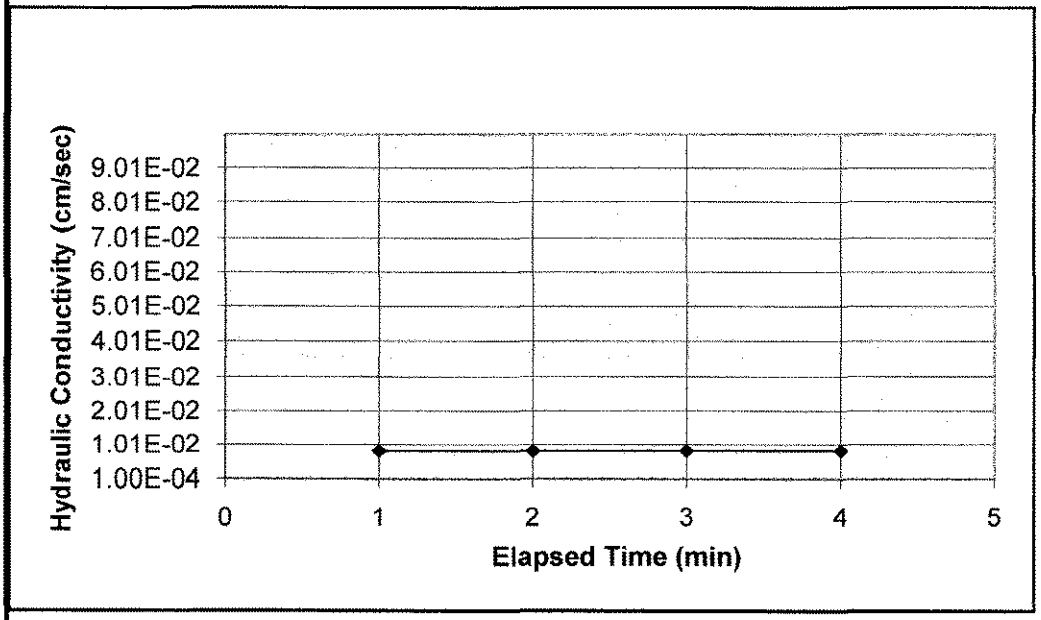
RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/23/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-10	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	TAN SAND	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

SPECIMEN PROPERTIES	
INITIAL	
MOISTURE %:	0.8%
DRY WEIGHT (**pcf**):	92.1
SATURATION (%):	2.8%
VOID RATIO:	0.80

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

FINAL		**PERMEATION**	
MOISTURE %:	30.2%	FINAL BACK PRESSURE:	-
DRY WEIGHT (**pcf**):	92.1	EFFECTIVE CONSOLIDATION PRESSURE:	-
SATURATION:	100.0%	PORE PRESSURE DIFFERENCE:	-
VOID RATIO:	0.80	HYDRAULIC GRADIENT:	0.17
ROOM TEMP. (°C):	23.33	QUANTITY OF FLOW:	16.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	8.02E-03	8.02E-03	8.02E-03	8.02E-03

HYDRAULIC CONDUCTIVITY @ 20 oC 8.02E-03 cm/sec

DATE: 5-25-17

REVIEWED BY: OSH

Genesis Testing Services, Inc.

PARTICLE SIZE ANALYSIS (ASTM D 422)

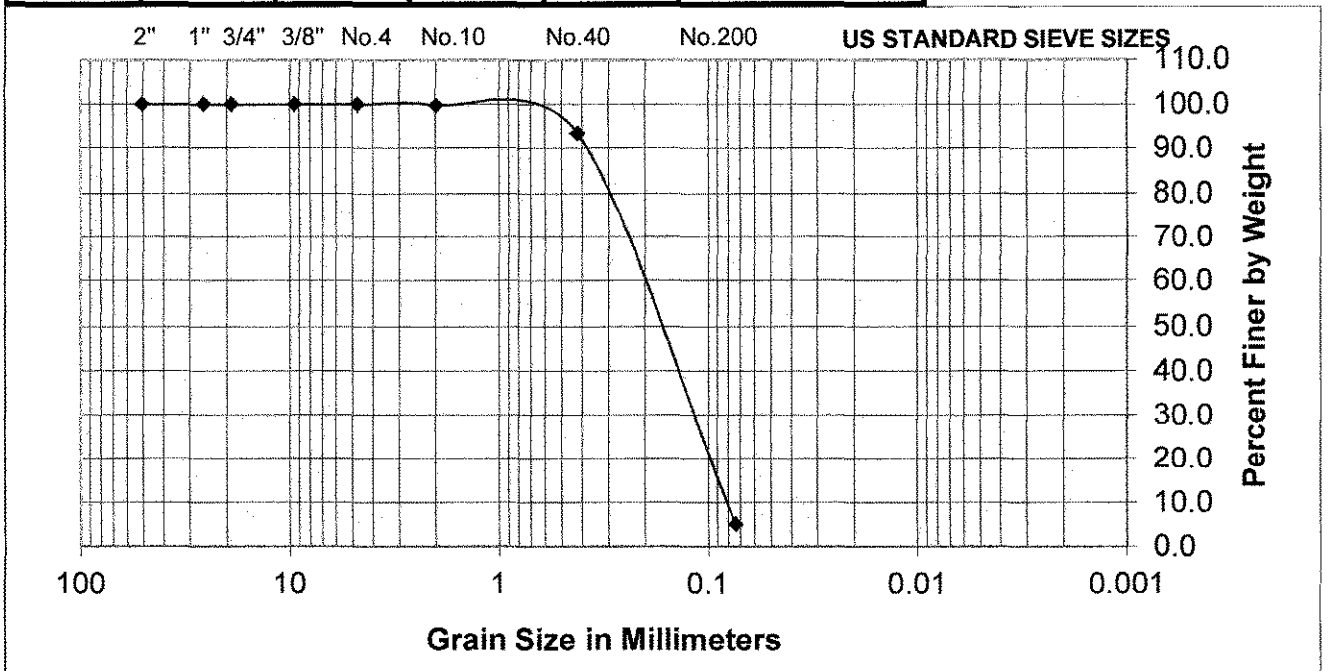
PROJECT TITLE: VISTA LANDFILL - CELL 5	SAMPLE NUMBER: PC-11
PROJECT NUMBER: 2017-09	SAMPLE TYPE: Bag

IN-SITU MOISTURE	
Wet Wt. Soil + Tare(gm)	-
Dry Wt. Soil + Tare (gm)	-
Weight of Tare (gm)	-
Weight of Water (gm)	-
Weight of Dry Soil (gm)	-
Moisture Content (%)	-

TOTAL WEIGHT OF SAMPLE USED	
Weight of Sample + Tare gm)	1015.8
Weight of Tare (gm)	376.1
Weight of Sample (gm)	639.7

DESCRIPTION: **TAN SAND WITH SILT**

Sieve Number	Grain Size (mm)	Mass of soil retained on sieve (g)	Percent of mass retained on each sieve	Cumulative percent retained	Percent Finer (%)
3-inch	76.1	0.0	0.00	0.00	100.0
2-inch	50.8	0.0	0.00	0.00	100.0
1-inch	25.7	0.0	0.00	0.00	100.0
3/4-inch	19.0	0.0	0.00	0.00	100.0
3/8-inch	9.51	0.0	0.00	0.00	100.0
No. 4	4.76	0.0	0.00	0.00	100.0
No. 10	2.00	1.0	0.16	0.16	99.8
No. 40	0.42	41.5	6.49	6.64	93.4
No. 200	0.074	564.4	88.23	94.87	5.1
Pan	-	32.4	5.06	99.94	-



I Coarse I	Fine I	Cor. I	Medium I	Fine I	Silt I	Clay I
I GRAVEL I		SAND I			FINES I	

Genesis Testing Services, Inc.

DATE: 5-25-17

REVIEW: DSA

RIGID WALL PERMEABILITY TEST REPORT (ASTM D 2434)

PROJECT TITLE:	VISTA LANDFILL - CELL 5	DATE:	5/23/2017
PROJECT NUMBER:	2017-09	SAMPLE TYPE:	BAG
SAMPLE NUMBER:	PC-11	DIAMETER, INCHES:	3.0
SOIL DESCRIPTION:	TAN SAND WITH SILT	LENGTH, INCHES:	3.0
LIQUID LIMIT:	-	ESTIMATED S.G.:	2.66
PLASTICITY INDEX:	-	USCS:	SP

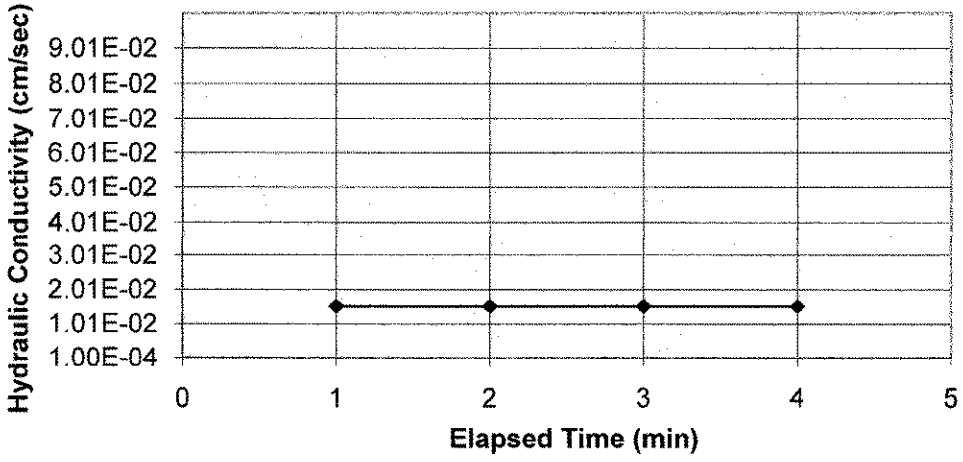
SPECIMEN PROPERTIES

INITIAL	
MOISTURE %:	2.5%
DRY WEIGHT (**pcf**):	87.9
SATURATION (%):	7.5%
VOID RATIO:	0.89

FINAL	
MOISTURE %:	33.4%
DRY WEIGHT (**pcf**):	87.9
SATURATION:	100.0%
VOID RATIO:	0.89
ROOM TEMP. (°C):	23.33

REMOLDED SOIL PROPERTIES	
MAXIMUM DRY DENSITY (pcf):	N/A
OPTIMUM MOISTURE CONTENT (%)	N/A
Material was lightly compacted in the permeameter.	
PERMEANT DESCRIPTION: Tap Water	

PERMEATION	
FINAL BACK PRESSURE:	-
EFFECTIVE CONSOLIDATION PRESSURE:	-
PORE PRESSURE DIFFERENCE:	-
HYDRAULIC GRADIENT:	0.18
QUANTITY OF FLOW:	33.0 cu.cm



ELAPSED TIME (MIN):	1	2	3	4
HYDRAULIC CONDUCTIVITY (CM/SEC):	1.52E-02	1.52E-02	1.52E-02	1.52E-02

HYDRAULIC CONDUCTIVITY @ 20 oC 1.52E-02 cm/sec

DATE: 5-25-17

REVIEWED BY: OSA

Genesis Testing Services, Inc.

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	PC-11

Residue +Tare weight (g)	453.96	460.47	453.38
Tare Weight (g)	80.35	83.33	83.38
Residue weight (g)	373.61	377.14	370.00

After Acid Application and Wash

Residue + Tare weight (g)	448.01	449.91	445.20
Residue weight (g)	367.66	366.58	361.82
Carbonate Content (%)	1.6	2.8	2.2

Average Carbonate Content (%) **2.2**

REMARKS

SAMPLE DESCRIPTION -

USCS -

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	**TJ**
DATE	**5/19/17**
CHECK	
REVIEW	
APPROVE	

A.4 STONE AGGREGATE CONFORMANCE TESTS

VISTA LANDFILL - CELL 5
SUMMARY OF SOIL DATA

Sample ID	Sample Type	Sample Depth	Soil Classification	In-Situ Moisture (%)	Atterberg Limits			Grain Size Distribution			Standard Proctor		Gs	Unit Weight		Permeability (cm/sec)	Carbonate Content (%)
					L.L.	P.L.	P.I.	% Finer No. 4 Sieve	% Finer No. 200 Sieve	% Finer .005 mm Sieve	Maximum Dry Density (lb/cu.ft)	Optimum Moisture Content (%)		Dry Density (lb/cu.ft)	Moisture Content (%)		
S-1	BULK	-	GP	-	-	-	-	1.1	0.5	-	-	-	-	93.7	-	27.4	0.0
S-2	BULK	-	GP	-	-	-	-	1.0	0.2	-	-	-	-	99.5	-	10.2	0.1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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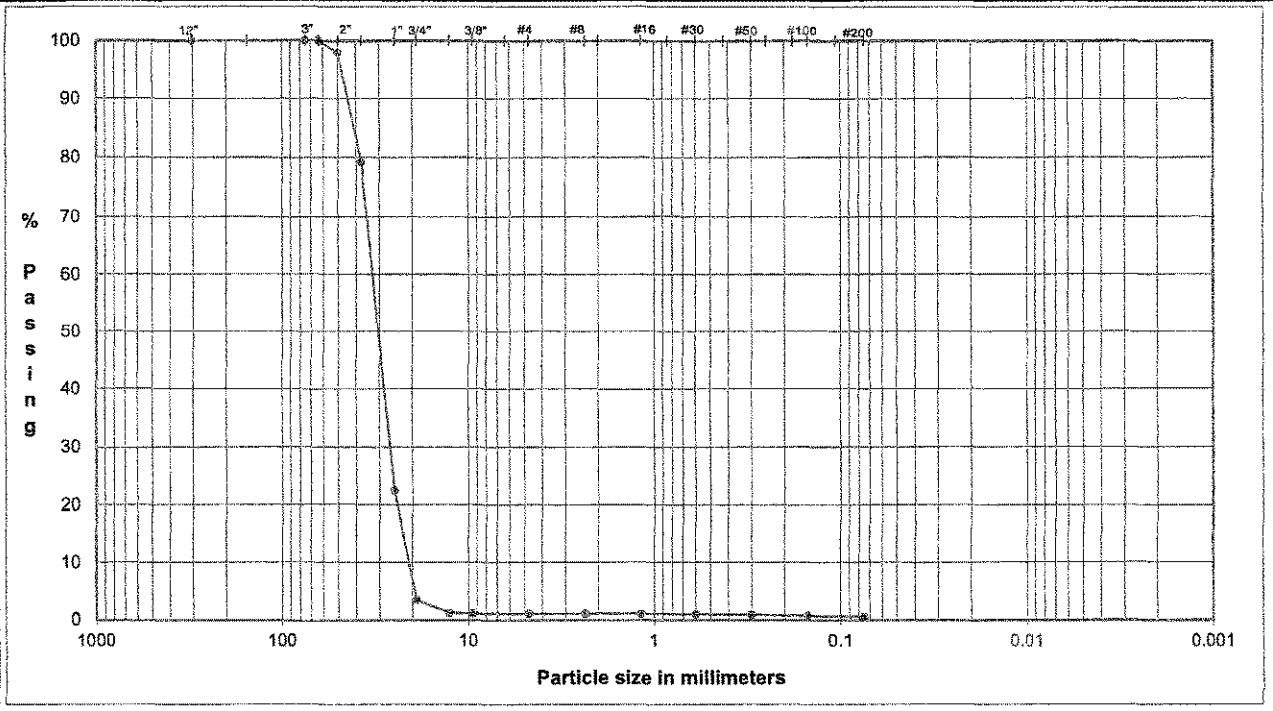
ABBREVIATIONS: LIQUID LIMIT (L.L.)
PLASTIC LIMIT (P.L.)
PLASTICITY INDEX (P.I.)
NON-PLASTIC (N/P)
SPECIFIC GRAVITY (Gs)
MOISTURE CONTENT (Mc)

NOTES: T = TRIAXIAL TEST
U = UNCONFINED COMPRESSION TEST
DS = DIRECT SHEAR TEST
O = ORGANIC CONTENT
P = pH
CC = CARBONATE CONTENT

PARTICLE SIZE DISTRIBUTION

ASTM C117, C136

PROJECT NAME: **GTS/VISTA LF-CELL 5/FL**
SAMPLE ID: **S-1** - Depth: -
TYPE: **Bulk**



	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
COBBLES	GRAVEL		SAND			FINES

U.S. Standard Sieves Sizes and Numbers

	Particle Size (mm)	% Passing	Particle Size Classification	Percentage
12.0"	304.8	100.0		
3.0"	75	100.0	Cobbles	0.0
2.5"	63.5	100.0		
2.0"	50	97.9		
1.5"	37.5	79.2		
1.0"	25	22.4		
0.75"	19	3.4	Coarse Gravel	96.6
0.50"	12.7	1.2		
0.375"	9.5	1.1		
#4	4.75	1.1	Fine Gravel	2.3
#8	2.36	1.0	Coarse Sand	0.0
#16	1.18	1.0		
#30	0.60	0.9	Medium Sand	0.1
#50	0.30	0.9		
#100	0.15	0.7		
#200	0.075	0.5	Fine Sand	0.4
			Fines	0.5

D_{60}= 32.70	D_{30}= 26.39	D_{10}= 20.90
Cu = D60/D10 =	1.6	< 4
Cc = D30^2/(D10*D60) =	1.0	> 1

DESCRIPTION: GRAVEL, fine to coarse, trace sand, trace fines; light gray.

USCS: GP

M_c

TECH	FM
DATE	5/31/17
CHECK	DA
REVIEW	[illegible]
APPROVE	

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	S-1

Residue +Tare weight (g)	608.95	869.70	699.76
Tare Weight (g)	78.16	82.26	80.97
Residue weight (g)	530.79	787.44	618.79

After Acid Application and Wash

Residue + Tare weight (g)	608.95	869.70	699.84
Residue weight (g)	530.79	787.44	618.87
Carbonate Content (%)	0.0	0.0	0.0

Average Carbonate Content (%) **0.0**

REMARKS

SAMPLE DESCRIPTION GRAVEL, fine to coarse, trace sand, trace fines; light gray.

USCS GP

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	**FT/WD**
DATE	**5/31/17**
CHECK	DA
REVIEW	MM
APPROVE	

CONSTANT HEAD PERMEABILITY TEST
ASTM D 2434 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL	**SAMPLE ID**	S-1
PROJECT NUMBER	1775013.02	**SAMPLE TYPE**	Bulk
REMARKS	-	**SAMPLE DEPTH**	-

		TIME IN SECONDS	VOLUME (ml)	TEMP. °C	Flow Rate (ml/sec)	
Gradient -1	1.	8.59	7570	27.5	881.26	*
	2.	8.37	7570	27.5	904.42	*
	3.	8.35	7570	27.5	906.59	*
Gradient -2	1.	7.00	7570	27.5	1081.43	*
	2.	7.07	7570	27.5	1070.72	*
	3.	7.07	7570	27.5	1070.72	*
Gradient -3	1.					
	2.					
	3.					

INITIAL UNIT WEIGHT DETERMINATION

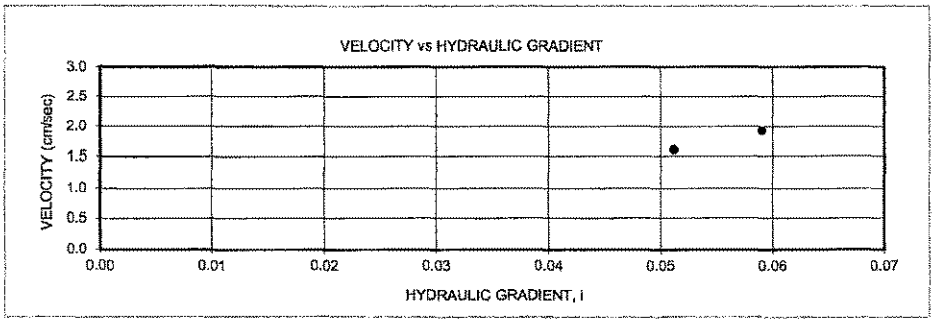
APPARATUS & WET SAMPLE (lbs):	42.8
APPARATUS & WET SAMPLE (g):	21307.0
APPARATUS WEIGHT (g):	0.0
WET SAMPLE WEIGHT (g):	21307.0

	INITIAL	FINAL
SAMPLE LENGTH (in):	10.0	10.0
SAMPLE DIAMETER (in):	10.5	10.5
SAMPLE AREA (in^2):	86.59	86.59
SAMPLE AREA (cm^2):	558.64	558.64
SAMPLE VOLUME (in^3):	865.90	865.90
SAMPLE VOLUME (ft^3):	0.501	0.501
WET DENSITY IN (pcf):	93.7	93.7
DRY DENSITY IN (pcf):	93.7	93.7

INITIAL MOISTURE CONTENT

WET SAMPLE & TARE (g):		
DRY SAMPLE & TARE (g):		
WEIGHT OF TARE (g):		
WEIGHT OF WATER (g):		
DRY SAMPLE WEIGHT (g):		
MOISTURE CONTENT (%):		

AVERAGE FLOW RATE (ml/sec):	897.42	1074.29	
AVERAGE TEMP (°C):	27.5	27.5	
TEMPERATURE CORRECTION:	0.841	0.841	
HEAD OF WATER (mm):	13.0	15.0	
HEAD OF WATER (in):	0.5	0.6	
HYDRAULIC GRADIENT (i):	0.05	0.06	
Velocity (cm/sec)	1.61	1.92	
Permeability @ 20°C(cm/sec) =	26.4	27.4	

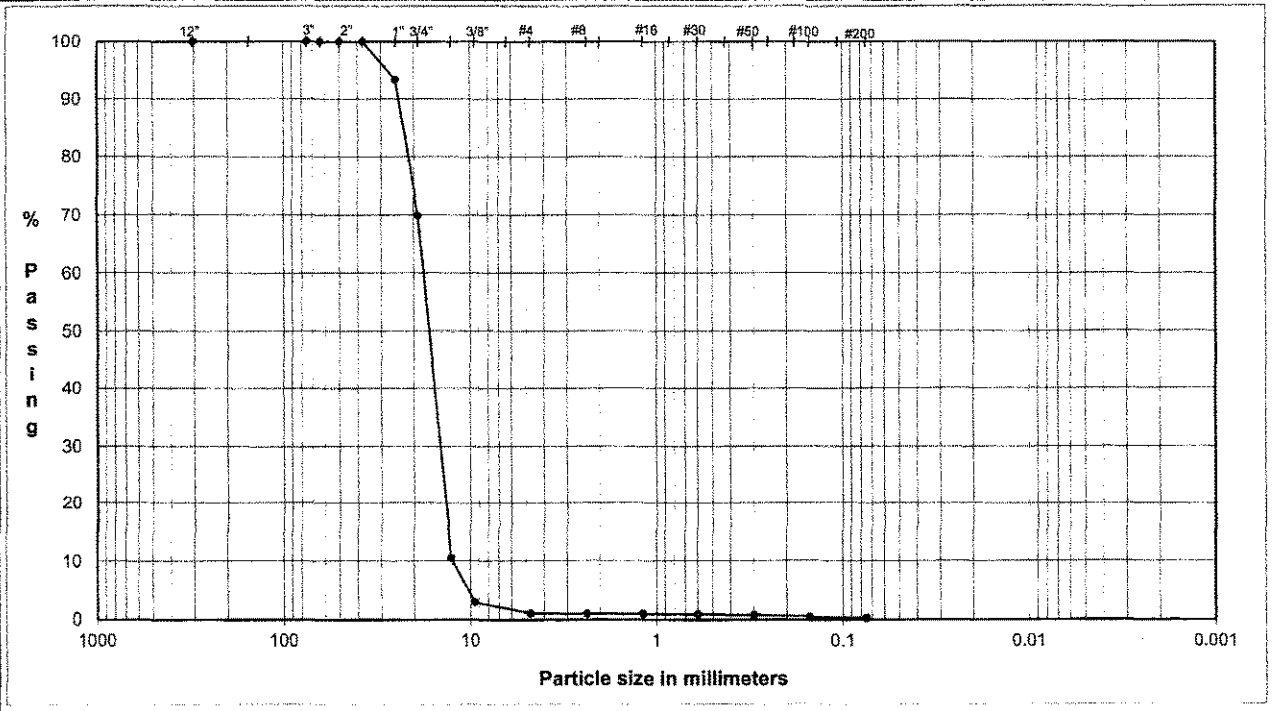


TECH	WD
DATE	6/2/17
CHECK	DA
REVIEW	TWM
APPROVE	

PARTICLE SIZE DISTRIBUTION

ASTM C117, C136

PROJECT NAME: **GTS/VISTA LF-CELL 5/FL**
SAMPLE ID: **S-2** - Depth: -
TYPE: **Bulk**



COBBLES	GRAVEL		SAND			FINES
	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay

U.S. Standard Sieves Sizes and Numbers

	Particle Size (mm)	% Passing	Particle Size Classification	Percentage
12.0"	304.8	**100.0**		
3.0"	75	**100.0**	Cobbles	**0.0**
2.5"	63.5	**100.0**		
2.0"	50	**100.0**		
1.5"	37.5	**100.0**		
1.0"	25	**93.3**		
0.75"	19	**69.9**	Coarse Gravel	**30.1**
0.50"	12.7	**10.5**		
0.375"	9.5	**2.9**		
#4	4.75	**1.0**	Fine Gravel	**68.9**
#8	2.36	**0.9**	Coarse Sand	**0.1**
#16	1.18	**0.9**		
#30	0.60	**0.8**	Medium Sand	**0.2**
#50	0.30	**0.7**		
#100	0.15	**0.4**		
#200	0.075	**0.2**	Fine Sand	**0.5**
			Fines	**0.2**

D_{60}= 17.76	D_{30}= 14.49	D_{10}= 12.45
Cu = D60/D10 =	**1.4**	< 4
Cc = D30^2/(D10*D60) =	**0.9**	< 1

DESCRIPTION: GRAVEL, fine to coarse; trace sand, trace fines; light gray.

USCS: GP

M_c

TECH	FM
DATE	5/31/17
CHECK	DH
REVIEW	MM
APPROVE	

CARBONATE CONTENT
ASTM D 3042 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL
PROJECT NUMBER	1775013.02
SAMPLE ID	S-2

Residue +Tare weight (g)	770.62	746.72	801.18
Tare Weight (g)	82.47	80.09	82.22
Residue weight (g)	688.15	666.63	718.96

After Acid Application and Wash

Residue + Tare weight (g)	770.12	746.40	800.64
Residue weight (g)	687.65	666.31	718.42
Carbonate Content (%)	0.1	0.0	0.1

Average Carbonate Content (%) **0.1**

REMARKS

SAMPLE DESCRIPTION GRAVEL, fine to coarse; trace sand, trace fines; light gray.

USCS GP

MODIFIED: Only the Plus No.200 Size material used in the test.

TECH	**FT/WD**
DATE	**5/31/17**
CHECK	DA
REVIEW	JWH
APPROVE	

CONSTANT HEAD PERMEABILITY TEST
ASTM D 2434 - MODIFIED

PROJECT TITLE	GTS/VISTA LF-CELL 5/FL	**SAMPLE ID**	S-2
PROJECT NUMBER	1775013.02	**SAMPLE TYPE**	Bulk
REMARKS	-	**SAMPLE DEPTH**	-

		TIME IN SECONDS	VOLUME (ml)	TEMP. °C	Flow Rate (ml/sec)	
Gradient -1	1.	13.00	7570	27.5	582.31	*
	2.	12.78	7570	27.5	592.33	*
	3.	12.88	7570	27.5	587.73	*
				27.5		
Gradient -2	1.	10.28	7570	27.5	736.38	*
	2.	10.19	7570	27.5	742.89	*
	3.	10.28	7570	27.5	736.38	*
				27.5		
Gradient -3	1.	9.31	7570	27.5	813.10	*
	2.	9.27	7570	27.5	816.61	*
	3.	9.40	7570	27.5	805.32	*

INITIAL UNIT WEIGHT DETERMINATION

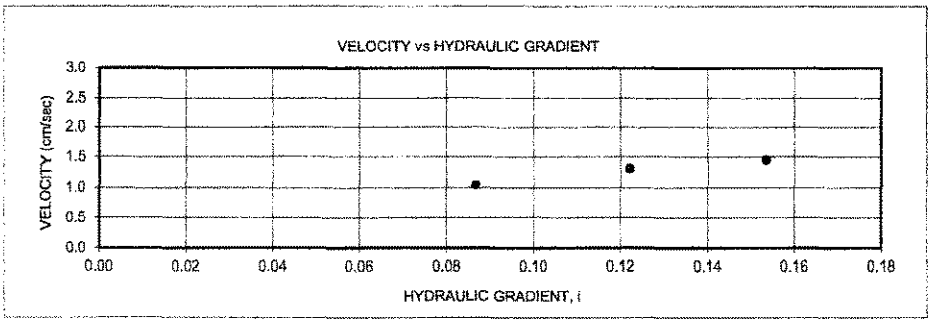
APPARATUS & WET SAMPLE (lbs):	42.8
APPARATUS & WET SAMPLE (g):	22610.0
APPARATUS WEIGHT (g):	0.0
WET SAMPLE WEIGHT (g):	22610.0

	INITIAL	FINAL
SAMPLE LENGTH (in):	10.0	10.0
SAMPLE DIAMETER (in):	10.5	10.5
SAMPLE AREA (in^2):	86.59	86.59
SAMPLE AREA (cm^2):	558.64	558.64
SAMPLE VOLUME (in^3):	865.90	865.90
SAMPLE VOLUME (ft^3):	0.501	0.501
WET DENSITY IN (pcf):	99.5	99.5
DRY DENSITY IN (pcf):	99.5	99.5

INITIAL MOISTURE CONTENT

WET SAMPLE & TARE (g):		
DRY SAMPLE & TARE (g):		
WEIGHT OF TARE (g):		
WEIGHT OF WATER (g):		
DRY SAMPLE WEIGHT (g):		
MOISTURE CONTENT (%):		

AVERAGE FLOW RATE (ml/sec):	587.46	738.55	811.68
AVERAGE TEMP (°C):	27.5	27.5	27.5
TEMPERATURE CORRECTION:	0.841	0.841	0.841
HEAD OF WATER (mm):	22.0	31.0	39.0
HEAD OF WATER (in):	0.9	1.2	1.5
HYDRAULIC GRADIENT (i):	0.09	0.12	0.15
Velocity (cm/sec)	1.05	1.32	1.45
Permeability @ 20°C(cm/sec) =	10.2	9.1	8.0



TECH	WD
DATE	6/2/17
CHECK	
REVIEW	
APPROVE	

A.5 SUBGRADE ACCEPTANCE FORMS

Certificate of Acceptance of Soil Subgrade

CEC

Owner: Waste Management Inc.

Project Name: Cell-5

Site Name: VistaLandfill

Location: Apopaka Fl

Date: 5-17-17

Installer: ESI

I the Undersigned, a duly authorized representative of ESI do hereby accept the Soil Subgrade surface covered by geomembrane panel(s) P-1 through P-40 as an acceptable surface on which to install geomembrane.

Mohammed Mulimar — Signature — Title

Name

5-17-17
Date

CEC's CQA certification acceptance by:

Tommy C Bradford — Signature — CQA monitor

Name

5-17-17
Date

Certificate of Acceptance of Soil Subgrade

CEC

Owner: Waste Management Inc.

Project Name: Cell-5

Site Name: VistaLandfill

Location: Apopaka Fl

Date: 5-18

Installer: ESI

I the Undersigned, a duly authorized representative of ESI do hereby accept the Soil Subgrade surface covered by geomembrane panel(s) P-41 through P-108 as an acceptable surface on which to install geomembrane.

Mohammed Meliman	[signature]	Supervisor
Name	Signature	Title

5-18-17
Date

CEC's CQA certification acceptance by:

Tommy C Bradford	[signature]	CQA Monitor
Name	Signature	Title

5-18-17
Date

CEC

Owner: Waste Management Inc.

Project Name: Cell-5

Site Name: VistaLandfill

Location: Apopaka Fl

Date: 5-19-17

Installer: ESI

I the Undersigned, a duly authorized representative of ESI do hereby accept the Soil Subgrade surface covered by geomembrane panel(s) P-109 through P-115 as an acceptable surface on which to install geomembrane.

Mohammed Malimar		Superviser
Name	Signature	Title

5-19-17
Date

CEC's CQA certification acceptance by:

Tommy C Bradford		CQA Monitor
Name	Signature	Title

5-19-17
Date

B. GEOSYNTHETIC PRECONSTRUCTION DATA

B.1 GEOMEMBRANE – TEXTURED

Inventory

CEC

Project Name: Cell-5 Date: 5-8-17

Client: Vista Landfill Material Type: 60 mil Liner

Project No.: 101.07.41 Manufacturer: AGRU

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		G17D001232	23'x520'		
		G17D001240	" "		
		G17D001245	" "		
		G17D001246	" "		
		G17D001247	" "		
		G17D001248	" "		
		G17D001251	" "		
		G17D001252	" "		
		G17D001253	" "		
		G17D001255	" "		
		G17D001256	" "		
		G17D001265	" "		

Totals: 12 Rolls 143,520 ft2

Notes: + 10 Spools of Welding Rod

BOL = 053789

CEC

Project Name: Cell-5 Date: 5-8-17

Client: Vista Landfill Material Type: 60 mil Liner

Project No.: 101.07.41 Manufacturer: AGRU

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		G17D001230	23' x 520'		
		G17D001234	" "		
		G17D001235	" "		
		G17D001236	" "		
		G17D001238	" "		
		G17D001239	" "		
		G17D001241	" "		
		G17D001243	" "		
		G17D001244	" "		
		G17D001260	" "		
		G17D001263	" "		
		G17D001269	" "		

Totals: 12 Rolls 143,520 ft²

Notes: + 10 Spools of Welding Rod

BOL = 053799

CEC

Project Name: Cell-5 Date: 5-9-17

Client: Vista Landfill Material Type: 60 mil Liner AGRU

Project No.: 101.07.41 Manufacturer:

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		G17D001233	23 x 520		
		G17D001237	" "		
		G17D001250	" "		
		G17D001254	" "		
		G17D001257	" "		
		G17D001258	" "		
		G17D001266	" "		
		G17D001267	" "		
		G17D001270	" "		

Totals: 9 Rolls 107,640 ft²

Notes: + 9 Rolls of Welding Rod

BOL - 054009

CEC

Project Name: Cell-5 Date: 5-9-17

Client: Vista Landfill Material Type: 60 mil Liner

Project No.: Manufacturer: AGRU

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		G17D001229	23 x 520		
		G17D001231	" "		
		G17D001242	" "		
		G17D001249	" "		
		G17D001259	" "		
		G17D001261	" "		
		G17D001262	" "		
		G17D001264	" "		

Totals: 8 Rolls 95,680 AT

Notes: + 8 Spools of Welding Rod

BOL = 054010

Manufacturer's Certifications

Cust: Waste Management-East
PO#: 11140064587 Vista LF cell 5
Dest: Apopka, FL

Doc#: 35670

41 rolls 60HD micro (520)

roll #	width	English length	area	check weld rod qty (if ordered)	wgt		resin lot #
	ft.	ft.	ft².		lbs.		
G17D001229	23	520	11,960	60HD micro 41tot 1	3902	1FT/2FT	HHC821270
G17D001230	23	520	11,960	60HD micro 41tot 2	3936		HHC821270
G17D001231	23	520	11,960	60HD micro 41tot 3	3918		HHC821270
G17D001232	23	520	11,960	60HD micro 41tot 4	3918		HHC821270
G17D001233	23	520	11,960	60HD micro 41tot 5	3916		HHC821270
G17D001234	23	520	11,960	60HD micro 41tot 6	3908		HHC821270
G17D001235	23	520	11,960	60HD micro 41tot 7	3926		HHC821270
G17D001236	23	520	11,960	60HD micro 41tot 8	3920		HHC821270
G17D001237	23	520	11,960	60HD micro 41tot 9	3930	*1FT	HHC821270
G17D001238	23	520	11,960	60HD micro 41tot 10	3904		HHC821270
G17D001239	23	520	11,960	60HD micro 41tot 11	3888		HHC821270
G17D001240	23	520	11,960	60HD micro 41tot 12	3876		HHC821270
G17D001241	23	520	11,960	60HD micro 41tot 13	3888		HHC821270
G17D001242	23	520	11,960	60HD micro 41tot 14	3898		HHC821270
G17D001243	23	520	11,960	60HD micro 41tot 15	3882		HHC821270
G17D001244	23	520	11,960	60HD micro 41tot 16	3868		HHC821270
G17D001245	23	520	11,960	60HD micro 41tot 17	3874	*1FT	HHC821270
G17D001246	23	520	11,960	60HD micro 41tot 18	3882		HHC821270
G17D001247	23	520	11,960	60HD micro 41tot 19	3882		HHC821270
G17D001248	23	520	11,960	60HD micro 41tot 20	3886		HHC821270
G17D001249	23	520	11,960	60HD micro 41tot 21	3884		HHC821270
G17D001250	23	520	11,960	60HD micro 41tot 22	3872		HHC821270
G17D001251	23	520	11,960	60HD micro 41tot 23	3870		HHC821270
G17D001252	23	520	11,960	60HD micro 41tot 24	3878		HHC821270
G17D001253	23	520	11,960	60HD micro 41tot 25	3874	*1FT	HHC821280
G17D001254	23	520	11,960	60HD micro 41tot 26	3870		HHC821280
G17D001255	23	520	11,960	60HD micro 41tot 27	3876		HHC821280
G17D001256	23	520	11,960	60HD micro 41tot 28	3880		HHC821280
G17D001257	23	520	11,960	60HD micro 41tot 29	3888		HHC821280
G17D001258	23	520	11,960	60HD micro 41tot 30	3888		HHC821280
G17D001259	23	520	11,960	60HD micro 41tot 31	3954		HHC821280
G17D001260	23	520	11,960	60HD micro 41tot 32	3966		HHC821280
G17D001261	23	520	11,960	60HD micro 41tot 33	3968	*1FT	HHD820280
G17D001262	23	520	11,960	60HD micro 41tot 34	3958		HHD820280
G17D001263	23	520	11,960	60HD micro 41tot 35	3966		HHD820280
G17D001264	23	520	11,960	60HD micro 41tot 36	3968		HHD820280
G17D001265	23	520	11,960	60HD micro 41tot 37	3966		HHD820280
G17D001266	23	520	11,960	60HD micro 41tot 38	3960		HHD820280
G17D001267	23	520	11,960	60HD micro 41tot 39	3968		HHD820280
G17D001269	23	520	11,960	60HD micro 41tot 40	3969		HHD820280
G17D001270	23	520	11,960	60HD micro 41tot 41	3970		HHD820280

Geomembrane - Conformance 1/100,000 sf, min 1/lot, Coupons will be fine.
In addition to the conformance samples, we will require an extra (ONE) 2 ft x roll width of EACH FINISHED PRODUCT for friction TRI UPS 2 day

490,360
total for order

agru america
quality control dept.

quality certificate

ROLL #: G17D001229 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**55** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.94** mm	**37** mil
		Bottom			**.97** mm	**38** mil
Specific Gravity ASTM D792	Average Density					**.948** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**36** N/mm	**206** ppi		**3428** psi
		TD	**39** N/mm	**223** ppi		**3719** psi
	Average Strength @ Break	MD	**40** N/mm	**226** ppi		**3762** psi
		TD	**43** N/mm	**247** ppi		**4120** 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				**417** %
		TD				**554** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**306.9** N	**69** lbs.
		TD			**280.2** N	**63** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**591.6** N	**133** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**71** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/17/2017** OA#: **35670**

Signature: _____

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Quality Control Department

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ROLL #: G17D001230 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.89** mm	**35** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.948** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**36** N/mm	**206** ppi	**3428** psi	
		TD	**39** N/mm	**223** ppi	**3719** psi	
	Average Strength @ Break	MD	**40** N/mm	**226** ppi	**3762** psi	
		TD	**43** N/mm	**247** ppi	**4120** 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			**417** %	
		TD			**554** %	
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**306.9** N	**69** lbs.	
		TD		**280.2** N	**63** lbs.	
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**591.6** N	**133** lbs.	
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs.	**ONGOING**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				**-0.78** %	
Smooth Edge ASTM D1004	Average Tear				**71** lbs.	

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/17/2017** OA#: **35670**

Signature: _____

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Quality Control Department

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ROLL #: G17D001231 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**59** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.84** mm	**33** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.948** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**36** N/mm	**206** ppi		**3428** psi
		TD	**39** N/mm	**223** ppi		**3719** psi
	Average Strength @ Break	MD	**40** N/mm	**226** ppi		**3762** psi
		TD	**43** N/mm	**247** ppi		**4120** 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				**417** %
		TD				**554** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**306.9** N	**69** lbs.
		TD			**280.2** N	**63** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**591.6** N	**133** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**71** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/17/2017** OA#: **35670**

Signature: _____

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ROLL #: G17D001232 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.79** mm	**31** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**37** N/mm	**214** ppi		**3567** psi
		TD	**40** N/mm	**226** ppi		**3760** psi
	Average Strength @ Break	MD	**42** N/mm	**239** ppi		**3980** psi
		TD	**42** N/mm	**240** ppi		**4003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**18** %
		TD				**14** %
	Average Elongation @Break	MD				**427** %
		TD				**523** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**231.3** N	**52** lbs.
		TD			**226.8** N	**51** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**609.4** N	**137** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**56** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/17/2017** OA#: **35670**

Signature: _____

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Quality Control Department

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ROLL #: G17D001233 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**59** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**37** N/mm	**214** ppi		**3567** psi
		TD	**40** N/mm	**226** ppi		**3760** psi
	Average Strength @ Break	MD	**42** N/mm	**239** ppi		**3980** psi
		TD	**42** N/mm	**240** ppi		**4003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**18** %
		TD				**14** %
	Average Elongation @Break	MD				**427** %
		TD				**523** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**231.3** N	**52** lbs.
		TD			**226.8** N	**51** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**609.4** N	**137** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**56** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/17/2017** OA#: **35670**

Signature: _____

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Quality Control Department

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ROLL #: G17D001234 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.89** mm	**35** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**37** N/mm	**214** ppi		**3567** psi
		TD	**40** N/mm	**226** ppi		**3760** psi
	Average Strength @ Break	MD	**42** N/mm	**239** ppi		**3980** psi
		TD	**42** N/mm	**240** ppi		**4003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**18** %
		TD				**14** %
	Average Elongation @Break	MD				**427** %
		TD				**523** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**231.3** N	**52** lbs.
		TD			**226.8** N	**51** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**609.4** N	**137** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**56** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/17/2017** OA#: **35670**

Signature: _____

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Quality Control Department

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ROLL #: G17D001235 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**37** N/mm	**214** ppi		**3567** psi
		TD	**40** N/mm	**226** ppi		**3760** psi
	Average Strength @ Break	MD	**42** N/mm	**239** ppi		**3980** psi
		TD	**42** N/mm	**240** ppi		**4003** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**18** %
		TD				**14** %
	Average Elongation @Break	MD				**427** %
		TD				**523** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**231.3** N	**52** lbs.
		TD			**226.8** N	**51** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**609.4** N	**137** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**56** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

Signature: _____

Maria Coffey
Quality Control Department

agru america
quality control dept.

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ROLL #: G17D001236 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.6** mm	**62** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.81** mm	**32** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**37** N/mm	**213** ppi		**3545** psi
		TD	**38** N/mm	**218** ppi		**3640** psi
	Average Strength @ Break	MD	**41** N/mm	**236** ppi		**3929** psi
		TD	**39** N/mm	**223** ppi		**3719** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**412** %
		TD				**491** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**329.2** N	**74** lbs.
		TD			**298.0** N	**67** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**627.2** N	**141** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**75** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

Signature: _____

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ROLL #: G17D001237 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**37** N/mm	**213** ppi		**3545** psi
		TD	**38** N/mm	**218** ppi		**3640** psi
	Average Strength @ Break	MD	**41** N/mm	**236** ppi		**3929** psi
		TD	**39** N/mm	**223** ppi		**3719** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**412** %
		TD				**491** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**329.2** N	**74** lbs.
		TD			**298.0** N	**67** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**627.2** N	**141** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**75** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

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ROLL #: G17D001238 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**62** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.76** mm	**30** mil
		Bottom			**.84** mm	**33** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**37** N/mm	**213** ppi		**3545** psi
		TD	**38** N/mm	**218** ppi		**3640** psi
	Average Strength @ Break	MD	**41** N/mm	**236** ppi		**3929** psi
		TD	**39** N/mm	**223** ppi		**3719** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**412** %
		TD				**491** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**329.2** N	**74** lbs.
		TD			**298.0** N	**67** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**627.2** N	**141** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**75** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

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ROLL #: G17D001239 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.89** mm	**35** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**37** N/mm	**213** ppi		**3545** psi
		TD	**38** N/mm	**218** ppi		**3640** psi
	Average Strength @ Break	MD	**41** N/mm	**236** ppi		**3929** psi
		TD	**39** N/mm	**223** ppi		**3719** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**412** %
		TD				**491** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**329.2** N	**74** lbs.
		TD			**298.0** N	**67** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**627.2** N	**141** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**75** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

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ROLL #: G17D001240 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.84** mm	**33** mil
		Bottom			**.94** mm	**37** mil
Specific Gravity ASTM D792	Average Density					**.944** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**36** N/mm	**207** ppi		**3454** psi
		TD	**38** N/mm	**215** ppi		**3579** psi
	Average Strength @ Break	MD	**44** N/mm	**249** ppi		**4155** psi
		TD	**40** N/mm	**231** ppi		**3850** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**20** %
		TD				**14** %
	Average Elongation @Break	MD				**437** %
		TD				**540** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**324.7** N	**73** lbs.
		TD			**306.9** N	**69** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**613.8** N	**138** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**77** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

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ROLL #: G17D001241 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.84** mm	**33** mil
Specific Gravity ASTM D792	Average Density					**.944** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**36** N/mm	**207** ppi		**3454** psi
		TD	**38** N/mm	**215** ppi		**3579** psi
	Average Strength @ Break	MD	**44** N/mm	**249** ppi		**4155** psi
		TD	**40** N/mm	**231** ppi		**3850** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**20** %
		TD				**14** %
	Average Elongation @Break	MD				**437** %
		TD				**540** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**324.7** N	**73** lbs.
		TD			**306.9** N	**69** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**613.8** N	**138** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**77** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

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ROLL #: G17D001242 **LOT #:** HHC821270 **LINER TYPE:** 60 HD MICROSPIKE

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**62** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.84** mm	**33** mil
		Bottom			**.94** mm	**37** mil
Specific Gravity ASTM D792	Average Density					**.944** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**36** N/mm	**207** ppi		**3454** psi
		TD	**38** N/mm	**215** ppi		**3579** psi
	Average Strength @ Break	MD	**44** N/mm	**249** ppi		**4155** psi
		TD	**40** N/mm	**231** ppi		**3850** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**20** %
		TD				**14** %
	Average Elongation @Break	MD				**437** %
		TD				**540** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**324.7** N	**73** lbs.
		TD			**306.9** N	**69** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**613.8** N	**138** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**77** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

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ROLL #: G17D001243 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**56** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**62** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.91** mm	**36** mil
		Bottom			**.86** mm	**34** mil
Specific Gravity ASTM D792	Average Density					**.944** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
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	**36** N/mm	**207** ppi		**3454** psi
		TD	**38** N/mm	**215** ppi		**3579** psi
	Average Strength @ Break	MD	**44** N/mm	**249** ppi		**4155** psi
		TD	**40** N/mm	**231** ppi		**3850** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**20** %
		TD				**14** %
	Average Elongation @Break	MD				**437** %
		TD				**540** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**324.7** N	**73** lbs.
		TD			**306.9** N	**69** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**613.8** N	**138** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**77** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

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ROLL #: G17D001244 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**62** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**37** N/mm	**212** ppi		**3534** psi
		TD	**38** N/mm	**219** ppi		**3654** psi
	Average Strength @ Break	MD	**43** N/mm	**247** ppi		**4122** psi
		TD	**41** N/mm	**232** ppi		**3862** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**438** %
		TD				**519** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**346.9** N	**78** lbs.
		TD			**320.3** N	**72** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**622.7** N	**140** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

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ROLL #: G17D001245 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**37** N/mm	**212** ppi		**3534** psi
		TD	**38** N/mm	**219** ppi		**3654** psi
	Average Strength @ Break	MD	**43** N/mm	**247** ppi		**4122** psi
		TD	**41** N/mm	**232** ppi		**3862** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**438** %
		TD				**519** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**346.9** N	**78** lbs.
		TD			**320.3** N	**72** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**622.7** N	**140** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

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ROLL #: G17D001246 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**59** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**37** N/mm	**212** ppi		**3534** psi
		TD	**38** N/mm	**219** ppi		**3654** psi
	Average Strength @ Break	MD	**43** N/mm	**247** ppi		**4122** psi
		TD	**41** N/mm	**232** ppi		**3862** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**438** %
		TD				**519** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**346.9** N	**78** lbs.
		TD			**320.3** N	**72** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**622.7** N	**140** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

Signature: _____

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ROLL #: G17D001247 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.6** mm	**62** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.84** mm	**33** mil
		Bottom			**.94** mm	**37** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**37** N/mm	**212** ppi		**3534** psi
		TD	**38** N/mm	**219** ppi		**3654** psi
	Average Strength @ Break	MD	**43** N/mm	**247** ppi		**4122** psi
		TD	**41** N/mm	**232** ppi		**3862** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**438** %
		TD				**519** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**346.9** N	**78** lbs.
		TD			**320.3** N	**72** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**622.7** N	**140** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/18/2017** OA#: **35670**

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ROLL #: G17D001248 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2506** psi
		TD	**27** N/mm	**156** ppi		**2607** psi
	Average Strength @ Break	MD	**32** N/mm	**186** ppi		**3092** psi
		TD	**29** N/mm	**167** ppi		**2777** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**15** %
		TD				**14** %
	Average Elongation @Break	MD				**428** %
		TD				**503** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**253.5** N	**57** lbs.
		TD			**235.7** N	**53** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**604.9** N	**136** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**56** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

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ROLL #: G17D001249 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**56** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**62** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895							**196** minutes
Asperity ASTM D7466	Average	Top				**.84** mm	**33** mil
		Bottom				**.86** mm	**34** mil
Specific Gravity ASTM D792	Average Density						**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min						**.21**
Carbon Black Content ASTM D4218	Range						**2.4** %
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	**2506** psi		
		TD	**27** N/mm	**156** ppi	**2607** psi		
	Average Strength @ Break	MD	**32** N/mm	**186** ppi	**3092** psi		
		TD	**29** N/mm	**167** ppi	**2777** psi		
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**15** %	
		TD				**14** %	
	Average Elongation @Break	MD				**428** %	
		TD				**503** %	
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**253.5** N		**57** lbs.	
		TD		**235.7** N		**53** lbs.	
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N		**136** lbs.	
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs.		**ONGOING**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %	
Smooth Edge ASTM D1004	Average Tear					**56** lbs.	

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001250 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.81** mm	**32** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2506** psi
		TD	**27** N/mm	**156** ppi		**2607** psi
	Average Strength @ Break	MD	**32** N/mm	**186** ppi		**3092** psi
		TD	**29** N/mm	**167** ppi		**2777** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**15** %
		TD				**14** %
	Average Elongation @Break	MD				**428** %
		TD				**503** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**253.5** N	**57** lbs.
		TD			**235.7** N	**53** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**604.9** N	**136** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**56** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001251 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**56** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.81** mm	**32** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2506** psi
		TD	**27** N/mm	**156** ppi		**2607** psi
	Average Strength @ Break	MD	**32** N/mm	**186** ppi		**3092** psi
		TD	**29** N/mm	**167** ppi		**2777** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**15** %
		TD				**14** %
	Average Elongation @Break	MD				**428** %
		TD				**503** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**253.5** N	**57** lbs.
		TD			**235.7** N	**53** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**604.9** N	**136** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**56** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001252 **LOT #:** HHC821270 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.6** mm	**62** mil	Width:	**7.01** m	**23** feet

OIT(Standard) ASTM D 3895						**196** minutes
Asperity ASTM D7466	Average	Top			**.89** mm	**35** mil
		Bottom			**.81** mm	**32** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.21**
Carbon Black Content ASTM D4218	Range					**2.5** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**138** ppi		**2302** psi
		TD	**25** N/mm	**141** ppi		**2355** psi
	Average Strength @ Break	MD	**32** N/mm	**185** ppi		**3079** psi
		TD	**29** N/mm	**168** ppi		**2807** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**467** %
		TD				**539** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**329.2** N	**74** lbs.
		TD			**289.1** N	**65** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**604.9** N	**136** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.78** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001253 **LOT #:** HHC821280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**56** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**195** minutes
Asperity ASTM D7466	Average	Top			**.79** mm	**31** mil
		Bottom			**.86** mm	**34** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.20**
Carbon Black Content ASTM D4218	Range					**2.5** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**138** ppi		**2302** psi
		TD	**25** N/mm	**141** ppi		**2355** psi
	Average Strength @ Break	MD	**32** N/mm	**185** ppi		**3079** psi
		TD	**29** N/mm	**168** ppi		**2807** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**467** %
		TD				**539** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**329.2** N	**74** lbs.
		TD			**289.1** N	**65** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**604.9** N	**136** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.42** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001254 **LOT #:** HHC821280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**195** minutes
Asperity ASTM D7466	Average	Top			**.84** mm	**33** mil
		Bottom			**.84** mm	**33** mil
Specific Gravity ASTM D792	Average Density					**.944** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.20**
Carbon Black Content ASTM D4218	Range					**2.5** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**138** ppi		**2302** psi
		TD	**25** N/mm	**141** ppi		**2355** psi
	Average Strength @ Break	MD	**32** N/mm	**185** ppi		**3079** psi
		TD	**29** N/mm	**168** ppi		**2807** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**19** %
		TD				**14** %
	Average Elongation @Break	MD				**467** %
		TD				**539** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**329.2** N	**74** lbs.
		TD			**289.1** N	**65** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**604.9** N	**136** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.42** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001255 **LOT #:** HHC821280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**195** minutes
Asperity ASTM D7466	Average	Top			**.81** mm	**32** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.944** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.20**
Carbon Black Content ASTM D4218	Range					**2.5** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**24** N/mm	**138** ppi	**2302** psi	
		TD	**25** N/mm	**141** ppi	**2355** psi	
	Average Strength @ Break	MD	**32** N/mm	**185** ppi	**3079** psi	
		TD	**29** N/mm	**168** ppi	**2807** psi	
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			**19** %	
		TD			**14** %	
	Average Elongation @Break	MD			**467** %	
		TD			**539** %	
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**329.2** N	**74** lbs.	
		TD		**289.1** N	**65** lbs.	
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N	**136** lbs.	
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs.	**ONGOING**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				**-0.42** %	
Smooth Edge ASTM D1004	Average Tear				**74** lbs.	

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001256 **LOT #:** HHC821280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**195** minutes
Asperity ASTM D7466	Average	Top			**.81** mm	**32** mil
		Bottom			**.86** mm	**34** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.20**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**32** N/mm	**185** ppi	**3079** psi	
		TD	**37** N/mm	**210** ppi	**3494** psi	
	Average Strength @ Break	MD	**42** N/mm	**239** ppi	**3983** psi	
		TD	**45** N/mm	**260** ppi	**4327** psi	
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			**25** %	
		TD			**16** %	
	Average Elongation @Break	MD			**468** %	
		TD			**623** %	
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**329.2** N	**74** lbs.	
		TD		**289.1** N	**65** lbs.	
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N	**136** lbs.	
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs.	**ONGOING**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				**-0.42** %	
Smooth Edge ASTM D1004	Average Tear				**71** lbs.	

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001257 **LOT #:** HHC821280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**195** minutes
Asperity ASTM D7466	Average	Top			**.79** mm	**31** mil
		Bottom			**.81** mm	**32** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.20**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**32** N/mm	**185** ppi		**3079** psi
		TD	**37** N/mm	**210** ppi		**3494** psi
	Average Strength @ Break	MD	**42** N/mm	**239** ppi		**3983** psi
		TD	**45** N/mm	**260** ppi		**4327** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**25** %
		TD				**16** %
	Average Elongation @Break	MD				**468** %
		TD				**623** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**329.2** N	**74** lbs.
		TD			**289.1** N	**65** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**604.9** N	**136** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.42** %
Smooth Edge ASTM D1004	Average Tear					**71** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

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ROLL #: G17D001258 **LOT #:** HHC821280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**56** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**195** minutes
Asperity ASTM D7466	Average	Top			**.91** mm	**36** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.20**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**32** N/mm	**185** ppi	**3079** psi	
		TD	**37** N/mm	**210** ppi	**3494** psi	
	Average Strength @ Break	MD	**42** N/mm	**239** ppi	**3983** psi	
		TD	**45** N/mm	**260** ppi	**4327** psi	
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			**25** %	
		TD			**16** %	
	Average Elongation @Break	MD			**468** %	
		TD			**623** %	
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**329.2** N	**74** lbs.	
		TD		**289.1** N	**65** lbs.	
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N	**136** lbs.	
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs.	**ONGOING**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				**-0.42** %	
Smooth Edge ASTM D1004	Average Tear				**71** lbs.	

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

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ROLL #: G17D001259 **LOT #:** HHC821280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**56** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**195** minutes
Asperity ASTM D7466	Average	Top			**.89** mm	**35** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.20**
Carbon Black Content ASTM D4218	Range					**2.4** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**32** N/mm	**185** ppi	**3079** psi	
		TD	**37** N/mm	**210** ppi	**3494** psi	
	Average Strength @ Break	MD	**42** N/mm	**239** ppi	**3983** psi	
		TD	**45** N/mm	**260** ppi	**4327** psi	
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD			**25** %	
		TD			**16** %	
	Average Elongation @Break	MD			**468** %	
		TD			**623** %	
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD		**329.2** N	**74** lbs.	
		TD		**289.1** N	**65** lbs.	
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load			**604.9** N	**136** lbs.	
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%			500 Hrs.	**ONGOING**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change				**-0.42** %	
Smooth Edge ASTM D1004	Average Tear				**71** lbs.	

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001260 **LOT #:** HHC821280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**56** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**195** minutes
Asperity ASTM D7466	Average	Top			**.76** mm	**30** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.946** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.20**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2406** psi
		TD	**28** N/mm	**161** ppi		**2676** psi
	Average Strength @ Break	MD	**32** N/mm	**181** ppi		**3018** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**18** %
		TD				**14** %
	Average Elongation @Break	MD				**427** %
		TD				**489** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**315.8** N	**71** lbs.
		TD			**298.0** N	**67** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**600.5** N	**135** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.42** %
Smooth Edge ASTM D1004	Average Tear					**73** lbs.

Customer: Waste Management-East
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Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001261 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**56** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.76** mm	**30** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2406** psi
		TD	**28** N/mm	**161** ppi		**2676** psi
	Average Strength @ Break	MD	**32** N/mm	**181** ppi		**3018** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**18** %
		TD				**14** %
	Average Elongation @Break	MD				**427** %
		TD				**489** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**315.8** N	**71** lbs.
		TD			**298.0** N	**67** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**600.5** N	**135** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**73** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/19/2017** OA#: **35670**

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ROLL #: G17D001262 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**68** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.6** mm	**62** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.84** mm	**33** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2406** psi
		TD	**28** N/mm	**161** ppi		**2676** psi
	Average Strength @ Break	MD	**32** N/mm	**181** ppi		**3018** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**18** %
		TD				**14** %
	Average Elongation @Break	MD				**427** %
		TD				**489** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**315.8** N	**71** lbs.
		TD			**298.0** N	**67** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**600.5** N	**135** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**73** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/20/2017** OA#: **35670**

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ROLL #: G17D001263 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2406** psi
		TD	**28** N/mm	**161** ppi		**2676** psi
	Average Strength @ Break	MD	**32** N/mm	**181** ppi		**3018** psi
		TD	**29** N/mm	**165** ppi		**2753** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**18** %
		TD				**14** %
	Average Elongation @Break	MD				**427** %
		TD				**489** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**315.8** N	**71** lbs.
		TD			**298.0** N	**67** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**600.5** N	**135** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**73** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/20/2017** OA#: **35670**

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ROLL #: G17D001264 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**59** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.76** mm	**30** mil
		Bottom			**.89** mm	**35** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2570** psi
		TD	**28** N/mm	**162** ppi		**2701** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi		**3313** psi
		TD	**31** N/mm	**178** ppi		**2966** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**17** %
		TD				**13** %
	Average Elongation @Break	MD				**451** %
		TD				**532** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**280.2** N	**63** lbs.
		TD			**249.1** N	**56** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**609.4** N	**137** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**61** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/20/2017** OA#: **35670**

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ROLL #: G17D001265 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**55** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**65** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.79** mm	**31** mil
		Bottom			**.99** mm	**39** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2570** psi
		TD	**28** N/mm	**162** ppi		**2701** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi		**3313** psi
		TD	**31** N/mm	**178** ppi		**2966** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**17** %
		TD				**13** %
	Average Elongation @Break	MD				**451** %
		TD				**532** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**280.2** N	**63** lbs.
		TD			**249.1** N	**56** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**609.4** N	**137** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**61** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/20/2017** OA#: **35670**

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ROLL #: G17D001266 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.4** mm	**57** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.76** mm	**30** mil
		Bottom			**1.02** mm	**40** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2570** psi
		TD	**28** N/mm	**162** ppi		**2701** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi		**3313** psi
		TD	**31** N/mm	**178** ppi		**2966** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**17** %
		TD				**13** %
	Average Elongation @Break	MD				**451** %
		TD				**532** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**280.2** N	**63** lbs.
		TD			**249.1** N	**56** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**609.4** N	**137** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**61** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/20/2017** OA#: **35670**

Signature: _____

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ROLL #: G17D001267 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**64** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**61** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.79** mm	**31** mil
		Bottom			**1.04** mm	**41** mil
Specific Gravity ASTM D792	Average Density					**.945** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.4** %
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		**2570** psi
		TD	**28** N/mm	**162** ppi		**2701** psi
	Average Strength @ Break	MD	**35** N/mm	**199** ppi		**3313** psi
		TD	**31** N/mm	**178** ppi		**2966** psi
Tensile Elongation ASTM D6693 (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	MD				**17** %
		TD				**13** %
	Average Elongation @Break	MD				**451** %
		TD				**532** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**280.2** N	**63** lbs.
		TD			**249.1** N	**56** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**609.4** N	**137** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**61** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/20/2017** OA#: **35670**

Signature: _____

Maria Coffey
Quality Control Department

agru america
quality control dept.

quality certificate

ROLL #: G17D001269 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.6** mm	**63** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.5** mm	**60** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.84** mm	**33** mil
		Bottom			**.86** mm	**34** mil
Specific Gravity ASTM D792	Average Density					**.943** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.5** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**37** N/mm	**211** ppi		**3510** psi
		TD	**39** N/mm	**223** ppi		**3720** psi
	Average Strength @ Break	MD	**44** N/mm	**253** ppi		**4217** psi
		TD	**42** N/mm	**241** ppi		**4015** 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				**445** %
		TD				**523** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**324.7** N	**73** lbs.
		TD			**324.7** N	**73** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**578.2** N	**130** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/20/2017** OA#: **35670**

Signature: _____

Maria Coffey
Quality Control Department

agru america
quality control dept.

quality certificate

ROLL #: G17D001270 **LOT #:** HHD820280 **LINER TYPE:** **60 HD MICROSPIKE**

		METRIC	ENGLISH		METRIC	ENGLISH
Thickness Measurement ASTM D5994 (Modified)	MIN:	**1.5** mm	**58** mil	Thickness:	**1.52** mm	**60** mil
	MAX:	**1.7** mm	**66** mil	Length:	**158.498** m	**520** feet
	AVE:	**1.6** mm	**62** mil	Width:	**7.01** m	**23** feet
OIT(Standard) ASTM D 3895						**181** minutes
Asperity ASTM D7466	Average	Top			**.86** mm	**34** mil
		Bottom			**.91** mm	**36** mil
Specific Gravity ASTM D792	Average Density					**.943** g/cc
MFI ASTM D1238 COND. E Grade: **K307**	Melt Flow Index 190C/2160 g - g/10 min					**.22**
Carbon Black Content ASTM D4218	Range					**2.5** %
Carbon Black Dispersion ASTM D5596	Category					**10 in Category 1**
Tensile Strength ASTM D6693 (2 inches / minute)	Average Strength @ Yield	MD	**37** N/mm	**211** ppi		**3510** psi
		TD	**39** N/mm	**223** ppi		**3720** psi
	Average Strength @ Break	MD	**44** N/mm	**253** ppi		**4217** psi
		TD	**42** N/mm	**241** ppi		**4015** 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				**445** %
		TD				**523** %
Tear Resistance ASTM D1004 (Modified)	Average Tear Resistance	MD			**324.7** N	**73** lbs.
		TD			**324.7** N	**73** lbs.
Puncture Resistance ASTM D4833 (Modified)	Average Peak Load				**578.2** N	**130** lbs.
Notched Constant Tensile Load ASTM D5397	Pass/Fail @ 30%				500 Hrs.	**ONGOING**
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional Change					**-0.47** %
Smooth Edge ASTM D1004	Average Tear					**74** lbs.

Customer: Waste Management-East
PO: 11140064587 Vista LF cell 5
Destination: Apopka, FL

Production Date: **4/20/2017** OA#: **35670**

Signature: _____

Maria Coffey
Quality Control Department

CoA Date: 04/01/2017

Certificate of Analysis

Shipped To: AGRU AMERICA INC:GEORGETOWN
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

Delivery #: 89439745
PO #: 011260
Weight: 189900 LB
Ship Date: 04/01/2017
Package: BULK
Mode: Hopper Car
Car #: MBKX170042
Seal No: 75561

Product:
MARLEX K307 POLYETHYLENE in Bulk

Lot Number: HHC821270

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.21	g/10mi
HLMI Flow Rate	ASTM D1238	19	g/10mi
Density	D1505	0.937	g/cm3
Pellet Count	P02.08.03	29	pel/g
Production Date		03/29/2017	

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: 04/01/2017

Certificate of Analysis

Shipped To: AGRU AMERICA INC:GEORGETOWN
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

Delivery #: 89439746
PO #: 011329
Weight: 188400 LB
Ship Date: 04/01/2017
Package: BULK
Mode: Hopper Car
Car #: PSPX002125
Seal No: 75115

Product:
MARLEX K307 POLYETHYLENE in Bulk

Lot Number: HHC821280

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.20	g/10mi
HLMI Flow Rate	ASTM D1238	19	g/10mi
Density	D1505	0.938	g/cm3
Pellet Count	P02.08.03	28	pel/g
Production Date		03/29/2017	

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: 04/13/2017

Certificate of Analysis

Shipped To: AGRU AMERICA INC:GEORGETOWN
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

Delivery #: 89447242
PO #: 011329
Weight: 48,000 LB (est.)
Ship Date: 04/19/2017
Package: BULK
Mode: Hopper Truck

Product:
MARLEX K307 POLYETHYLENE in Bulk

Lot Number: HHD820280

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.22	g/10mi
HLMI Flow Rate	ASTM D1238	21	g/10mi
Density	D1505	0.937	g/cm3
Pellet Count	P02.08.03	28	pel/g
Production Date		04/12/2017	

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 +1832813

Yingying Lu, Ph.D., Geomembrane Technical Service & Applications Development
Highways 60 & 123, Bartlesville Research and Technology Center, Room 149 PTC
Bartlesville, OK 74003
■ *918-977-6894* ■ *luyy@cpchem.com* ■ *Fax: 918-977-7599* ■ *www.cpchem.com*

June 17, 2015

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 black sheet samples that you provided to us recently. These tests were performed by CPChem's Materials Evaluation Laboratory in Bartlesville, OK. The tests were completed June 2015.

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 90 Days (min)	% HP-OIT Retained after Oven Aging 90 Days	GRI-GM13 and GRI-GM17% Retained Requirement (Oven Aging 90 Days)
60 mil HDPE Roll # G14F514045 from Marlex® K307 Polyethylene Lot # H71-4-1337	1066	883	**83**	**80**
40 mil LLDPE Roll # G14C243027 from Marlex® 7104 Polyethylene Lot # CEC810320	512	422	**82**	**60**

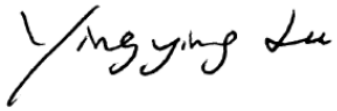
UV-Aging Results

Sample	Initial HP-OIT (min)	HP-OIT Value after UV Aging (min)	% HP-OIT Retained	GRI-GM13 and GRI-GM17 % Retained Requirement
60 mil HDPE Roll # G14F514045 from Marlex® K307 Polyethylene Lot # H71-4-1337	1066	930	**87**	**50**
40 mil LLDPE Roll # G14C243027 from Marlex® 7104 Polyethylene Lot # CEC810320	512	351	**69**	**35**

According to these test results, the durability requirements are met.

If you have any questions, please call me at 918-977-6894.

Sincerely,



Yingying Lu, Ph. D.

Polyethylene Technical 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).***

Conformance Tests

April 28, 2017

Mail To:

Sheree Grant
Waste Management, Inc.

email: sgrant@wm.com
email: pwalls@cecenv.com

Bill To:

<= Same (P.O. # 1114007819)

Dear Ms. Grant:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	**Vista Cell 5**
TRI Job Reference Number:	28335
Material(s) Tested:	Two, Agru 60 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density (ASTM D 1505) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

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

GEOMEMBRANE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: G17D001253
TRI Log #: 28335

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	60	64	65	66	61	61	62	61	62	65	**63**	2	60 nom
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.944	0.944	0.944								**0.944**	0.000	0.94 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.40	2.37									**2.39**	0.02	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	149	149	153	147	153						**150**	3	126 min
TD Yield Strength (ppi)	161	163	157	151	165						**159**	6	126 min
MD Break Strength (ppi)	212	164	197	212	208						**199**	20	90 min
TD Break Strength (ppi)	198	180	183	192	184						**187**	7	90 min
MD Yield Elongation (%)	22	22	22	23	22						**22**	0	12 min
TD Yield Elongation (%)	15	16	16	17	16						**16**	1	12 min
MD Break Elongation (%)	485	399	428	469	453						**447**	34	100 min
TD Break Elongation (%)	577	530	546	555	511						**544**	25	100 min

MD Machine Direction TD Transverse Direction

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

GEOMEMBRANE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: G17D001261
TRI Log #: 28335

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	63	67	62	62	64	65	66	64	65	68	**64**	2	60 nom
											62	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.945	0.945	0.945								**0.945**	0.000	0.94 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.39	2.35									**2.37**	0.03	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	153	157	157	163	154						**157**	4	126 min
TD Yield Strength (ppi)	166	172	163	159	157						**163**	6	126 min
MD Break Strength (ppi)	217	192	218	201	212						**208**	11	90 min
TD Break Strength (ppi)	202	197	153	165	178						**179**	21	90 min
MD Yield Elongation (%)	25	23	23	25	23						**24**	1	12 min
TD Yield Elongation (%)	14	16	15	14	17						**15**	1	12 min
MD Break Elongation (%)	427	423	450	404	459						**433**	22	100 min
TD Break Elongation (%)	585	543	429	504	517						**516**	57	100 min

MD Machine Direction TD Transverse Direction

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TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

April 24, 2017

Mail To:

Sheree Grant
Waste Management, Inc.

email: sgrant@wm.com
email: pwalls@cecenv.com

Bill To:

<= Same (P.O. # 1114007819)

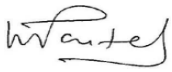
Dear Ms. Grant:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	**Vista Cell 5**
TRI Job Reference Number:	28262
Material(s) Tested:	Three, Agru 60 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density (ASTM D 1505) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,



Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

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

GEOMEMBRANE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: G17D001229
TRI Log #: 28262

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	67	64	61	61	61	61	64	64	62	66	**63**	2	60 nom
											61	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.945	0.945	0.945								**0.945**	0.000	0.94 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.33	2.38									**2.36**	0.04	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	144	138	155	154	138						**146**	8	126 min
TD Yield Strength (ppi)	168	150	156	168	154						**159**	8	126 min
MD Break Strength (ppi)	176	165	215	220	190						**193**	24	90 min
TD Break Strength (ppi)	194	173	145	180	183						**175**	18	90 min
MD Yield Elongation (%)	21	25	24	24	23						**23**	2	12 min
TD Yield Elongation (%)	17	18	17	17	16						**17**	1	12 min
MD Break Elongation (%)	438	440	453	465	446						**448**	11	100 min
TD Break Elongation (%)	595	555	421	539	577						**537**	68	100 min

MD Machine Direction TD Transverse Direction

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

GEOMEMBRANE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: G17D001237
TRI Log #: 28262

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	65	64	64	61	68	62	67	66	64	63	**64**	2	60 nom
											61	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.945	0.945	0.945								**0.945**	0.000	0.94 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.34	2.32									**2.33**	0.01	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	150	145	153	151	166						**153**	8	126 min
TD Yield Strength (ppi)	156	160	150	157	169						**158**	7	126 min
MD Break Strength (ppi)	176	168	203	222	223						**198**	26	90 min
TD Break Strength (ppi)	171	196	169	169	201						**181**	16	90 min
MD Yield Elongation (%)	19	21	24	23	24						**22**	2	12 min
TD Yield Elongation (%)	18	16	18	17	17						**17**	1	12 min
MD Break Elongation (%)	402	405	408	453	447						**423**	25	100 min
TD Break Elongation (%)	540	626	547	528	599						**568**	42	100 min

MD Machine Direction TD Transverse Direction

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

GEOMEMBRANE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: G17D001245
TRI Log #: 28262

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	61	64	64	67	65	65	63	67	64	60	**64**	2	60 nom
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.944	0.945	0.945								**0.945**	0.001	0.94 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.30	2.28									**2.29**	0.01	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	145	156	146	149	142						**148**	5	126 min
TD Yield Strength (ppi)	150	159	158	160	146						**155**	6	126 min
MD Break Strength (ppi)	155	179	216	219	167						**187**	29	90 min
TD Break Strength (ppi)	153	184	180	157	176						**170**	14	90 min
MD Yield Elongation (%)	21	22	23	22	22						**22**	1	12 min
TD Yield Elongation (%)	18	18	16	16	18						**17**	1	12 min
MD Break Elongation (%)	405	382	446	444	433						**422**	28	100 min
TD Break Elongation (%)	453	542	566	467	550						**516**	52	100 min

MD Machine Direction TD Transverse Direction

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TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

B.2 GEOTEXTILE – 8 Ounce

Inventory

CEC

Project Name: Cell-5 Date: 5-22-17

Client: Vista Landfill Material Type: Geotextile

Project No.: 101.07-41 Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
	8-OZ	202493 4925	15 x 300		
		20249 34826	" "		
		20249 34831	" "		
		20249 34932	" "		
	6-OZ	20248 24662	15 X300		
		20248 24664	15X300		

Totals: 4 Rolls 8 oz = 18,000 ft²
2 Rolls 6 oz = 9,000 ft²

Notes:

BOL 0103659

Manufacturer's Certifications

GSE Roll Allocation

Order : SO-081336
Customer : Waste Management of Florida
Project Name : WMI Vista Landfill

Roll#	Product Code	Mfg Date	Length
2024934925	GEO-080-EBC-E-005	5/12/2017	300
2024934926	GEO-080-EBC-E-005	5/12/2017	300
2024934931	GEO-080-EBC-E-005	5/12/2017	300
2024934932	GEO-080-EBC-E-005	5/12/2017	300

GSE Lining Technology, LLC.

ROLL TEST DATA REPORT

Report Date: May/13/2017

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-081336	Waste Management of Florida	Apopka, FL	GEO-080E-EBC-E-005	

GSE QC APPROVED

ROLL #	ASTM D4751 A0S (mm)	ASTM D6241 CBR PUNCTURE (lbs)	Mass per Unit Area ASTM D5261 (oz/yd²)	ASTM D4632 Elongation @ Break (%) MD	ASTM D4632 Grab Strength (lbs) MD	ASTM D4533 Trapezoidoal Tear (lbs) MD	ASTM D3786 Mullen Burst (psi)	ASTM D4491 Permittivity (sec-1)	ASTM D4833 Puncture Resistance (lbs)	ASTM D5199 Thickness (mils)	Water Flow D4491 gpm/ft2	ASTM D4632 Elongation @ Break (%) TD	ASTM D4632 Grab Strength (lbs) TD	ASTM D4533 Trapezoidoal Tear (lbs) TD
2024934925	0.150	834	9.04	89	299	133	503	2.25	157	112	166	104	340	165
2024934926	0.150	834	9.04	89	299	133	503	2.25	157	112	166	104	340	165
2024934931	0.150	834	9.04	89	299	133	503	2.25	157	112	166	104	340	165
2024934932	0.150	834	9.04	89	299	133	503	2.25	157	112	166	104	340	165

Laboratory Manager: Mauricio Ossa

This test report shall not be reproduced, except in full, without written approval of the Laboratory.

1245 Eastland Avenue
Kingstree, SC 29556
Phone 843-382-4603
Fax 843-382-4604

Date: May 13, 2017

Project: # 81336

Ref: Ultraviolet (UV) Resistance

To Whom It May Concern:

The resistance of nonwoven needle punched geotextiles to ultraviolet light depends primarily on antioxident and carbon black package mixed with resin to prepare a formulation for fiber extrusion. As long as this formulation remains the same the UV resistance of a geotextiles does not change. Therefore, UV testing is performed only once per resin formulation, according to ASTM Test Method D4355 and results are included on GSE geotextile specification sheet. Currently, all GSE geotextiles meet or exceed a value of 70% strength retained after 500 hours of UV exposure. GSE will meet or exceed this value for the referenced project.

Although GSE geotextiles are manufactured using one of the best available antioxident packages, we recommend covering the geotextiles within 30 days of exposure to direct Sunlight. This period does not include time during which geotextiles rolls remain on site covered in black shrink-wrap. Our recommendation is based on UV performance data published in technical literature indicating geotextile strength can decrease sharply after prolonged exposure to Sunlight.

Mauricio Ossa
Director of Global Quality

Conformance Tests

May 18, 2017

Mail To:

Sheree Grant
Waste Management, Inc.

email: sgrant@wm.com
email: pwalls@cecenv.com

Bill To:

<= Same (P.O. # 1114007819)

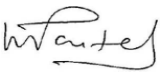
Dear Ms. Grant:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	**Vista Cell 5**
TRI Job Reference Number:	28920
Material(s) Tested:	One, GSE GEO-080E-EBC-E-00 8 oz Nonwoven Geotextile(s)
Test(s) Requested:	Mass/Unit Area (ASTM D 5261) Grab Tensile (ASTM D 4632) Puncture Strength (ASTM D 4833) CBR Puncture Strength (ASTM D 6241) Trapezoidal Tear (ASTM D 4533) Apparent Opening Size via PSD (ASTM D 4751) Permittivity via PSD (ASTM D 4491)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,



Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

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

GEOTEXTILE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE GEO-080E-EBC-E-00 8 oz Nonwoven Geotextile
Sample Identification: 020493925
TRI Log #: 28920

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	4.04	3.78	3.48	2.83	3.81	4.11	3.54	4.10	3.56	3.59	**3.68**	0.38	
Mass/Unit Area (oz/sq.yd)	9.40	8.79	8.09	6.58	8.86	9.56	8.23	9.54	8.28	8.35	**8.57**	0.89	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	285	237	254	241	338	276	249	287	256	267	**269**	30	200 min
TD - Tensile Strength (lbs)	365	301	424	320	414	316	392	404	297	240	**347**	61	200 min
MD - Elong. @ Max. Load (%)	79	89	94	100	80	95	87	92	85	79	**88**	7	
TD - Elong. @ Max. Load (%)	106	101	102	96	107	101	106	106	101	101	**103**	3	
Puncture Resistance (ASTM D 4833)													
Puncture Strength (lbs)	158	163	209	185	191						**181**	21	90 min
CBR Puncture Strength (ASTM D 6241)													
Puncture Resistance (lbs)	885	981	968	773	898	968	767	1052	863	937	**909**	91	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	125	122	128	111	138	125	116	102	182	118	**127**	22	75 min
TD - Tear Strength (lbs)	154	184	173	199	188	138	187	213	144	176	**176**	24	75 min
Apparent Opening Size (ASTM D 4751, Method B)													
Opening Size Diameter (mm)	0.175	0.150	0.160	0.126	0.150						**0.152**	0.018	0.21 max
Sieve No.	70	70	70	100	70						**70**		
Permittivity (ASTM D 4491,Method C)													
Thickness (mil)	90	106	106	91	96	90	78	88	98	99	**94.2**	8.6	
Thickness (mm)	2.29	2.69	2.69	2.31	2.44	2.29	1.98	2.24	2.49	2.51	**2.39**	0.22	
Permittivity (Sec-1)	1.90	1.52	1.54	1.22	1.44	1.57	1.63	1.72	1.64	1.33	**1.55**	0.19	1.0 min
Permittivity (GPM/ft2)	142.1	113.7	115.2	91.3	107.7	117.4	121.9	128.7	122.7	99.5	**116.0**	14.5	
Flow rate (LPM/m2)	5791	4633	4693	3718	4389	4785	4968	5242	4998	4053	**4727**	589	
Permittivity (cm/sec)	0.434	0.409	0.415	0.282	0.351	0.359	0.323	0.384	0.408	0.334	**0.370**	0.048	

MD Machine Direction TD Transverse Direction

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TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

B.3 GEOSYNTHETIC CLAY LINER

Inventory

CEC

Project Name: Cell-5 Date: 4-24-17

Client: Vista Landfill Material Type: GSE Bento Liner

Project No.: Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		135056515	15.5x150		
		135056516	" "		
		135056517	" "		
		135056518	" "		
		135056519	" "		
		135056520	" "		
		135056521	" "		
		135056522	" "		

Totals: 8 Rolls 18,600 ft²

Notes: + 8 bags of Loose Bentonite.

Manufacturer's Certifications

Report Date
3/26/2017

BentoLiner Manufacturing Certification

Sales Order: 81336

Customer: Waste Management of Florida

Project: WMI Vista Landfill

Product Type: BLI-075-06N-03S-D-00 Bentoliner NSL

The GCL purchased and shipped for the above referenced project does meet or exceed the project specifications.

The GCL supplied to this project has been continuously inspected for the presence of needles and is certified to be needle free.

Mauricio Ossa
Director of Global Quality

Roll Allocation List

Sales Order SO-081336
Customer Name Waste Management of Florida
Project Name WMI Vista Landfill

Serial number	Item Number	Roll width	Clay	Manufacturing date	Length
135056515	BLI-075-06N-03S-D-00	15.50	30217172A	3/13/2017	150.00
135056516	BLI-075-06N-03S-D-00	15.50	30217172A	3/13/2017	150.00
135056517	BLI-075-06N-03S-D-00	15.50	30217172A	3/13/2017	150.00
135056518	BLI-075-06N-03S-D-00	15.50	30217172A	3/13/2017	150.00
135056519	BLI-075-06N-03S-D-00	15.50	30217172A	3/13/2017	150.00
135056520	BLI-075-06N-03S-D-00	15.50	30217172B	3/13/2017	150.00
135056521	BLI-075-06N-03S-D-00	15.50	30217172B	3/13/2017	150.00
135056522	BLI-075-06N-03S-D-00	15.50	30217172B	3/14/2017	150.00

GSE Environmental, LLC

ROLL TEST DATA REPORT

GSE QC APPROVED

Report Date: Mar/26/2017

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO−081336	Waste Management of Florida	Apopka FL US	BLI−075−06N−03S−D−00	

Roll Number	ASTM D4632 Grab Strength (lbs)	ASTM D6768 Tensile Strength (ppi)	ASTM D6496 Peel Strength (ppi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
135056515	158	57.0	8.1	0.84	29.0	8.3	16.8
135056516	158	57.0	8.1	0.84	29.0	8.3	16.8
135056517	158	57.0	8.1	0.84	29.0	8.3	16.8
135056518	154	41.0	7.1	0.81	29.0	8.3	16.8
135056519	154	41.0	7.1	0.81	29.0	8.3	16.8
135056520	154	41.0	7.1	0.81	27.0	8.2	17.0
135056521	154	41.0	7.1	0.81	27.0	8.2	17.0
135056522	154	41.0	7.1	0.81	27.0	8.2	17.0

Laboratory Manager Mauricio Ossa

This test report shall not be reproduced, except in full, without written approval of the laboratory.

GSE Bentoliner Clay Lining Technology, Co.

CERTIFICATE OF ANALYSIS

PRODUCT: National 30

Shipped From: **Bentonite Performance Minerals LLC**
789 Hwy. 14-A East
Lovell, WY 82431

Car Number	Shippers Number	Load Date	Lot Code	Moisture 12 max	F.L. 18 max	MBC MEQ	Free Swell 25 min	PWA 750 min	Mesh % + 20 (15.0 Max)	Mesh % - 200 (10.0 Max)
BNSF 422070	**903856055**	**2/17/2017**	**30217172**	**9.1**	**15.6**	**100**	**28**	**821**	**2.66**	**0.14**
BNSF 420871	**903856056**	**2/18/2017**	**30218172**	**8.9**	**15.2**	**96**	**27**	**835**	**2.38**	**0.75**

YTD NUMBER OF CARS/TRKS		% MOIST 12 max	F.L. 18 max	MBC MEQ	Free Swell 25 min	PWA 750 min	Mesh % + 20 (15.0 Max)	Mesh % - 200 (10.0 Max)
	M AVG	**9.25**	**16.08**	**97.50**	**28.17**	**786.50**	**1.92**	**0.50**
12	STD DEV	**0.53**	**0.65**	**1.73**	**1.59**	**30.72**	**0.67**	**0.33**

Sold To: **GSE Clay Lining Technology, Co.**
1245 Eastland Ave.
Kingstree SC 29556

Shipped To: **GSE Clay Lining Technology, Co.**
1245 Eastland Ave.
Kingstree SC 29556

Attn: Jodie Williams
Stephen Williamson
Edgardo Cornejo
Ed Zimmel

Q A Supervisor
David Hayes

2/20/2017

GSE Roll Allocation

Order SO-081336

Customer Waste Management of Florida

Project Name WMI Vista Landfill

TRI/AUSTIN

1/100,000

Roll#	Daily Lot	Product Code	Mfg Date	Length	Pick up
135056515	37031303	BLI-075-06N-03S-D-00	3/13/2017	150	3/29
135056516	37031303	BLI-075-06N-03S-D-00	3/13/2017	150	
135056517	37031303	BLI-075-06N-03S-D-00	3/13/2017	150	
135056518	37031303	BLI-075-06N-03S-D-00	3/13/2017	150	
135056519	37031303	BLI-075-06N-03S-D-00	3/13/2017	150	
135056520	37031303	BLI-075-06N-03S-D-00	3/13/2017	150	
135056521	37031303	BLI-075-06N-03S-D-00	3/13/2017	150	
135056522	37031303	BLI-075-06N-03S-D-00	3/14/2017	150	

Conformance Tests

April 7, 2017

Mail To:

Sherre Grant
Waste Management

email: sgrant@wm.com

Bill To:

<= Same

Dear Ms. Grant:

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:	**Vista Cell 5**
TRI Job Reference Number:	27813
Material(s) Tested:	One, Bentoliner NSL
Test(s) Requested:	Index Flux (ASTM D5887)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Shawn O'Connor
Geosynthetic Services Division
www.GeosyntheticTesting.com
cc: jkuhn@tri-env.com (Jeffrey A. Kuhn, Ph.D., P.E. - Division Director)

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.

GCL TEST RESULTS
TRI Client: Waste Management
Project: Vista Cell 5

Material: BentoLiner CNSL GCL
Index Flux (ASTM D5887)
TRI Log #: 27813

PARAMETER	TEST REPLICATE NUMBER	MEAN	STD. DEV.	PROJ. SPEC.
	1			
Sample Identification: 135056515				
Index Flux (m^3/m^2/sec)	1.3E-09	**1.3E-09**		
Hydraulic Conductivity (cm/sec)	8.5E-10	**8.5E-10**		5.0E-09

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TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

B.4 GEOCOMPOSITE

Inventory

D

Geosynthetic Materials Inventory Checklist

CEC

Project Name: Cell-5 Date: 5-12-17

Client: Vista Landfill Material Type: Geocomposite

Project No.: 101.07.41 Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		131516 733	15' X 170		
		131516 747	" "		
		131516 750	" "		
		131516 751	" "		
		131516 752	" "		
		131516 753	" "		
		131516 754	" "		
		131516 755	" "		
		131516 762	" "		
		131516 763	" "		
		131516 764	" "		
		131516 765	" "		
		131516 768	" "		
		131516 769	" "		
		131516 770	" "		
		131516 771	" "		
		131516 772	" "		
		131516 773	" "		
		131516 777	" "		
		131516 778	" "		
		131516 779	" "		
		131516 780	" "		
		131516 781	" "		
		131516 782	" "		

Totals: 24 Rolls 61,200

Notes: + 3 bags of ties

BOL # 0103433

Geosynthetic Materials Inventory Checklist

CEC

Project Name: Cell-5 Date: 5-12-17

Client: Vista Landfill Material Type: Geocomposite

Project No.: 101.07-41 Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		131516650	15x170		
		131516651	15x170		
		131516658	" "		
		131516659	" "		
		131516660	" "		
		131516666	" "		
		131516667	" "		
		131516668	" "		
		131516669	" "		
		131516670	" "		
		131516671	" "		
		131516672	" "		
		131516676	" "		
		131516677	" "		
		131516678	" "		
		131516681	" "		
		131516682	" "		
		131516683	" "		
		131516684	" "		
		131516685	" "		
		131516686	" "		
		131516687	" "		
		131516688	" "		
		131516689	" "		

Totals: 24 Rolls 61,200

Notes: + 3 bags of pins

Geosynthetic Materials Inventory Checklist

CEC

Project Name: Cell 5 Date: 5-12-17

Client: Vista Landfill Material Type: Geocomposite

Project No.: 101.07.41 Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		13151 6728	15 X 170		
		13151 6734	" "		
		13151 6735	" "		
		13151 6736	" "		
		13151 6737	" "		
		13151 6738	" "		
		13151 6739	15 X 155		
		13151 6743	15X 170		
		13151 6744	" "		
		13151 6745	" "		
		13151 6746	" "		
		13151 6748	" "		
		13151 6749	" "		
		13151 6756	" "		
		13151 6757	" "		
		13151 6758	" "		
		13151 6759	" "		
		13151 6760	" "		
		13151 6761	" "		
		13151 6766	" "		
		13151 6767	" "		
		13151 6774	" "		
		13151 6775	" "		
		13151 6776	" "		

Totals: 24 Rolls 60,975

Notes: + 3 bags of ties

(Note) = The 3 bags of ties were on the back of the truck Between Rolls of geocomposite.

BOL - 0103437

(4)

Geosynthetic Materials Inventory Checklist

CEC

Project Name: Cell-5 Date: 5-12-17

Client: Vista Landfill Material Type: Geocomposite

Project No.: 101.07.41 Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		131516692	15x170		
		131516694	" "		
		131516695	" "		
		131516699	" "		
		131516700	" "		
		131516701	" "		
		131516702	" "		
		131516705	" "		
		131516706	" "		
		131516707	" "		
		131516708	" "		
		131516719	" "		
		131516720	" "		
		131516721	" "		
		131516722	" "		
		131516723	" "		
		131516724	" "		
		131516725	" "		
		131516726	" "		
		131516727	" "		
		131516729	" "		
		131516730	" "		
		131516731	" "		
		131516742	"		

Totals: 24 Rolls 61,200 ft²

Notes: + 3 bags of tics

BOL = 0103449

Geosynthetic Materials Inventory Checklist

CEC

Project Name: Cell-5 Date: 5-15-17

Client: Vista Landfill Material Type: Geocomposite

Project No.: 101.07.41 Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		131516598	15 x 170		
		131516599	" "		
		131516602	" "		
		131516603	" "		
		131516607	" "		
		131516608	" "		
		131516610	" "		
		131516611	" "		
		131516616	" "		
		131516617	" "		
		131516618	" "		
		131516629	" "		
		131516630	" "		
		131516631	" "		
		131516690	" "		
		131516693	" "		
		131516696	" "		
		131516697	" "		
		131516698	" "		
		131516703	" "		
		131516704	" "		
		131516709	" "		
		131516710	" "		
		131516732	" "		

Totals: 24 Rolls 61,200 ft²

Notes: + 3 bags of ties

BOL: 0103479

Geosynthetic Materials Inventory Checklist

CEC

Project Name: Cell - 5 Date: 5-15-17

Client: Vista Landfill Material Type: Geocomposite

Project No.: 101.0741 Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		131516638	15 x 170		
		131516639	" "		
		131516640	" "		
		131516643	" "		
		131516644	" "		
		131516645	" "		
		131516647	" "		
		131516648	" "		
		131516652	" "		
		131516653	" "		
		131516654	" "		
		131516655	" "		
		131516656	" "		
		131516657	" "		
		131516661	" "		
		131516662	" "		
		131516663	" "		
		131516664	" "		
		131516665	" "		
		131516673	" "		
		131516674	" "		
		131516675	" "		
		131516679	" "		
		131516680	" "		

Totals: 24 Rolls 61,200 sft2

Notes: + 3 bags of ties

BOL = 0103473

Geosynthetic Materials Inventory Checklist

CEC

Project Name: Cell 5 Date: 5-15-17

Client: Vista Landfill Material Type: Geocomposite

Project No.: 101.07.41 Manufacturer: CSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		131516 590	15 x 170		
		131516 591	" "		
		131516 592	" "		
		131516 593	" "		
		131516 594	" "		
		131516 595	" "		
		131516 596	" "		
		131516 597	" "		
		131516 600	" "		
		131516 601	" "		
		131516 604	" "		
		131516 605	" "		
		131516 606	" "		
		131516 609	" "		
		131516 611	" "		

Totals: 15 Rolls 37,~~440~~ ft2

Notes: + 2 bags of Ties AND 4 boxes of ties with 5 bags each. TOTAL IN boxes 20,000 ties ?

Geosynthetic Materials Inventory Checklist

CEC

Project Name: Cell 5 Date: 5-15-17

Client: Vista Landfill Material Type: Geocomposite

Project No.: 101.07.41 Manufacturer: GSE

CEC ID #	Lot Number	Roll Number	Dimensions	Comments	Conformance Sample #
		131516 612	15 x 170		
		131516 613	" "		
		131516 614	" "		
		131516 615	" "		
		131516 619	" "		
		131516620	" "		
		131516621	" "		
		131516622	" "		
		131516623	" "		
		131516624	" "		
		131516625	" "		
		131516626	" "		
		131516627	" "		
		131516628	" "		
		131516632	" "		
		131516633	" "		
		131516634	" "		
		131516635	" "		
		131516636	" "		
		131516637	" "		
		131516641	" "		
		131516642	" "		
		131516646	" "		
		131516649	" "		

Totals: 24 Rolls 61,203 ft²

Notes: Note: No ties on this truck. BOL was faxed:

BOL= 0103476

Manufacturer's Certifications

Roll Allocation List

Sales Order SO-081336
Customer Name Waste Management of Florida
Project Name WMI Vista Landfill

Serial number	Item Number	Top	Bottom	Manufacturing date	Length
131516590	FS2-300E-08-08-E-00	2024890814	2024890811	4/4/2017	170.00
131516591	FS2-300E-08-08-E-00	2024890814	2024890811	4/4/2017	170.00
131516592	FS2-300E-08-08-E-00	2024890814	2024890811	4/4/2017	170.00
131516593	FS2-300E-08-08-E-00	2024890814	2024890811	4/4/2017	170.00
131516594	FS2-300E-08-08-E-00	2024890814	2024890811	4/4/2017	170.00
131516595	FS2-300E-08-08-E-00	2024890814	2024890811	4/4/2017	170.00
131516596	FS2-300E-08-08-E-00	2024890814	2024890811	4/4/2017	170.00
131516597	FS2-300E-08-08-E-00	2024890814	2024890811	4/4/2017	170.00
131516598	FS2-300E-08-08-E-00	2024890819	2024890815	4/4/2017	170.00
131516599	FS2-300E-08-08-E-00	2024890819	2024890815	4/4/2017	170.00
131516600	FS2-300E-08-08-E-00	2024890819	2024890815	4/4/2017	170.00
131516601	FS2-300E-08-08-E-00	2024890819	2024890815	4/4/2017	170.00
131516602	FS2-300E-08-08-E-00	2024890819	2024890815	4/4/2017	170.00
131516603	FS2-300E-08-08-E-00	2024890819	2024890815	4/4/2017	170.00
131516604	FS2-300E-08-08-E-00	2024890819	2024890815	4/4/2017	170.00
131516605	FS2-300E-08-08-E-00	2024890819	2024890815	4/4/2017	170.00
131516606	FS2-300E-08-08-E-00	2024890819	2024890818	4/4/2017	170.00
131516607	FS2-300E-08-08-E-00	2024890821	2024890818	4/4/2017	170.00
131516608	FS2-300E-08-08-E-00	2024890821	2024890818	4/4/2017	170.00
131516609	FS2-300E-08-08-E-00	2024890821	2024890818	4/4/2017	170.00
131516610	FS2-300E-08-08-E-00	2024890821	2024890818	4/4/2017	170.00
131516611	FS2-300E-08-08-E-00	2024890821	2024890818	4/4/2017	170.00
131516612	FS2-300E-08-08-E-00	2024890821	2024890818	4/4/2017	170.00
131516613	FS2-300E-08-08-E-00	2024890821	2024890818	4/4/2017	170.00
131516614	FS2-300E-08-08-E-00	2024890821	2024890818	4/4/2017	170.00
131516615	FS2-300E-08-08-E-00	2024890821	2024890816	4/4/2017	170.00
131516616	FS2-300E-08-08-E-00	2024890820	2024890816	4/4/2017	170.00
131516617	FS2-300E-08-08-E-00	2024890820	2024890816	4/4/2017	170.00
131516618	FS2-300E-08-08-E-00	2024890820	2024890816	4/4/2017	170.00
131516619	FS2-300E-08-08-E-00	2024890820	2024890816	4/4/2017	170.00
131516620	FS2-300E-08-08-E-00	2024890820	2024890816	4/4/2017	170.00
131516621	FS2-300E-08-08-E-00	2024890820	2024890816	4/4/2017	170.00
131516622	FS2-300E-08-08-E-00	2024890820	2024890816	4/4/2017	170.00
131516623	FS2-300E-08-08-E-00	2024890820	2024890816	4/4/2017	170.00
131516624	FS2-300E-08-08-E-00	2024890820	2024890810	4/4/2017	170.00
131516625	FS2-300E-08-08-E-00	2024890817	2024890810	4/4/2017	170.00
131516626	FS2-300E-08-08-E-00	2024890817	2024890810	4/4/2017	170.00
131516627	FS2-300E-08-08-E-00	2024890817	2024890810	4/4/2017	170.00
131516628	FS2-300E-08-08-E-00	2024890817	2024890810	4/4/2017	170.00
131516629	FS2-300E-08-08-E-00	2024890817	2024890810	4/4/2017	170.00
131516630	FS2-300E-08-08-E-00	2024890817	2024890810	4/4/2017	170.00
131516631	FS2-300E-08-08-E-00	2024890817	2024890810	4/4/2017	170.00
131516632	FS2-300E-08-08-E-00	2024890817	2024890812	4/4/2017	170.00
131516633	FS2-300E-08-08-E-00	2024890829	2024890812	4/4/2017	170.00
131516634	FS2-300E-08-08-E-00	2024890829	2024890812	4/4/2017	170.00
131516635	FS2-300E-08-08-E-00	2024890829	2024890812	4/4/2017	170.00
131516636	FS2-300E-08-08-E-00	2024890829	2024890812	4/4/2017	170.00
131516637	FS2-300E-08-08-E-00	2024890829	2024890812	4/4/2017	170.00
131516638	FS2-300E-08-08-E-00	2024890829	2024890812	4/4/2017	170.00
131516639	FS2-300E-08-08-E-00	2024890829	2024890812	4/4/2017	170.00
131516640	FS2-300E-08-08-E-00	2024890829	2024890812	4/4/2017	170.00
131516641	FS2-300E-08-08-E-00	2024890829	2024890828	4/4/2017	170.00
131516642	FS2-300E-08-08-E-00	2024890841	2024890828	4/4/2017	170.00
131516643	FS2-300E-08-08-E-00	2024890841	2024890828	4/4/2017	170.00
131516644	FS2-300E-08-08-E-00	2024890841	2024890828	4/4/2017	170.00
131516645	FS2-300E-08-08-E-00	2024890841	2024890828	4/4/2017	170.00
131516646	FS2-300E-08-08-E-00	2024890841	2024890828	4/4/2017	170.00
131516647	FS2-300E-08-08-E-00	2024890841	2024890828	4/4/2017	170.00
131516648	FS2-300E-08-08-E-00	2024890841	2024890828	4/4/2017	170.00
131516649	FS2-300E-08-08-E-00	2024890841	2024890828	4/4/2017	170.00

Roll Allocation List

Sales Order SO-081336
Customer Name Waste Management of Florida
Project Name WMI Vista Landfill

Serial number	Item Number	Top	Bottom	Manufacturing date	Length
131516650	FS2-300E-08-08-E-00	2024890822	2024890837	4/4/2017	170.00
131516651	FS2-300E-08-08-E-00	2024890822	2024890837	4/4/2017	170.00
131516652	FS2-300E-08-08-E-00	2024890822	2024890837	4/4/2017	170.00
131516653	FS2-300E-08-08-E-00	2024890822	2024890837	4/4/2017	170.00
131516654	FS2-300E-08-08-E-00	2024890822	2024890837	4/4/2017	170.00
131516655	FS2-300E-08-08-E-00	2024890822	2024890837	4/4/2017	170.00
131516656	FS2-300E-08-08-E-00	2024890822	2024890837	4/4/2017	170.00
131516657	FS2-300E-08-08-E-00	2024890822	2024890837	4/4/2017	170.00
131516658	FS2-300E-08-08-E-00	2024890822	2024890831	4/4/2017	170.00
131516659	FS2-300E-08-08-E-00	2024890840	2024890831	4/4/2017	170.00
131516660	FS2-300E-08-08-E-00	2024890840	2024890831	4/4/2017	170.00
131516661	FS2-300E-08-08-E-00	2024890840	2024890831	4/4/2017	170.00
131516662	FS2-300E-08-08-E-00	2024890840	2024890831	4/4/2017	170.00
131516663	FS2-300E-08-08-E-00	2024890840	2024890831	4/4/2017	170.00
131516664	FS2-300E-08-08-E-00	2024890840	2024890831	4/4/2017	170.00
131516665	FS2-300E-08-08-E-00	2024890840	2024890831	4/4/2017	170.00
131516666	FS2-300E-08-08-E-00	2024890840	2024890831	4/4/2017	170.00
131516667	FS2-300E-08-08-E-00	2024890840	2024890813	4/4/2017	170.00
131516668	FS2-300E-08-08-E-00	2024890830	2024890813	4/4/2017	170.00
131516669	FS2-300E-08-08-E-00	2024890830	2024890813	4/4/2017	170.00
131516670	FS2-300E-08-08-E-00	2024890830	2024890813	4/4/2017	170.00
131516671	FS2-300E-08-08-E-00	2024890830	2024890813	4/4/2017	170.00
131516672	FS2-300E-08-08-E-00	2024890830	2024890813	4/5/2017	170.00
131516673	FS2-300E-08-08-E-00	2024890830	2024890813	4/5/2017	170.00
131516674	FS2-300E-08-08-E-00	2024890830	2024890813	4/5/2017	170.00
131516675	FS2-300E-08-08-E-00	2024890830	2024890852	4/5/2017	170.00
131516676	FS2-300E-08-08-E-00	2024890834	2024890852	4/5/2017	170.00
131516677	FS2-300E-08-08-E-00	2024890834	2024890852	4/5/2017	170.00
131516678	FS2-300E-08-08-E-00	2024890834	2024890852	4/5/2017	170.00
131516679	FS2-300E-08-08-E-00	2024890834	2024890852	4/5/2017	170.00
131516680	FS2-300E-08-08-E-00	2024890834	2024890852	4/5/2017	170.00
131516681	FS2-300E-08-08-E-00	2024890834	2024890852	4/5/2017	170.00
131516682	FS2-300E-08-08-E-00	2024890834	2024890852	4/5/2017	170.00
131516683	FS2-300E-08-08-E-00	2024890834	2024890852	4/5/2017	170.00
131516684	FS2-300E-08-08-E-00	2024890834	2024890851	4/5/2017	170.00
131516685	FS2-300E-08-08-E-00	2024890825	2024890851	4/5/2017	170.00
131516686	FS2-300E-08-08-E-00	2024890825	2024890851	4/5/2017	170.00
131516687	FS2-300E-08-08-E-00	2024890825	2024890851	4/5/2017	170.00
131516688	FS2-300E-08-08-E-00	2024890825	2024890851	4/5/2017	170.00
131516689	FS2-300E-08-08-E-00	2024890825	2024890851	4/5/2017	170.00
131516690	FS2-300E-08-08-E-00	2024890825	2024890851	4/5/2017	170.00
131516692	FS2-300E-08-08-E-00	2024890825	2024890851	4/5/2017	170.00
131516693	FS2-300E-08-08-E-00	2024890825	2024890853	4/5/2017	170.00
131516694	FS2-300E-08-08-E-00	2024890857	2024890853	4/5/2017	170.00
131516695	FS2-300E-08-08-E-00	2024890857	2024890853	4/5/2017	170.00
131516696	FS2-300E-08-08-E-00	2024890857	2024890853	4/5/2017	170.00
131516697	FS2-300E-08-08-E-00	2024890857	2024890853	4/5/2017	170.00
131516698	FS2-300E-08-08-E-00	2024890857	2024890853	4/5/2017	170.00
131516699	FS2-300E-08-08-E-00	2024890857	2024890853	4/5/2017	170.00
131516700	FS2-300E-08-08-E-00	2024890857	2024890853	4/5/2017	170.00
131516701	FS2-300E-08-08-E-00	2024890857	2024890824	4/5/2017	170.00
131516702	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00
131516703	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00
131516704	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00
131516705	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00
131516706	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00
131516707	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00
131516708	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00
131516709	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00
131516710	FS2-300E-08-08-E-00	2024890856	2024890824	4/5/2017	170.00

Roll Allocation List

Sales Order SO-081336
Customer Name Waste Management of Florida
Project Name WMI Vista Landfill

Serial number	Item Number	Top	Bottom	Manufacturing date	Length
131516711	FS2-300E-08-08-E-00	2024890856	2024890850	4/5/2017	116.00
131516719	FS2-300E-08-08-E-00	2024890823	2024890850	4/5/2017	170.00
131516720	FS2-300E-08-08-E-00	2024890823	2024890850	4/5/2017	170.00
131516721	FS2-300E-08-08-E-00	2024890823	2024890850	4/5/2017	170.00
131516722	FS2-300E-08-08-E-00	2024890823	2024890850	4/5/2017	170.00
131516723	FS2-300E-08-08-E-00	2024890823	2024890850	4/5/2017	170.00
131516724	FS2-300E-08-08-E-00	2024890823	2024890850	4/5/2017	170.00
131516725	FS2-300E-08-08-E-00	2024890823	2024890850	4/5/2017	170.00
131516726	FS2-300E-08-08-E-00	2024890823	2024890833	4/5/2017	170.00
131516727	FS2-300E-08-08-E-00	2024890836	2024890833	4/5/2017	170.00
131516728	FS2-300E-08-08-E-00	2024890836	2024890833	4/5/2017	170.00
131516729	FS2-300E-08-08-E-00	2024890836	2024890833	4/5/2017	170.00
131516730	FS2-300E-08-08-E-00	2024890836	2024890833	4/5/2017	170.00
131516731	FS2-300E-08-08-E-00	2024890836	2024890833	4/5/2017	170.00
131516732	FS2-300E-08-08-E-00	2024890836	2024890833	4/5/2017	170.00
131516733	FS2-300E-08-08-E-00	2024890836	2024890833	4/5/2017	170.00
131516734	FS2-300E-08-08-E-00	2024890836	2024890832	4/5/2017	170.00
131516735	FS2-300E-08-08-E-00	2024890855	2024890832	4/5/2017	170.00
131516736	FS2-300E-08-08-E-00	2024890855	2024890833	4/5/2017	170.00
131516737	FS2-300E-08-08-E-00	2024890855	2024890832	4/5/2017	170.00
131516738	FS2-300E-08-08-E-00	2024890855	2024890832	4/5/2017	170.00
131516739	FS2-300E-08-08-E-00	2024890855	2024890832	4/5/2017	155.00
131516742	FS2-300E-08-08-E-00	2024890855	2024890832	4/6/2017	170.00
131516743	FS2-300E-08-08-E-00	2024890855	2024890832	4/6/2017	170.00
131516744	FS2-300E-08-08-E-00	2024890855	2024890832	4/6/2017	170.00
131516745	FS2-300E-08-08-E-00	2024890855	2024890854	4/6/2017	170.00
131516746	FS2-300E-08-08-E-00	2024890826	2024890854	4/6/2017	170.00
131516747	FS2-300E-08-08-E-00	2024890826	2024890854	4/6/2017	170.00
131516748	FS2-300E-08-08-E-00	2024890826	2024890854	4/6/2017	170.00
131516749	FS2-300E-08-08-E-00	2024890826	2024890854	4/6/2017	170.00
131516750	FS2-300E-08-08-E-00	2024890826	2024890854	4/6/2017	170.00
131516751	FS2-300E-08-08-E-00	2024890826	2024890854	4/6/2017	170.00
131516752	FS2-300E-08-08-E-00	2024890826	2024890854	4/6/2017	170.00
131516753	FS2-300E-08-08-E-00	2024890826	2024837474	4/6/2017	170.00
131516754	FS2-300E-08-08-E-00	2024890826	2024837474	4/6/2017	170.00
131516755	FS2-300E-08-08-E-00	2024837469	2024837474	4/6/2017	170.00
131516756	FS2-300E-08-08-E-00	2024837469	2024837474	4/6/2017	170.00
131516757	FS2-300E-08-08-E-00	2024837469	2024837474	4/6/2017	170.00
131516758	FS2-300E-08-08-E-00	2024837469	2024837474	4/6/2017	170.00
131516759	FS2-300E-08-08-E-00	2024837469	2024837474	4/6/2017	170.00
131516760	FS2-300E-08-08-E-00	2024837469	2024837474	4/6/2017	170.00
131516761	FS2-300E-08-08-E-00	2024837469	2024837474	4/6/2017	170.00
131516762	FS2-300E-08-08-E-00	2024837469	2024837462	4/6/2017	170.00
131516763	FS2-300E-08-08-E-00	2024837469	2024837462	4/6/2017	170.00
131516764	FS2-300E-08-08-E-00	2024837384	2024837462	4/6/2017	170.00
131516765	FS2-300E-08-08-E-00	2024837384	2024837462	4/6/2017	170.00
131516766	FS2-300E-08-08-E-00	2024837384	2024837462	4/6/2017	170.00
131516767	FS2-300E-08-08-E-00	2024837384	2024837462	4/6/2017	170.00
131516768	FS2-300E-08-08-E-00	2024837384	2024837462	4/6/2017	170.00
131516769	FS2-300E-08-08-E-00	2024837384	2024837462	4/6/2017	170.00
131516770	FS2-300E-08-08-E-00	2024837384	2024837472	4/6/2017	170.00
131516771	FS2-300E-08-08-E-00	2024837384	2024837472	4/6/2017	170.00
131516772	FS2-300E-08-08-E-00	2024837384	2024837472	4/6/2017	170.00
131516773	FS2-300E-08-08-E-00	2024890845	2024837472	4/6/2017	170.00
131516774	FS2-300E-08-08-E-00	2024890845	2024837472	4/6/2017	170.00
131516775	FS2-300E-08-08-E-00	2024890845	2024837472	4/6/2017	170.00
131516776	FS2-300E-08-08-E-00	2024890845	2024837472	4/6/2017	170.00
131516777	FS2-300E-08-08-E-00	2024890845	2024837472	4/6/2017	170.00
131516778	FS2-300E-08-08-E-00	2024890845	2024890839	4/6/2017	170.00
131516779	FS2-300E-08-08-E-00	2024890845	2024890839	4/6/2017	170.00

Roll Allocation List

Sales Order SO-081336
Customer Name Waste Management of Florida
Project Name WMI Vista Landfill

Serial number	Item Number	Top	Bottom	Manufacturing date	Length
131516780	FS2-300E-08-08-E-00	2024890845	2024890839	4/6/2017	170.00
131516781	FS2-300E-08-08-E-00	2024890843	2024890839	4/6/2017	170.00
131516782	FS2-300E-08-08-E-00	2024890843	2024890839	4/6/2017	170.00

GSE Environmental, LLC

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Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO−081336	Waste Management of Florida	Apopka FL US	FS2−300E−08−08−E−00	

Roll Number	Geonet Thickness ASTM D5199 (mils)	Tensile Strength ASTM D7179 (ppi)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Ply Adhesion Average ASTM D7005 (ppi) Side A	Ply Adhesion Average ASTM D7005 (ppi) Side B	Ply Adhesion Minimum ASTM D7005 (ppi) Side A	Ply Adhesion Minimum ASTM D7005 (ppi) Side B
131516590	309	104	0.945	2.4	3.7	2.6	2.0	0.7
131516591	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516592	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516593	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516594	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516595	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516596	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516597	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516598	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516599	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516600	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516601	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516602	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516603	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516604	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516605	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516606	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516607	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516608	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516609	311	100	0.965	2.5	2.7	3.2	1.9	1.8
131516610	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516611	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516612	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516613	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516614	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516615	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516616	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516617	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516618	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516619	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516620	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516621	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516622	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516623	303	104	0.964	2.6	3.2	2.2	1.3	1.5

GSE Environmental, LLC

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Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO−081336	Waste Management of Florida	Apopka FL US	FS2−300E−08−08−E−00	

Roll Number	Geonet Thickness ASTM D5199 (mils)	Tensile Strength ASTM D7179 (ppi)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Ply Adhesion Average ASTM D7005 (ppi) Side A	Ply Adhesion Average ASTM D7005 (ppi) Side B	Ply Adhesion Minimum ASTM D7005 (ppi) Side A	Ply Adhesion Minimum ASTM D7005 (ppi) Side B
131516624	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516625	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516626	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516627	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516628	303	104	0.964	2.6	3.2	2.2	1.3	1.5
131516629	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516630	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516631	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516632	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516633	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516634	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516635	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516636	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516637	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516638	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516639	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516640	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516641	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516642	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516643	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516644	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516645	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516646	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516647	303	95	0.967	2.6	3.0	2.7	1.5	1.3
131516648	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516649	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516650	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516651	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516652	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516653	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516654	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516655	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516656	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516657	310	114	0.960	2.6	3.1	2.2	1.3	1.4

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Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO−081336	Waste Management of Florida	Apopka FL US	FS2−300E−08−08−E−00	

Roll Number	Geonet Thickness ASTM D5199 (mils)	Tensile Strength ASTM D7179 (ppi)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Ply Adhesion Average ASTM D7005 (ppi) Side A	Ply Adhesion Average ASTM D7005 (ppi) Side B	Ply Adhesion Minimum ASTM D7005 (ppi) Side A	Ply Adhesion Minimum ASTM D7005 (ppi) Side B
131516658	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516659	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516660	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516661	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516662	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516663	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516664	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516665	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516666	310	114	0.960	2.6	3.1	2.2	1.3	1.4
131516667	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516668	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516669	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516670	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516671	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516672	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516673	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516674	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516675	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516676	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516677	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516678	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516679	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516680	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516681	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516682	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516683	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516684	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516685	302	97	0.961	2.6	3.0	2.1	1.5	1.1
131516686	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516687	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516688	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516689	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516690	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516692	297	97	0.965	2.3	2.0	2.1	0.9	0.7

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Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO−081336	Waste Management of Florida	Apopka FL US	FS2−300E−08−08−E−00	

Roll Number	Geonet Thickness ASTM D5199 (mils)	Tensile Strength ASTM D7179 (ppi)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Ply Adhesion Average ASTM D7005 (ppi) Side A	Ply Adhesion Average ASTM D7005 (ppi) Side B	Ply Adhesion Minimum ASTM D7005 (ppi) Side A	Ply Adhesion Minimum ASTM D7005 (ppi) Side B
131516693	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516694	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516695	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516696	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516697	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516698	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516699	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516700	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516701	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516702	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516703	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516704	297	97	0.965	2.3	2.0	2.1	0.9	0.7
131516705	299	93	0.964	2.6	2.5	2.7	0.8	1.5
131516706	299	93	0.964	2.6	2.5	2.7	0.8	1.5
131516707	299	93	0.964	2.6	2.5	2.7	0.8	1.5
131516708	299	93	0.964	2.6	2.5	2.7	0.8	1.5
131516709	299	93	0.964	2.6	2.5	2.7	0.8	1.5
131516710	299	93	0.964	2.6	2.5	2.7	0.8	1.5
131516711	299	93	0.964	2.6	2.5	2.7	0.8	1.5
131516719	301	106	0.964	2.4	1.9	2.1	1.1	1.1
131516720	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516721	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516722	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516723	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516724	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516725	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516726	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516727	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516728	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516729	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516730	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516731	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516732	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516733	301	106	0.962	2.5	1.8	2.3	1.3	1.5

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Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO−081336	Waste Management of Florida	Apopka FL US	FS2−300E−08−08−E−00	

Roll Number	Geonet Thickness ASTM D5199 (mils)	Tensile Strength ASTM D7179 (ppi)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Ply Adhesion Average ASTM D7005 (ppi) Side A	Ply Adhesion Average ASTM D7005 (ppi) Side B	Ply Adhesion Minimum ASTM D7005 (ppi) Side A	Ply Adhesion Minimum ASTM D7005 (ppi) Side B
131516734	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516735	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516736	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516737	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516738	301	106	0.962	2.5	1.8	2.3	1.3	1.5
131516739	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516742	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516743	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516744	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516745	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516746	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516747	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516748	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516749	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516750	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516751	308	96	0.960	2.6	1.3	1.3	0.6	0.5
131516752	300	101	0.966	2.4	2.5	2.3	1.3	1.0
131516753	300	101	0.966	2.4	2.5	2.3	1.3	1.0
131516754	300	101	0.966	2.4	2.5	2.3	1.3	1.0
131516755	300	101	0.966	2.4	2.5	2.3	1.3	1.0
131516756	300	101	0.966	2.4	2.5	2.3	1.3	1.0
131516757	300	101	0.966	2.4	2.5	2.3	1.3	1.0
131516758	300	101	0.966	2.4	2.5	2.3	1.3	1.0
131516759	300	101	0.966	2.4	2.5	2.3	1.3	1.0
131516760	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516761	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516762	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516763	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516764	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516765	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516766	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516767	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516768	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516769	302	98	0.962	2.4	2.6	2.2	2.3	1.8

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Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO−081336	Waste Management of Florida	Apopka FL US	FS2−300E−08−08−E−00	

Roll Number	Geonet Thickness ASTM D5199 (mils)	Tensile Strength ASTM D7179 (ppi)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Ply Adhesion Average ASTM D7005 (ppi) Side A	Ply Adhesion Average ASTM D7005 (ppi) Side B	Ply Adhesion Minimum ASTM D7005 (ppi) Side A	Ply Adhesion Minimum ASTM D7005 (ppi) Side B
131516770	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516771	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516772	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516773	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516774	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516775	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516776	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516777	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516778	302	98	0.962	2.4	2.6	2.2	2.3	1.8
131516779	318	119	0.958	2.3	2.8	3.0	1.6	2.0
131516780	318	119	0.958	2.3	2.8	3.0	1.6	2.0
131516781	318	119	0.958	2.3	2.8	3.0	1.6	2.0
131516782	318	119	0.958	2.3	2.8	3.0	1.6	2.0

Laboratory Manager Mauricio Ossa

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GSE Environmental, LLC

ROLL TEST DATA REPORT

GSE QC APPROVED

Report Date: 6-Apr-2017

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-81336	Waste Management of Florida	Apopka Fl US	FBR-080E-EBC-E-005	

Roll Number	Mass per Unit Area ASTM D5261 (oz/yd²)	ASTM D6241 CBR Puncture (gpm/ft²)	ASTM D4491 Permittivity (sec-1)	ASTM D4751 AOS (mm)	ASTM D4632 Grab Strength (lbs) MD	ASTM D4632 Grab Strength (lbs) TD	ASTM D4632 Grab Elongation (%) MD	ASTM D4632 Grab Elongation (%) TD	ASTM D4533 Trapezoidal Tear (lbs) MD	ASTM D4533 Trapezoidal Tear (lbs) TD	ASTM D4833 Puncture Resistance (lbs)
2024890814	8.49	898	1.67	0.150	294	339	78	83	120	124	174
2024890819	9.08	773	1.83	0.150	351	357	81	91	115	137	178
2024890821	8.72	865	2.24	0.150	302	387	75	80	114	145	178
2024890820	8.43	865	2.24	0.150	296	307	73	83	116	124	186
2024890817	8.56	865	2.24	0.150	319	361	82	91	115	149	200
2024890829	10.00	788	1.35	0.150	319	382	91	86	106	158	157
2024890841	10.00	788	1.35	0.150	319	382	91	86	106	158	157
2024890822	10.00	788	1.35	0.150	319	382	91	86	106	158	157
2024890840	8.52	659	1.32	0.180	249	342	91	88	113	139	126
2024890830	8.52	659	1.32	0.180	249	342	91	88	113	139	126
2024890834	8.52	659	1.32	0.180	249	342	91	88	113	139	126
2024890825	8.52	659	1.32	0.180	249	342	91	88	113	139	126
2024890857	8.75	708	1.42	0.180	251	335	88	88	98	131	158
2024890856	8.75	708	1.42	0.180	251	335	88	88	98	131	158
2024890823	8.75	708	1.42	0.180	251	335	88	88	98	131	158
2024890855	8.75	708	1.42	0.180	251	335	88	88	98	131	158
2004890826	8.36	581	1.41	0.180	231	310	87	92	96	137	131
2024837469	8.36	581	1.41	0.180	231	310	87	92	96	137	131
2024837384	8.36	581	1.41	0.180	231	310	87	92	96	137	131
2024890845	8.36	581	1.41	0.180	231	310	87	92	96	137	131
2024890843	8.45	650	1.84	0.180	260	341	90	90	92	127	137
2024890811	8.45	650	1.84	0.180	260	341	90	90	92	127	137
2024890815	8.45	650	1.84	0.180	260	341	90	90	92	127	137
2024890816	8.99	663	1.86	0.180	250	302	95	88	91	136	129
2024890810	8.99	663	1.86	0.180	250	302	95	88	91	136	129
2024890812	8.99	663	1.86	0.180	250	302	95	88	91	136	129
2024890828	8.99	663	1.86	0.180	250	302	95	88	91	136	129
2024890837	8.07	622	2.04	0.180	257	291	94	94	102	140	122
2024890831	8.07	622	2.04	0.180	257	291	94	94	102	140	122
2024890813	8.07	622	2.04	0.180	257	291	94	94	102	140	122
2024890852	8.71	592	1.65	0.150	258	331	98	91	102	115	127
2024890851	8.71	592	1.65	0.150	258	331	98	91	102	115	127
2024890853	8.71	592	1.65	0.150	258	331	98	91	102	115	127
2024890824	8.38	621	1.65	0.150	239	342	89	101	91	121	125
2024890850	8.38	621	1.65	0.150	239	342	89	101	91	121	125
2024890833	8.27	615	1.85	0.150	252	322	93	94	94	120	127
2024890832	8.95	602	1.47	0.150	290	353	98	101	104	123	134
2024890854	8.95	602	1.47	0.150	290	353	98	101	104	123	134

GSE Environmental, LLC

ROLL TEST DATA REPORT

GSE QC APPROVED

Report Date: 6-Apr-2017

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-81336	Waste Management of Florida	Apopka Fl US	FBR-080E-EBC-E-005	

Roll Number	Mass per Unit Area ASTM D5261 (oz/yd²)	ASTM D6241 CBR Puncture (gpm/ft²)	ASTM D4491 Permittivity (sec-1)	ASTM D4751 AOS (mm)	ASTM D4632 Grab Strength (lbs) MD	ASTM D4632 Grab Strength (lbs) TD	ASTM D4632 Grab Elongation (%) MD	ASTM D4632 Grab Elongation (%) TD	ASTM D4533 Trapezoidal Tear (lbs) MD	ASTM D4533 Trapezoidal Tear (lbs) TD	ASTM D4833 Puncture Resistance (lbs)
2024837474	8.95	602	1.47	0.150	290	353	98	101	104	123	134
2024837462	8.49	626	1.58	0.150	245	325	88	92	94	115	131
2024837472	8.49	626	1.58	0.150	245	325	88	92	94	115	131
2024890839	8.49	626	1.58	0.150	245	325	88	92	94	115	131
2024890836	8.49	626	1.58	0.150	245	325	88	92	94	115	131
2024890818	8.11	671	1.844	0.150	248	312	85	95	92	120	129

Laboratory Manager Mauricio Ossa

GSE Environmental, LLC.

Transmissivity Report

ASTM D4716

Roll No. 131516590

ROLL IDENTIFICATION

Roll Number	131516590
Product Name	FS2-300E-08-08-E-00
Production Date	4/4/2017

CUSTOMER INFORMATION

Order Number	81336
Customer Name	Waste Management of Florida
Project Name	WMI Vista Landfill
Location	Apopka FL US

Pressure (psf)	*Gradient*	*Net/Composite*	*Transmissivity Results* (m^2/sec)	($gal/min/ft$)	*Seat Time (min)*	*Boundary*
10,000	0.10	NET	8.50E-03	41.06	15	SS Plates
500	0.02	Composite	1.42E-02	68.60	60	Soil/Geocomposite/Textured HDPE
500	0.02	Composite	8.81E-03	42.56	1440	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	5.15E-03	24.88	60	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	2.94E-03	14.20	1440	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	1.15E-03	5.56	6000	Soil/Geocomposite/Textured HDPE

GSE Environmental, LLC.

Transmissivity Report

ASTM D4716

Roll No. 131516628

ROLL IDENTIFICATION

Roll Number	131516628
Product Name	FS2-300E-08-08-E-00
Production Date	4/4/2017

CUSTOMER INFORMATION

Order Number	81336
Customer Name	Waste Management of Florida
Project Name	WMI Vista Landfill
Location	Apopka FL US

Pressure (psf)	*Gradient*	*Net/Composite*	*Transmissivity Results* (m^2/sec)	*Transmissivity Results* (*gal/min/ft*)	*Seat Time (min)*	*Boundary*
500	0.02	Composite	4.40E-03	21.26	60	Soil/Geocomposite/Textured HDPE
500	0.02	Composite	4.14E-03	20.00	1440	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	4.37E-03	21.11	60	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	1.21E-03	5.85	1440	Soil/Geocomposite/Textured HDPE

GSE Environmental, LLC.

Transmissivity Report

ASTM D4716

Roll No. 131516666

ROLL IDENTIFICATION

Roll Number	131516666
Product Name	FS2-300E-08-08-E-00
Production Date	4/4/2017

CUSTOMER INFORMATION

Order Number	81336
Customer Name	Waste Management of Florida
Project Name	WMI Vista Landfill
Location	Apopka FL US

Pressure (psf)	Gradient	Net/Composite	Transmissivity Results (m^2/sec)	Transmissivity Results (gal/min/ft)	Seat Time (min)	Boundary
500	0.02	Composite	3.15E-03	15.22	60	Soil/Geocomposite/Textured HDPE
500	0.02	Composite	4.37E-03	21.11	1440	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	9.75E-04	4.71	60	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	4.41E-03	21.30	1440	Soil/Geocomposite/Textured HDPE

GSE Environmental, LLC.

Transmissivity Report

ASTM D4716

Roll No. 131516704

ROLL IDENTIFICATION

Roll Number	131516704
Product Name	FS2-300E-08-08-E-00
Production Date	4/5/2017

CUSTOMER INFORMATION

Order Number	81336
Customer Name	Waste Management of Florida
Project Name	WMI Vista Landfill
Location	Apopka FL US

Pressure (psf)	*Gradient*	*Net/Composite*	*Transmissivity Results* (m^2/sec)	($gal/min/ft$)	*Seat Time (min)*	*Boundary*
500	0.02	Composite	1.03E-02	49.76	60	Soil/Geocomposite/Textured HDPE
500	0.02	Composite	5.85E-03	28.26	1440	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	3.13E-03	15.12	60	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	2.23E-03	10.77	1440	Soil/Geocomposite/Textured HDPE

Transmissivity Report

ASTM D4716

GSE Environmental, LLC.

Roll No. 131516751

ROLL IDENTIFICATION

Roll Number	131516751
Product Name	FS2-300E-08-08-E-00
Production Date	4/6/2017

CUSTOMER INFORMATION

Order Number	81336
Customer Name	Waste Management of Florida
Project Name	WMI Vista Landfill
Location	Apopka FL US

Pressure (psf)	*Gradient*	*Net/Composite*	*Transmissivity Results* (m^2/sec)	($gal/min/ft$)	*Seat Time (min)*	*Boundary*
500	0.02	Composite	9.55E-03	46.14	60	Soil/Geocomposite/Textured HDPE
500	0.02	Composite	4.48E-03	21.64	1440	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	6.33E-03	30.58	60	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	4.28E-03	20.68	1440	Soil/Geocomposite/Textured HDPE

Transmissivity Report

ASTM D4716

GSE Environmental, LLC.

Roll No. 131516778

ROLL IDENTIFICATION

Roll Number	131516778
Product Name	FS2-300E-08-08-E-00
Production Date	4/6/2017

CUSTOMER INFORMATION

Order Number	81336
Customer Name	Waste Management of Florida
Project Name	WMI Vista Landfill
Location	Apopka FL US

Pressure (psf)	*Gradient*	*Net/Composite*	*Transmissivity Results* (m^2/sec)	($gal/min/ft$)	*Seat Time (min)*	*Boundary*
500	0.02	Composite	1.39E-02	67.15	60	Soil/Geocomposite/Textured HDPE
500	0.02	Composite	2.70E-03	13.04	1440	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	5.08E-03	24.54	60	Soil/Geocomposite/Textured HDPE
12,000	0.02	Composite	4.09E-03	19.76	1440	Soil/Geocomposite/Textured HDPE

GSE Roll Allocation

Order SO-081336
Customer Waste Management of Florida
Project Name WMI Vista Landfill

TRI/AUSTIN
1/100,000 sf

Roll#	Resin Lot	Product Code	Mfg Date	Length
131516590	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516591	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516592	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516593	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516594	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516595	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516596	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516597	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516598	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516599	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516600	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516601	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516602	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516603-IS	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516604	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516605	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516606	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516607	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516608	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516609	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516610	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516611	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516612	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516613	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516614	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516615	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516616	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516617	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516618	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516619	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516620	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516621	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516622	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516623	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516624	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516625	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516626	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516627	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516628	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516629	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516630	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516631	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516632	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516633	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516634	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516635	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516636	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516637	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170

131516638	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516639	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516640	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516641	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516642	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516643	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516644	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516645	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516646	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516647	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516648	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516649	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516650	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516651	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516652	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516653	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516654	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516655	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516656	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516657	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516658	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516659	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516660	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516661	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516662	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516663	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516664	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516665	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516666	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516667	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516668	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516669	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516670	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516671	CB117B1102	FS2-300E-08-08-E-00	4/4/2017	170
131516672	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516673	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516674	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516675	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516676	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516677	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516678	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516679	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516680	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516681	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516682	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516683	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516684	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516685	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516686	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516687	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516688	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516689	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516690	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516692	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516693	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516694	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516695	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170

131516696	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516697	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516698	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516699	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516700	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516701	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516702	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516703	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516704	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516705	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516706	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516707	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516708	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516709	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516710	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516711	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	116
131516719	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516720	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516721	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516722	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516723	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516724	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
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131516730	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516731	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516732	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516733	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516734	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516735	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
131516736	CB117B1102	FS2-300E-08-08-E-00	4/5/2017	170
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131516742	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516743	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
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131516745	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516746	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516747	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516748	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516749	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516750	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516751	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
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131516760	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
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131516765	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516766	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516767	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516768	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516769	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516770	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516771	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516772	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516773	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516774	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516775	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516776	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516777	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516778	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516779	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516780	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516781	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170
131516782	CB117B1102	FS2-300E-08-08-E-00	4/6/2017	170

Conformance Tests

May 8, 2017 <====Updated with Trans
May 1, 2017

Mail To:

Sheree Grant
Waste Management, Inc.

email: sgrant@wm.com
email: pwalls@cecenv.com

Bill To:

<= Same (P.O. # 1114007819)

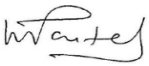
Dear Ms. Grant:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	**Vista Cell 5**
TRI Job Reference Number:	28345
Material(s) Tested:	Three, GSE FS2-300E-08-08-E-00 Double sided Geocomposite(s)
Test(s) Requested:	Transmissivity (ASTM D 4716) - GC Peel Strength (ASTM D 7005) - GC Mass/Unit Area (ASTM D 5261) - GT Grab Tensile (ASTM D 4632) - GT Trapezoidal Tear (ASTM D 4533) - GT Apparent Opening Size (ASTM D 4751) - GT Permittivity (ASTM D 4491) - GT

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,



Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

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

GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506590
TRI Log #: 28345

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			

Hydraulic Transmissivity (ASTM D 4716)

Direction Tested: Machine Direction

Normal Load (psf):	12,000
Hydraulic Gradient:	0.02
Test Length (in)	12
Test Width (in)	12

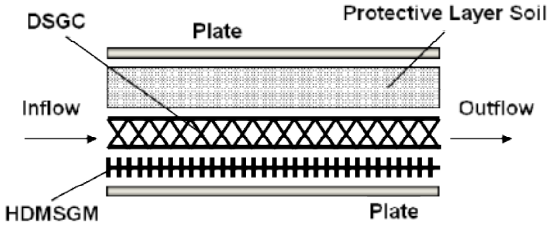


Plate / Protective Layer Soil / DSGC Sample / 60HDMSGM / Plate

Seat Time (hours)		Specimen	1										
	Volume (cc)		506	505	504								
	Time (s)		30.38	30.31	30.44								
100	Flow Rate (GPM/ft width)		0.26	0.26	0.26						**0.26**	0.00	
	Transmissivity (m^2/s)		2.66E-03	2.66E-03	2.64E-03						**2.65E-03**	9.33E-06	7.90E-04
	Test Temp (C)			21.4									
	Temp. Corr. Factor			0.972									

Hydraulic Transmissivity (ASTM D 4716)

Direction Tested: Machine Direction

Normal Load (psf):	500
Hydraulic Gradient:	0.02
Test Length (in)	12
Test Width (in)	12

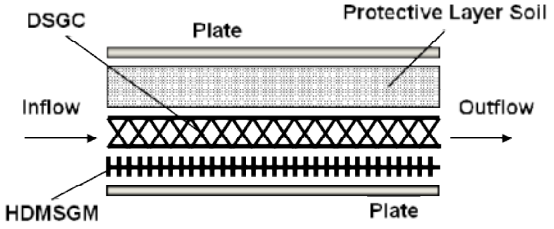


Plate / Protective Layer Soil / DSGC Sample / 60HDMSGM / Plate

Seat Time (hours)		Specimen	1										
	Volume (cc)		737	734	777								
	Time (s)		15.40	15.41	15.46								
24	Flow Rate (GPM/ft width)		0.73	0.73	0.77						**0.75**	0.02	
	Transmissivity (m^2/s)		7.59E-03	7.56E-03	7.98E-03						**7.71E-03**	2.31E-04	9.00E-04
	Test Temp (C)			21.6									
	Temp. Corr. Factor			0.967									

Peel Strength (ASTM D 7005)

A - MD Average Peel Strength (ppi)	3.35	2.44	1.98	4.07	1.40	**2.65**	1.07	1.0 min
A - MD Average Peel Strength (g/in)	1521	1108	899	1848	636	**1202**	485	
B - MD Average Peel Strength (ppi)	4.78	4.57	2.23	3.34	3.69	**3.72**	1.03	1.0 min
B - MD Average Peel Strength (g/in)	2170	2075	1012	1516	1675	**1690**	466	

Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction

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TRI ENVIRONMENTAL, INC.
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GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506590
TRI Log #: 28345

GEOTEXTILE - SIDE A

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter Circle - Mass (g)	4.11	4.02	3.43	3.68	3.92	3.83	3.90	3.56	3.71	3.94	**3.81**	0.21	
Mass/Unit Area (oz/sq.yd)	9.56	9.35	7.98	8.56	9.12	8.91	9.07	8.28	8.63	9.16	**8.86**	0.49	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	240	214	224	203	284	281	244	211	248	279	**243**	30	200 min
TD - Tensile Strength (lbs)	265	308	342	302	377	322	318	325	370	315	**325**	33	200 min
MD - Elong. @ Max. Load (%)	93	95	97	82	87	104	99	88	95	89	**93**	6	
TD - Elong. @ Max. Load (%)	97	89	91	91	91	101	78	86	87	80	**89**	7	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	94	96	91	90	67	85	84	93	89	77	**87**	9	75 min
TD - Tear Strength (lbs)	120	113	113	125	116	115	105	109	121	113	**115**	6	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.139	0.139	0.128	0.118	0.141						**0.133**	0.010	0.21 max
Sieve No.	100	100	100	100	100						**100**		
Permittivity (ASTM D 4491,Method C)													
Thickness (mil)	71	66	76	79	81	80	78	79	67	68	**75**	6	
Thickness (mm)	1.80	1.68	1.93	2.01	2.06	2.03	1.98	2.01	1.70	1.73	**1.89**	0.15	
Permittivity (Sec-1)	1.47	1.59	1.33	1.03	1.35	1.14	0.98	0.95	1.37	1.11	**1.23**	0.22	0.5 min
Permittivity (GPM/ft2)	110.0	118.9	99.5	77.0	101.0	85.3	73.3	71.1	102.5	83.0	**92.2**	16.4	
Flow rate (LPM/m2)	4480	4846	4053	3139	4114	3474	2987	2895	4175	3383	**3755**	670	
Permittivity (cm/sec)	0.265	0.267	0.257	0.207	0.278	0.232	0.194	0.191	0.233	0.192	**0.231**	0.034	

MD Machine Direction TD Transverse Direction

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TRI ENVIRONMENTAL, INC.
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GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506590
TRI Log #: 28345

GEOTEXTILE - SIDE B

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter Circle - Mass (g)	3.43	3.97	3.74	3.50	3.48	3.71	3.56	3.60	3.77	3.75	**3.65**	0.17	
Mass/Unit Area (oz/sq.yd)	7.98	9.23	8.70	8.14	8.09	8.63	8.28	8.37	8.77	8.72	**8.49**	0.39	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	251	327	237	293	271	284	233	287	265	256	**270**	28	200 min
TD - Tensile Strength (lbs)	305	357	335	410	305	324	386	320	323	340	**341**	34	200 min
MD - Elong. @ Max. Load (%)	95	109	97	100	89	110	87	99	93	71	**95**	11	
TD - Elong. @ Max. Load (%)	98	89	89	89	86	101	89	88	91	91	**91**	5	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	91	93	102	88	81	96	76	78	77	98	**88**	9	75 min
TD - Tear Strength (lbs)	95	132	130	153	137	122	127	142	142	129	**131**	16	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.112	0.146	0.114	0.143	0.125						**0.128**	0.016	0.21 max
Sieve No.	100	100	100	100	100						**100**		
Permittivity (ASTM D 4491,Method C)													
Thickness (mil)	77	72	78	73	83	80	79	86	87	76	**79**	5	
Thickness (mm)	1.96	1.83	1.98	1.85	2.11	2.03	2.01	2.18	2.21	1.93	**2.01**	0.13	
Permittivity (Sec-1)	0.88	1.53	0.96	1.53	1.07	1.55	1.12	1.17	1.00	1.36	**1.22**	0.26	0.5 min
Permittivity (GPM/ft2)	65.8	114.4	71.8	114.4	80.0	115.9	83.8	87.5	74.8	101.7	**91.0**	19.1	
Flow rate (LPM/m2)	2682	4663	2926	4663	3261	4724	3413	3566	3048	4145	**3709**	778	
Permittivity (cm/sec)	0.172	0.280	0.190	0.284	0.226	0.315	0.225	0.256	0.221	0.263	**0.243**	0.044	

MD Machine Direction TD Transverse Direction

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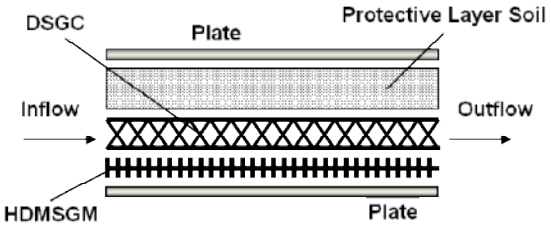
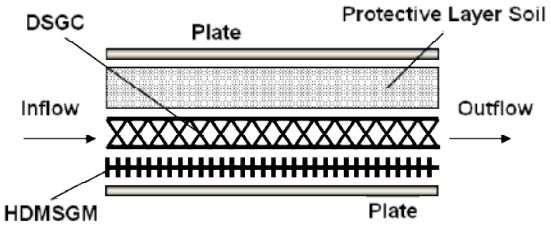
GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506666
TRI Log #: 28345

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Normal Load (psf):	12,000												
Hydraulic Gradient:	0.02												
Test Length (in)	12												
Test Width (in)	12												
Plate / Protective Layer Soil / DSGC Sample / 60HDMSGM / Plate													
Seat Time (hours)	Specimen		1										
	Volume (cc)	643	647	645									
	Time (s)	40.44	40.53	40.59									
100	Flow Rate (GPM/ft width)	0.25	0.25	0.25							**0.25**	0.00	
	Transmissivity (m^2/s)	2.55E-03	2.56E-03	2.55E-03							**2.55E-03**	6.35E-06	7.90E-04
	Test Temp (C)		21.2										
	Temp. Corr. Factor		0.976										
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Normal Load (psf):	500												
Hydraulic Gradient:	0.02												
Test Length (in)	12												
Test Width (in)	12												
Plate / Protective Layer Soil / DSGC Sample / 60HDMSGM / Plate													
Seat Time (hours)	Specimen		1										
	Volume (cc)	525	531	526									
	Time (s)	15.44	15.43	15.46									
24	Flow Rate (GPM/ft width)	0.52	0.53	0.52							**0.52**	0.00	
	Transmissivity (m^2/s)	5.37E-03	5.44E-03	5.37E-03							**5.39E-03**	3.66E-05	9.00E-04
	Test Temp (C)		21.8										
	Temp. Corr. Factor		0.963										
Peel Strength (ASTM D 7005)													
A - MD Average Peel Strength (ppi)	2.23	3.29	1.37	2.16	1.95						**2.20**	0.70	1.0 min
A - MD Average Peel Strength (g/in)	1012	1494	622	981	885						**999**	316	
B - MD Average Peel Strength (ppi)	2.63	3.99	2.40	4.75	3.74						**3.50**	0.98	1.0 min
B - MD Average Peel Strength (g/in)	1194	1811	1090	2157	1698						**1590**	444	





Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction

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TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506666
TRI Log #: 28345

GEOTEXTILE - SIDE A

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter Circle - Mass (g)	4.30	3.58	3.06	3.79	3.44	3.50	4.04	3.07	3.95	4.01	**3.67**	0.42	
Mass/Unit Area (oz/sq.yd)	10.00	8.33	7.12	8.82	8.00	8.14	9.40	7.14	9.19	9.33	**8.55**	0.97	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	231	189	286	267	281	340	298	208	271	262	**263**	44	200 min
TD - Tensile Strength (lbs)	389	306	288	383	331	351	348	292	353	329	**337**	35	200 min
MD - Elong. @ Max. Load (%)	117	89	85	101	86	91	99	91	105	105	**97**	10	
TD - Elong. @ Max. Load (%)	113	89	98	105	107	98	89	97	93	95	**99**	8	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	87	115	85	83	92	100	109	83	94	85	**93**	11	75 min
TD - Tear Strength (lbs)	117	147	118	147	119	135	117	153	109	133	**129**	16	75 min

MD Machine Direction TD Transverse Direction

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TRI ENVIRONMENTAL, INC.
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GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506666
TRI Log #: 28345

GEOTEXTILE - SIDE B

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter Circle - Mass (g)	3.33	3.73	4.05	3.68	3.56	3.93	3.70	3.96	3.81	3.65	**3.74**	0.21	
Mass/Unit Area (oz/sq.yd)	7.75	8.68	9.42	8.56	8.28	9.14	8.61	9.21	8.86	8.49	**8.70**	0.49	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	220	201	305	260	290	300	237	284	307	268	**267**	37	200 min
TD - Tensile Strength (lbs)	290	310	412	397	307	266	325	389	392	306	**339**	53	200 min
MD - Elong. @ Max. Load (%)	85	87	107	100	87	107	95	111	111	99	**99**	10	
TD - Elong. @ Max. Load (%)	107	88	98	103	94	91	96	94	102	108	**98**	7	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	98	108	87	85	90	86	92	89	95	89	**92**	7	75 min
TD - Tear Strength (lbs)	137	128	113	128	122	125	145	132	130	100	**126**	13	75 min

MD Machine Direction TD Transverse Direction

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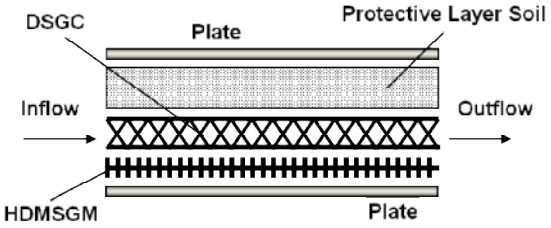
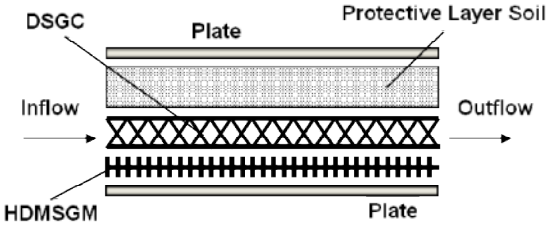
TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506751
TRI Log #: 28345

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Normal Load (psf):	12,000												
Hydraulic Gradient:	0.02												
Test Length (in)	12												
Test Width (in)	12												
Plate / Protective Layer Soil / DSGC Sample / 60HDMSGM / Plate													
Seat Time (hours)	Specimen		1										
	Volume (cc)		570	577	575								
	Time (s)		60.39	60.40	60.44								
100	Flow Rate (GPM/ft width)		0.15	0.15	0.15						**0.15**	0.00	
	Transmissivity (m^2/s)		1.51E-03	1.53E-03	1.52E-03						**1.52E-03**	9.28E-06	7.90E-04
	Test Temp (C)			21.3									
	Temp. Corr. Factor			0.974									
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Normal Load (psf):	500												
Hydraulic Gradient:	0.02												
Test Length (in)	12												
Test Width (in)	12												
Plate / Protective Layer Soil / DSGC Sample / 60HDMSGM / Plate													
Seat Time (hours)	Specimen		1										
	Volume (cc)		530	531	530								
	Time (s)		15.41	15.47	15.51								
24	Flow Rate (GPM/ft width)		0.53	0.53	0.53						**0.53**	0.00	
	Transmissivity (m^2/s)		5.47E-03	5.46E-03	5.44E-03						**5.46E-03**	1.81E-05	9.00E-04
	Test Temp (C)			21.5									
	Temp. Corr. Factor			0.970									
Peel Strength (ASTM D 7005)													
A - MD Average Peel Strength (ppi)	1.65	1.57	1.38	0.67	0.74						**1.20**	0.46	1.0 min
A - MD Average Peel Strength (g/in)	749	713	627	305	337						**546**	211	
B - MD Average Peel Strength (ppi)	6.44	2.55	3.71	1.08	3.10						**3.38**	1.97	1.0 min
B - MD Average Peel Strength (g/in)	2924	1158	1684	490	1407						**1533**	895	





Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction

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GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506751
TRI Log #: 28345

GEOTEXTILE - SIDE A

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter Circle - Mass (g)	3.61	3.38	4.24	3.98	3.68	3.58	3.26	3.46	3.66	3.57	**3.64**	0.29	
Mass/Unit Area (oz/sq.yd)	8.40	7.86	9.86	9.26	8.56	8.33	7.58	8.05	8.51	8.30	**8.47**	0.66	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	294	262	237	243	222	270	278	290	264	211	**257**	28	200 min
TD - Tensile Strength (lbs)	364	341	353	361	294	343	331	396	371	357	**351**	27	200 min
MD - Elong. @ Max. Load (%)	108	94	91	106	87	91	93	107	95	85	**96**	8	
TD - Elong. @ Max. Load (%)	101	92	91	91	97	93	87	93	85	104	**93**	6	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	102	107	82	79	96	93	114	89	92	88	**94**	11	75 min
TD - Tear Strength (lbs)	138	113	126	111	105	148	114	125	139	123	**124**	14	75 min

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS
TRI Client: Waste Management, Inc.
Project: Vista Cell 5

Material: GSE FS2-300E-08-08-E-00 Double sided Geocomposite
Sample Identification: 131506751
TRI Log #: 28345

GEOTEXTILE - SIDE B

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter Circle - Mass (g)	3.34	3.54	3.69	3.82	3.39	4.27	3.55	3.74	3.22	3.55	**3.61**	0.30	
Mass/Unit Area (oz/sq.yd)	7.77	8.23	8.58	8.89	7.89	9.93	8.26	8.70	7.49	8.26	**8.40**	0.69	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	301	257	233	232	261	249	274	248	264	284	**260**	22	200 min
TD - Tensile Strength (lbs)	344	393	349	336	294	317	384	367	377	356	**352**	31	200 min
MD - Elong. @ Max. Load (%)	111	94	98	92	105	89	105	101	103	105	**100**	7	
TD - Elong. @ Max. Load (%)	94	97	93	104	109	89	100	95	93	107	**98**	7	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	101	76	65	80	81	92	68	86	89	87	**82**	11	75 min
TD - Tear Strength (lbs)	144	126	121	97	151	128	121	122	120	129	**126**	15	75 min

MD Machine Direction TD Transverse Direction

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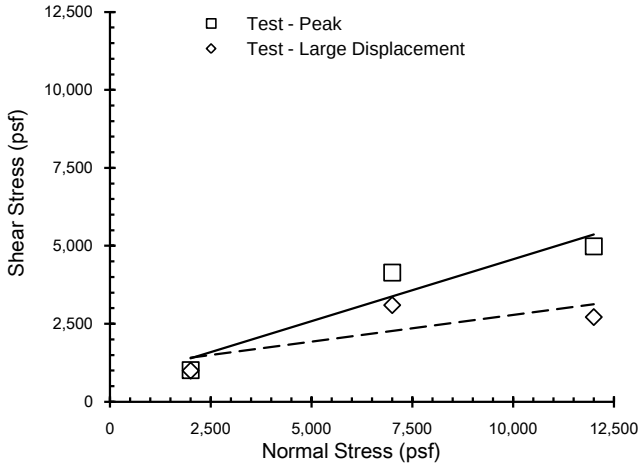
B.5 INTERFACE FRICTION TESTING

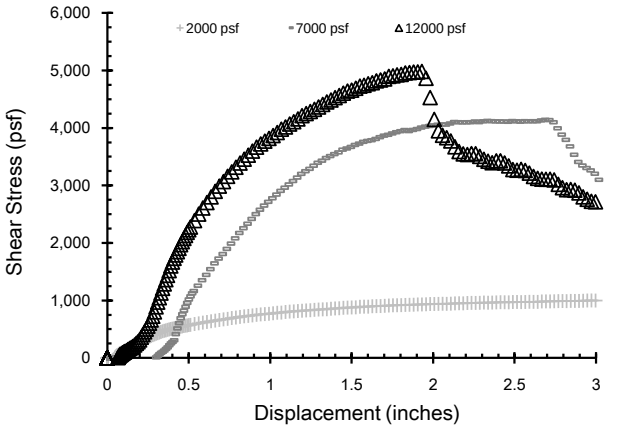
Multi-Layered Interface Friction Test (ASTM D5321 Modified)

Client: Waste Management, Inc.
Project: Vista Landfill Cell 5

TRI Log #: 26918-1
Jeffrey A. Kuhn, Ph.D., P.E., 5/9/2017
Analysis & Quality Review/Date

Protective Cover Sand vs. GSE FS2-300E-12-12 DSGC (131516603) vs. Agru MSGM 60 mil HD (G17D001229) vs. Structural Fill





Test Results, Linear Regression			
Mohr-Coulomb Parameters		Peak	Large Displacement
Friction Angle	Degrees	21.7	9.7
Y-intercept or Adhesion	psf	600	1,068
Minimum Secant Angle	Degrees	22.6	12.8

Note - Large Displacement Values Reported for 3.0 inches of Displacement

Test Conditions		
Upper Box	Protective Cover Sand [Tamp in Place]	
Floating	GSE FS2-300E-12-12 DSGC (131516603)	
	Agru MSGM 60 mil HD (G17D001229) [Shiny to Structural Fill]	
Lower Box	Structural Fill ω = 17.9 % γ_d = 106.1 pcf	
Conditioning	Wet - Loading applied and Interface flooded for a minimum of 15 minutes prior to shear.	
Shearing Rate	inches/minute	0.04
Test Notes		

Shearing occurred at the protective cover sand to DSGC under normal stresses of 2,000 and 7,000 psf. Shearing occurred at the GM to DSGC under a normal stress of 12,000 psf.

Specimen No.		-	1	2	3
Normal Stress		psf	2,000	7,000	12,000
Box Edge Dimension		in	12	12	12
Bearing Slide Resistance		lbs	27	75	122
Peak	Shear Stress	psf	1,013	4,142	4,983
	Secant Angle	deg.	26.9	30.6	22.6
Large Displacement	Shear Stress	psf	998	3,098	2,715
	Secant Angle	deg.	26.5	23.9	12.8
Asperity Height, Avg. of 5 Meas.		mils	32	33	34

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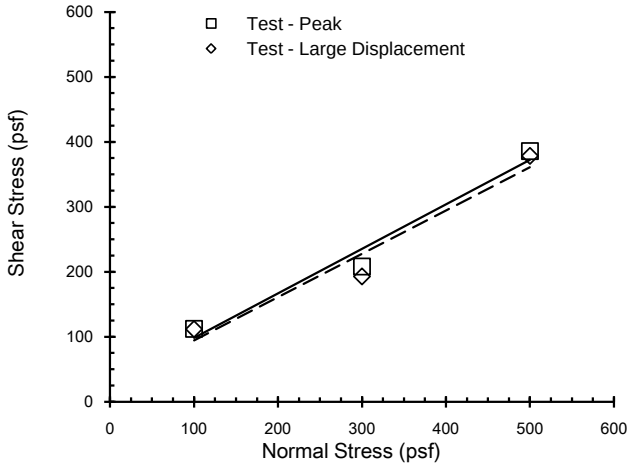
TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

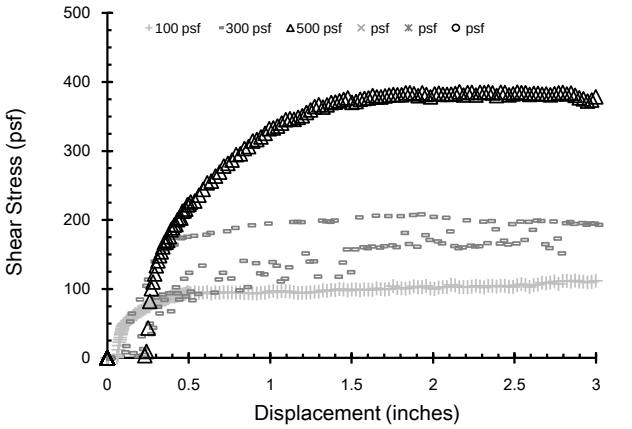
Multi-Layered Interface Friction Test (ASTM D5321 Modified)

Client: Waste Management, Inc.
Project: Vista Landfill Cell 5

TRI Log #: 26918-2
Jeffrey A. Kuhn, Ph.D., P.E., 5/11/2017
Analysis & Quality Review/Date

Protective Cover Sand vs. GSE FS2-300E-12-12 DSGC (131516603) vs. Agru MSGM 60 mil HD (G17D001229) vs. Structural Fill





Test Results, Linear Regression			
Mohr-Coulomb Parameters		Peak	Large Displacement
Friction Angle	Degrees	34.4	33.7
Y-intercept or Adhesion	psf	30	28
Minimum Secant Angle	Degrees	34.8	32.7

Note - Large Displacement Values Reported for 3.0 inches of Displacement

Test Conditions		
Upper Box	Protective Cover Sand [Tamp in Place]	
Floating	GSE FS2-300E-12-12 DSGC (131516603)	
	Agru MSGM 60 mil HD (G17D001229) [Shiny to Structural Fill]	
Lower Box	Structural Fill ω = 17.9 % γ_d = 106.1 pcf	
Conditioning	Wet - Loading applied and Interface flooded for a minimum of 15 minutes prior to shear.	
Shearing Rate	inches/minute	0.04

Test Notes

Shearing occurred at the cover sand to double sided geocomposite interface under a normal stresses of 100 psf. Shearing occurred at the structural fill to GM interfaces under normal stresses of 300 and 500 psf..

Specimen No.		-	1	2	3
Normal Stress		psf	100	300	500
Box Edge Dimension		in	12	12	12
Bearing Slide Resistance		lbs	9	11	13
Peak	Shear Stress	psf	112	208	386
	Secant Angle	deg.	48.3	34.8	37.7
Large Displacement	Shear Stress	psf	112	193	378
	Secant Angle	deg.	48.2	32.7	37.1
Asperity Height, Avg. of 5 Meas.		mils	34	33	33

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

C. GEOMEMBRANE CONSTRUCTION DATA

C.1 TENSIOMETER CALIBRATION

Demtech Services, Inc.

Placerville, California, USA

CALIBRATION CERTIFICATE

PT - 77701 A

Environmental Specialties Int'l

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell
Range: 0 - 750 lbs. Tension
Model No: M2405-750#
Serial No: **1514**

Calibration Apparatus:

Pro-Cal unit, model TC-0100/A

A/D Module Model No: T-029
A/D Module Serial No: **4914001514**
Channel No: N/A

Dead Weight:

W1	2
W2	152
W3	302

Reference Cell:

R1	2
R2	152
R3	302

Indicator reading with no load: 0

Offset: **7.157989** Scale: **3.326752**

Applied Force lbs.	Cell Response:	Deviation Error:
2	2	0.00
52	52	0.00
102	102	0.00
152	152	0.00
202	202	0.00
252	252	0.00
302	302	0.00

Total Deviation Error (%): 0.00%

Temperature at time of calibration: 73 degrees F
Exitation Voltage: 5 V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

CP Date: 02/22/17

Demtech Services, Inc.

Placerville, California, USA

CALIBRATION CERTIFICATE

PT - 77701 B

Environmental Specialties Int'l

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell
Range: 0 - 750 lbs. Tension
Model No: M2405-750#
Serial No: **6081**

Calibration Apparatus:

Pro-Cal unit, model TC-0100/A

A/D Module Model No: T-029
A/D Module Serial No: **4914006081**
Channel No: N/A

Dead Weight:

W1	2
W2	152
W3	302

Reference Cell:

R1	2
R2	152
R3	302

Indicator reading with no load: 0

Offset: **8.718470** Scale: **3.325231**

Applied Force lbs.	Cell Response:	Deviation Error:
2	2	0.00
52	52	0.00
102	102	0.00
152	152	0.00
202	202	0.00
252	252	0.00
302	302	0.00

Total Deviation Error (%): 0.00%

Temperature at time of calibration: 73 degrees F
Exitation Voltage: 5 V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

CP

Date: 02/22/17

C.2 TRIAL WELD

CEC

Trial Weld Information

Page 1 of 2

Date: 5-17-17
Daily Report No.: _____

Client: Vista Landfill
Project: Cell-5
Project No.: _____

Time	AMB Temp	Sample ID	Seamer ID	Machine ID	Extrusion Welds		Fusion Welds		Peel PPI			Shear PPI		Observer	P/F	Comments
					Barrel Temp	Preheat Temp	Wedge Temp	Wedge Speed								
07:22	70		PT	4181	—	—	860	7	138 128	144 113	124 142	120 128	178 162 175	TCB	P	SS
07:31	70		LN	4153	—	—	860	7	140 134	133 143	131 140	128 132	171 176 174 169	TCB	P	SS
07:35	70		BV	4179	—	—	860	7	131 138	138 153	129 140	133 137	178 177 196	TCB	P	SS
07:39	70		LN	4153	—	—	860	5	141 139	128 136	138 144	130 133	180 178 169 174	TCB	P	ST
07:37	70		LN	4153	—	—	860	4	145 140	139 137	144 136	132 145	183 181 178 182	TCB	P	TT
13:38	86		PT	4181	—	—	860	7	116 113	107 110	111 114	121 115	140 145 144 143	TCB	P	SS
13:35	86		LN	4153	—	—	860	7	117 130	131 126	115 120	127 122	157 153 155 150	TCB	P	SS
13:42	86		BV	4179	—	—	860	7	116 116	122 127	124 125	127 136	140 154 150 162	TCB	P	SS
13:40	86		LN	4153	—	—	860	5	119 120	124 115	117 120	120 124	147 143 154 149	TCB	P	ST
13:45	86		LN	4153	—	—	860	4	130 125	132 119	123 135	117 122	155 159 161 157	TCB	P	TT

MIN REG. VALUES:
Material _____
Peel Extrusion _____
Peel Fusion _____
Shear _____

CEC

Trial Weld Information

Page 2 of 6

Date: 5-18-17
Daily Report No.:

Client: Vista Landfill
Project: Cell-5
Project No.:

Time	AMB Temp	Sample ID	Seamer ID	Machine ID	Extrusion Welds: Barrel Temp	Extrusion Welds: Preheat Temp	Fusion Welds: Wedge Temp	Fusion Welds: Wedge Speed	Peel PPI			Shear PPI	Observer	P/F	Comments
07:30	70		JT	5173	550	550	—	—	157	150	146	145	162 157 164 169	TCB	P	TT
07:26	70		PT	4181	—	—	860	7	115 120	128 128	126 143	124 130	168/163 166/170	TCB	P	SS
07:49	70		LN	4153	—	—	860	7	118 122	125 122	129 110	127 110	162/159 160/163	TCB	P	SS
07:55	72		BV	4179	—	—	860	7	115 121	119 115	110 116	121 125	161 164 162 168	TCB	P	SS
07:58	72		BV	4179	—	—	860	5	138 133	126 129	130 132	126 135	166, 169 163, 166	TCB	P	TT
07:52	72		LN	4153	—	—	860	4	131 119	126 137	125 122	130 134	163 165 159 162	TCB	P	TT
07:55	72		LN	4153	—	—	860	5	118 123	117 126	131 123	134 121	157 160 159, 161	TCB	P	TS
07:30	72		PT	4181	—	—	860	5	118 121	122 120	119 127	128 130	155 164 162 158	TCB	P	TS
07:35	72		PT	4181	—	—	860	4	126 133	120 124	135 127	136 130	162, 158 163, 157	TCB	P	TT
10:25	80		DV	3988	—	—	860	7	109 120	112 115	122 119	123 124	149 152 152, 148	TCB	P	SS
10:20	80		DV	3988	—	—	860	4	128 126	120 119	117 130	131 115	156, 159 149, 152	TCB	P	T.T
08:40	77		AP	5057	500	550	—	—	148	140	145	136	163 160 159/156	TCB	P	TT
13:00	80		PT	4181	—	—	860	7	110 116	119 121	123 109	117 115	146, 158 151, 146	TCB	P	SS
13:05	86		LN	4153	—	—	860	7	126 120	118 124	129 130	131 117	152 147 145 150	TCB	P	SS

MIN REG. VALUES:
Material
Peel Extrusion
Peel Fusion
Shear

CEC

Trial Weld Information

Date: 5-18-17
Daily Report No.: _____

Client: Vista Landfill
Project: Cell-5
Project No.: _____

Time	AMB Temp	Sample ID	Seamer ID	Machine ID	Extrusion Welds		Fusion Welds		Peel PPI / Shear PPI	Observer	P/F	Comments
					Barrel Temp	Preheat Temp	Wedge Temp	Wedge Speed				
13:05	86		BV	4179	—	—	860	7	111 116 123 117 / 111 113 113 121 126 124 / 149 146	TCB	P	SS
13:10	86		DV	3988	—	—	860	7	127 119 116 123 / 150 147 121 106 122 120 / 145 148	TCB	P	SS
13:10	86		LN	4153	—	—	860	5	123 110 122 123 / 145 147 117 109 116 120 / 149 144	TCB	P	ST
13:15	86		LN	4153	—	—	860	4	130 132 113 124 / 151 148 126 114 125 126 / 152 146	TCB	P	TT
13:05	86		PT	4181	—	—	860	5	110 122 115 123 / 143 145 118 123 121 120 / 144 146	TCB	P	ST
13:10	86		PT	4181	—	—	860	4	112 122 121 116 / 150 148 116 120 123 129 / 151 147	TCB	P	TT
13:10	86		BV	4179	—	—	860	5	127 115 131 132 / 155 153 115 129 124 117 / 144 147	TCB	P	TT
13:15	86		DV	3988	—	—	860	4	122 119 125 123 / 148 151 125 123 129 118 / 151 146	TCB	P	TT
13:00	86		JT	5173	550	550	—	—	136 129 133 131 / 149 153 156 145	TCB	P	TT
13:05	86		AP	5057	550	500	—	—	130 127 125 132 / 149 147 151 145	TCB	P	TT

MIN REG. VALUES:
Material _____
Peel Extrusion _____
Peel Fusion _____
Shear _____

CEC

Trial Weld Information

Date: 5-19-17
Daily Report No.: _____

Client: Vista Landfill
Project: Cell-5
Project No.: _____

Time	AMB Temp	Sample ID	Seamer ID	Machine ID	Extrusion Welds		Fusion Welds		Peel PPI				Shear PPI		Observer	P/F	Comments
					Barrel Temp	Preheat Temp	Wedge Temp	Wedge Speed									
07:20	73		PT	4181	~	~	860	7	115 109	118 111	119 112	127 110	159 160	154 157	TCB	P	SS
07:23	73		LN	4153	~	~	860	7	117 119	113 110	115 119	128 116	151 152	153 156	TCB	P	SS
07:24	73		BV	4179	~	~	860	7	117 136	127 115	119 125	123 121	169 164	171 166	TCB	P	SS
07:26	73		BV	4179	~	~	860	5	130 137	128 140	142 136	130 135	160 157	157 161	TCB	P	TT
07:27	73		LN	4153	~	~	860	5	124 132	127 132	121 130	131 133	146 152	146 150	TCB	P	TT
07:30	73		LN	4153	~	~	860	4	107 129	104 130	123 122	112 118	157 142	153 [illegible]	TCB	P	ST
07:20	73		JT	5173	550	550	~	~	127	126	131	132	144 143	[illegible]	TCB	P	TT
07:20	73		AP	5057	500	550	~	~	124	130	133	135	147 150 146 155		TCB	P	TT
09:45	80		MA	5016	500	550	~	~	123	126	130	129	151 152 149 146		TCB	P	TT
10:40	80		BV	5170	500	550	~	~	122	131	127	132	147 153 151 148		TCB	P	TT

MIN REG. VALUES:
Material _____
Peel Extrusion _____
Peel Fusion _____
Shear _____

CEC

Trial Weld Information

Page 5 of 6

Date: 5-20-17
Daily Report No.: _____

Client: Vista Landfill
Project: Cell-5
Project No.: _____

Time	AMB Temp	Sample ID	Seamer ID	Machine ID	Extrusion Welds		Fusion Welds		Peel PPI				Shear PPI	Observer	P/F	Comments
					Barrel Temp	Preheat Temp	Wedge Temp	Wedge Speed								
07:25	70	. .	JT	5173	550	550	—	—	142	137	140	129	142 167 159 160	TCB	P	TT
				—												

MIN REG. VALUES:
Material _____
Peel Extrusion _____
Peel Fusion _____
Shear _____

CFC

Trial Weld Information

Date: 6-20-17
Daily Report No.: 48

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Time	AMB Temp	Sample ID	Seamer ID	Machine ID	Extrusion Welds		Fusion Welds		Peel PPI			Shear PPI		Observer	P/F	Comments
					Barrel Temp	Preheat Temp	Wedge Temp	Wedge Speed								
11:00	80		JS	5173	550	550	—	—	110	122	125	114	134 142 150 146	TCB	P	T/T
16:00	87		JS	5133	550	550	—	—	113	120	111	125	141 143 152 148	TCB	P	T/T

MIN REG. VALUES: Material _____ Peel Extrusion _____ Peel Fusion _____ Shear _____

C.3 PANEL PLACEMENT LOGS

CEC

Panel Placement Information

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-1	P	N. Slope	07:20	0+00	2+54	2+54	G17D001249	TCB	
P-2	P	"	07:30	0+00	2+49	2+49	"	TCB	
P-3	P	"	07:40	0+00	2+53	253	G17D001254	TCB	
P-4	P	"	07:50	0+00	2+57	257	"	TCB	
P-5	P	"	07:55	0+00	2+57	257	G17D001257	TCB	
P-6	P	"	08:05	0+00	2+54	254	"	TCB	
P-7	P	"	08:10	0+00	2+54	254	G17D001237	TCB	
P-8	P	"	08:20	0+00	2+54	254	"	TCB	
P-9	P	"	08:30	0+00	2+54	254	G17D001259	TCB	
P-10	P	"	08:38	0+00	2+54	254	"	TCB	
P-11	P	"	09:05	0+00	2+28	228	G17D001270	TCB	
P-12	P	"	09:10	0+00	2+67	267	"	TCB	
P-13	P	"	09:20	0+00	2+67	267	"	TCB	
P-14	P	"	09:25	0+00	2+38	238	"	TCB	
P-15	P	"	09:40	0+00	2+11	211	G17D001261	TCB	
					Total Length	3751	× 23 = 86,273 ft²		

CEC

Panel Placement Information

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-16	1	Floor	09:45	0+00	1+83	183	GITD001261	TCB	
P-17	1	"	09:50	0+00	1+21	121	"	TCB	
P-18	1	"	09:55	0+00	0+91	91	GITD001231	TCB	
P-19	1	N.W. Corner	10:30	0+00	2+63	263	"	TCB	
P-20	1	" "	10:40	0+00	1+49	149	"	TCB	
P-21	1	" "	10:50	1+44	2+63	119	GITD001264	TCB	
P-22	1	" "	11:05	0+00	1+65	165	"	TCB	
P-23	1	" "	11:10	0+00	1+82	182	"	TCB	
P-24	1	" "	11:30	0+00	1+46	146	GITD001267	TCB	
P-25	1	" "	11:50	0+00	1+30	130	"	TCB	
P-26	1	" "	11:55	0+00	1+11	111	"	TCB	
P-27	1	" "	12:00	0+00	0+91	91	"	TCB	
P-28	1	" "	12:10	0+00	0+70	70	GITD001269	TCB	
P-29	1	" "	12:15	0+00	0+42	42	"	TCB	
P-30	1	" "	12:20	0+00	0+12	12	"	TCB	
					Total Length	1975	x 23 = 45,425 ft²		

CEC

Panel Placement Information

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-31	P	West Slope	13:20	0+00	1+93	193	G17D001269	TCB	
P-32	P	" "	13:45	0+00	1+93	193	"	TCB	
P-33	P	Floor	13:47	2+39	2+56	17	"	TCB	
P-34	P	West Slope	13:55	0+00	1+85	185	G17D001262	TCB	
P-35	P	" "	14:35	0+00	0+79	79	"	TCB	
P-36	P	" "	14:50	0+00	1+79	179	"	TCB	
P-37	P	" "	15:00	0+00	1+49	149	"	TCB	
P-38	P	" "	15:15	0+00	1+79	179	G17D001242	TCB	
P-39	P	" "	15:20	0+00	1+80	186	"	TCB	
P-40	P	" "	15:30	1+48	1+68	20	G17D001282	TCB	5
					Total Length	1201	× 23 = 27,623 ft²		

CEC

Panel Placement Information

Page 4 of 9

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-41	1	West Slope	07:40	0+00	1+51	151	G17D001250	TCB	
P-42		" "	07:50	0+00	1+55	155	"	TCB	
P-43		" "	07:55	0+00	1+55	155	"	TCB	
P-44		" "	07:59	0+00	1+56	156	G17D001258	TCB	
P-45		" "	08:05	0+00	1+57	157	"	TCB	
P-46		" "	08:10	0+00	1+57	157	"	TCB	
P-47		" "	08:15	0+00	1+59	159	G17D001241	TCB	
P-48		" "	08:20	0+00	1+59	159	"	TCB	
P-49		South East Slope	09:00	0+00	1+11	111	G17D001253	TCB	
P-50		" " "	09:20	0+00	1+34	134	G17D001241	TCB	
P-51		" " "	09:22	1+08	1+21	13	G17D001253	TCB	
P-52		" " "	09:27	0+00	0+50	50	"	TCB	
P-53		" " "	09:33	0+00	0+92	92	"	TCB	
P-54		" " "	09:36	0+00	0+92	92	"	TCB	
P-55		East Tie in	09:40	4+24	5+74	150	"	TCB	
					Total Length	1891			

x23 = 43,493 ft2

CEC

Panel Placement Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-56	P	EAST TIE IN	09:45	2+80	2+22	142	G17D00 1242	TCB	
P-57	P	" "	09:48	2+50	2+80	30	"	TCB	
P-58	P	" "	09:55	2+22	2+50	28	"	TCB	
P-59	P	" "	09:58	1+85	2+22	37	"	TCB	
P-60	P	EB or	10:02	0+00	1+25	125	G17D00 1235	TCB	
P-61	P	"	10:04	0+00	1+21	121	"	TCB	
P-62	P	"	10:08	1+21	1+49	28	"	TCB	
P-63	P	"	10:10	0+00	1+65	165	"	TCB	
P-64	P	"	10:15	0+00	0+96	96	"	TCB	
P-65	P	"	10:18	0+96	1+65	69	G17D00 1243	TCB	
P-66	P	"	10:20	1+65	1+70	5	G17D00 1235	TCB	
P-67	P	"	10:25	0+00	2+60	260	G17D00 1243	TCB	
P-68	P	"	10:30	0+00	2+10	210	"	TCB	
P-69	P	"	10:32	2+10	2+47	37	"	TCB	
P-70	P	"	10:45	0+00	0+29	29	"	TCB	
					Total Length	1382	x 23 = 31,786		

CEC

Panel Placement Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-71	P	Floor	10:50	0+29	2+49	220	G17D001263	TCB	
P-72	P	"	10:55	0+00	2+55	255	"	TCB	
P-73	P	"	10:59	2+55	2+79	24	"	TCB	
P-74	P	"	11:02	0+00	2+75	275	G17D001234	TCB	
P-75	P	"	11:04	2+75	2+99	24	G17D001263	TCB	
P-76	P	"	11:08	0+00	2+53	253	G17D001234	TCB	
P-77	P	"	11:13	2+53	3+01	48	G17D001248	TCB	
P-78	P	"	11:16	3+01	3+07	6	G17D001263	TCB	
P-79	P	"	11:21	0+00	3+18	318	G17D001248	TCB	
P-80	P	"	11:25	0+00	1+27	127	"	TCB	
P-81	P	"	11:28	1+27	3+18	191	G17D001245	TCB	
P-82	P	"	11:35	3+18	3+38	20	G17D001248	TCB	
P-83	P	"	11:38	0+00	3+15	315	G17D001245	TCB	
P-84	P	"	11:44	0+00	2+60	260	G17D001230	TCB	
P-85	P	"	11:48	2+60	2+94	34	G17D001245	TCB	
					Total Length	2370	x23 = 54,510		

CEC

Panel Placement Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-86	P	F100 ✓	11:40	0+00	2+69	269	G17D00 1230	TCB	
P-87	P	"	12:42	2+69	2+89	20	G17D00 1250	TCB	
P-88	P	"	13:30	0+00	2+89	289	G17D00 1260	TCB	
P-89	P	"	13:33	0+00	2+30	230	"	TCB	
P-90	P	"	13:36	2+30	2+76	46	G17D00 1238	TCB	
P-91	P	"	13:35	0+00	2+76	276	G17D00 1238	TCB	
P-92	P	"	13:45	0+00	1+77	177	"	TCB	
P-93	P	"	13:50	1+77	2+95	118	G17D00 1239	TCB	
P-94	P	"	13:55	0+00	0+18	18	G17D00 1238	TCB	▷
P-95	P	"	14:00	0+00	3+00	300	G17D00 1239	TCB	
P-96	P	"	14:05	0+00	1+10	110	"	TCB	
P-97	P	"	14:10	1+10	3+00	190	"	TCB	
P-98	P	"	14:15	0+00	2+97	297	G17D00 1265	TCB	
P-99	P	"	14:20	0+00	0+40	40	"	TCB	
P-100	P	"	14:25	0+40	2+96	256	G17D00 1246	TCB	
					Total Length	2576	x 23 = 59,248		

CEC

Panel Placement Information

Page 8 of 9

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-101	P	Floor	14:30	0+00	2+72	272	G17D00/240	TCB	
P-102	P	"	14:35	2+72	2+96	24	G17D00/252	TCB	
P-103	P	"	14:40	0+00	2+94	294	"	TCB	
P-104	P	"	14:45	0+00	2+03	203	G17D00/229	TCB	
P-105	P	"	14:50	2+03	3+00	97	G17D00/244	TCB	
P-106	P	"	14:55	0+00	3+00	300	"	TCB	
P-107	P	"	15:00	0+00	1+30	130	G17D00/229	TCB	
P-108	P	"	15:05	1+30	3+00	170	G17D00/229	TCB	
					Total Length	1490	x 23 = 34,270 ft2		

CEC

Panel Placement Information

Date: 5-19-17
Daily Report No.: 22

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Panel Number	Layer	Location	Time	Station Beg.	Station End	Deployed Panel Length	Batch/Roll Number	Observer	Comments/Damage
P-109	P	West Slope	07:45	0+00	1+88	188	G17D001240	TCB	Sump
P-110	P	" "	08:20	0+00	1+88	188	G17D001256	TCB	Sump
P-111	P	Floor	08:35	0+00	2+82	282	"	TCM	
P-112	P	"	08:50	0+00	1+70	170	"	TCB	
P-113	P	"	09:00	1+79	14-85	6	G17D001247	TCB	
P-114	P	"	09:05	0+00	2+85	285	"	TCB	
P-115	P	"	09:15	0+00	2+85	285	"	TCB	
					Total Length	1404	x 23 = 32,292 ft2		

C.4 PANEL SEAMING LOGS

CEC

Panel Seaming Information

Date: 5-17-17
Daily Report No.: 20
Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41
Machine ID: 4181
Seamer ID: PT

Seam ID	Speed / Temperature	Start Time	Station		Seam Length	Observer	Comments
			Beg.	End			
P-1 / P-2	7 / 860	07:35	0+00	2+49	249	TCB	DS-1
P-4 / P-5	" "	08:04	0+00	2+54	254	TCB	
P-6 / P-7	" "	08:35	0+00	2+56	256	TCB	DS-3
P-9 / P-10	" "	09:07	0+00	2+54	254	TCB	
P-13 / P-14	" "	09:37	0+00	2+38	238	TCB	
P-16 / P-17	" "	10:03	1+20	0+00	120	TCB	DS-5
P-17 / P-18	" "	10:18	0+91	0+00	91	TCB	
P-23 / P-24	" "	11:42	0+00	1+46	146	TCB	
P-24 / P-25	" "	12:02	0+00	1+30	130	TCB	
P-27 / P-28	" "	12:20	0+00	0+70	70	TCB	DS-8
P-28 / P-29	" "	12:33	0+00	0+42	42	TCB	
P-23 / P-31	" "	13:40	0+00	1+82	182	TCB	
P-32 / P-34	" "	14:11	0+00	1+85	185	TCB	DS-9
P-34 / P-35	" "	14:58	0+00	0+79	79	TCB	
P-36 / P-37	" "	15:10	0+00	1+49	149	TCB	

Total: 2445

CEC

Panel Seaming Information

Page 2 of 23

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 1481
Seamer ID: PT

Seam ID	Speed / Temperature	Start Time	Station		Seam Length	Observer	Comments
			Beg.	End			
P-38 / P-35	7 / 860	15:35	0+00	1+86	186	TCB	DS-15
P-23 / P-22	7 / 860	13:40	0+00	0+27	27	TCB	
P-19 / P-20	7 / 860	10:48	0+00	1+44	144	TCB	
P-19 / P-21	7 / 860	11:02	1+44	2+63	119	TCB	

Total: 4+76

CEC

Panel Seaming Information

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4153
Seamer ID: LN

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-2/P-3	7 / 860	07:48	0+00	2+52	252	TCB	DS-2
P-3/P-4	" "	08:16	0+00	2+54	254	TCB	
P-8/P-9	" "	08:43	0+00	2+54	254	TCB	DS-6
P-11/P-12	" "	09:03	0+00	2+28	228	TCB	DS-7
P-14/P-15	" "	09:48	2+11	0+00	211	TCB	
P-20/P-21	" "	11:02	0+00	0+23	23	TCB	
P-25/P-26	" "	12:05	0+00	1+11	111	TCB	
P-26/P-27	" "	12:18	0+00	0+91	91	TCB	
P-29/P-30	" "	12:34	0+00	0+12	12	TCB	
P-22/P-24	N.W. Corner	13:53	1+65	1+40	25	TCB	
P-22/P-25	" "	13:56	1+40	1+14	26	TCB	
P-22/P-26	" "	13:58	1+14	0+89	25	TCB	DS-11
P-22/P-27	" "	14:01	0+89	0+63	24	TCB	
P-22/P-28	" "	14:03	0+63	0+37	26	TCB	
P-22/P-29	" "	14:05	0+37	0+11	26	TCB	

Total: 1590

CEC

Panel Seaming Information

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4153
Seamer ID: ZN

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-22 / P-30	7 / 860	14:07	0+17	0+00	11	TCB	
P-35 / P-36	" "	15:08	0+00	0+79	79	TCB	
P-34 / P-36	" "	15:18	0+79	1+83	104	TCB	
P-37 / P-38	" "	15:42	0+00	1+48	148	TCB	DS-12
P-38 / P-40	" "	15:55	1+48	1+68	20	TCB	
P-36 / P-38	" "	16:00	1+68	1+79	11	TCB	
P-33 / P-40	" "	16:04	1+49	1+69	20	TCB	
P-11 / Existing	" "	16:25	0+00	2+25	225	TCB	DS-13
P-10 / P-12	" "	10:11	0+00	0+28	28	TCB	
P-10 / P-13	" "	10:16	0+28	0+65	37	TCB	
P-10 / P-14	" "	10:19	0+65	1+02	37	TCB	
P-10 / P-15	" "	10:21	1+02	1+38	36	TCB	
P-10 / P-16	" "	10:24	1+38	1+75	37	TCB	
P-10 / P-17	" "	10:28	1+75	2+13	38	TCB	
P-10 / P-18	" "	10:32	2+13	2+49	36	TCB	

Total: 869

CEC

Panel Seaming Information

Page 5 of 23

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4153
Seamer ID: LN

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-20/P-22	7 / 860	11:14	0+00	1+49	149	TCB	
P-21/P-22	7 / 860	11:26	1+49	1+80	31	TCB	
P-32/P-33	4 / 860	14:18	0+00	0+14	14	TCB	
P-33/P-21	5 / 860	14:29	2+39	2+56	17	TCB	
P-32/21	5 / 860	14:32	2+39	2+31	8	TCB	
P-31/P-21	5 / 860	15:34	2+31	2+07	24	TCB	
P-23/P-21	5 / 860	14:38	2+07	1+80	27	TCB	

Total 270

CEC

Panel Seaming Information

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4179
Seamer ID: BV

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-5 / P-6	7 / 810	08:15	0+00	2+54	254	TCB	DS-4
P-7 / P-8	" / "	08:46	0+00	2+55	255	TCB	
P-12 / P-13	" "	09:33	0+00	2+67	267	TCB	
P-15 / P-16	" "	10:05	1+83	0+00	183	TCB	DS-14
P-31 / P-32	" "	13:55	0+00	1+93	193	TCB	DS-15
P-1 / P-19	" "	10:45	0+00	2+67	267	TCB	

Total: ~~132~~ 1419

CEC

Panel Seaming Information

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Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4181
Seamer ID: PT

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-41 / P-42	7 / 860	07:58	0+00	1+50	150	TCB	250
P-44 / P-45	" "	08:10	0+00	1+57	157	TCB	250
P-47 / P-48	" "	08:28	0+00	1+59	159	TCB	250
P-51 / P-52	" "	09:45	0+00	0+11	11	TCB	
P-52 / P-53	" "	09:48	0+00	0+50	50	TCB	
P-53 / P-54	" "	09:38	0+00	0+92	92	TCB	
P-54 / P-60	" "	10:05	0+00	0+23	23	TCB	
P-53 / P-60	" "	10:07	0+23	0+47	23	TCB	
P-52 / P-60	" "	10:09	0+47	0+70	23	TCB	
P-51 / P-60	" "	10:11	0+70	0+77	7	TCB	
P-50 / P-60	" "	10:12	0+77	1+04	27	TCB	
P-63 / P-64	" "	10:23	0+00	0+93	93	TCB	
P-65 / P-66	" "	10:41	0+00	0+23	23	TCB	
P-67 / P-68	" "	10:48	0+00	2+00	200	TCB	
P-72 / P-74	" "	11:10	0+00	2+55	255	TCB	

Total: 1293

CEC

Panel Seaming Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4181
Seamer ID: PT

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-80/P-83	7/860	11:42	0+00	1+27	127	TCB	
P-81/P83	" "	11:53	1+27	3+15	188	TCB	315
P-60/P-55	5/860	13:08	0+00	0+32	32	TCB	
P62/P55	" "	13:10	0+32	0+63	31	TCB	
P-63/P55	" "	13:12	0+63	0+94	31	TCB	
P-66/P55	" "	13:14	0+94	1+24	30	TCB	
P-67/P-55	" "	13:16	1+24	1+52	28	TCB	
P-56/P-69	" "	13:18	1+52	1+85	33	TCB	
P56/P-71	" "	13:20	1+85	2+16	31	TCB	
P56/P73	" "	13:22	2+16	2+46	30	TCB	
P-56/P-75	" "	13:24	2+46	2+76	30	TCB	
P-56/P-78	" "	13:26	2+76	2+94	18	TCB	
P57/P-78	" "	13:27	2+94	3+07	13	TCB	
P57 P-79	" "	13:29	3+07	3+24	18	TCB	
P58/P79	" "	13:30	3+24	3+33	9	TCB	
				Total:	649		

CEC

Panel Seaming Information

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Date: 5-18-17
Daily Report No.: 71

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4181
Seamer ID: PT

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
Existing/P-59	4 / 860	15:21	2+25	2+62	37	TCB	
Existing/P-58	" "	15:18	2+62	2+93	31	TCB	
Existing/P-57	" "	15:14	2+93	3+27	34	TCB	
Existing/P-56	" "	15:07	3+24	4+62	138	TCB	
Existing/P-55	" "	14:45	4+62	6+32	138	TCB	
Existing/P-49	" "	14:17	6+32	7+49	117	TCB	
P-63/P-65	7 / 860	10:34	0+93	1+64	71	TCB	
P-63/P-66	7 / 860	10:40	1+64	1+70	6	TCB	
P-73/P-74	7 / 860	11:37	2+55	2+74	19	TCB	
P-73/P-75	7 / 860	11:39	2+74	2+79	5	TCB	
P16/P-88	4 / 860	16:04	1+44	1+50	6	TCB	
P-P17/P-88	4 / 860	16:07	1+50	1+73	23	TCB	
P-18/P88	4 / 860	16:10	1+73	1+77	4	TCB	repaired R144
P18/P-90	4 / 860	16:11	1+77	2+00	23	TCB	
P-18/P-91	4 / 860	16:13	2+00	2+29	29	TCB	

Total: 678

CEC

Panel Seaming Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4131
Seamer ID: PT

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-18 / P-94	4 / 860	16:15	0+00	0+18	18	TCB	
P-10 / P-94	4 / 860	16:17	2+49	2+54	6	TCB	
P-93 / P-94	4 / 860	16:19	2+29	2+41	12	TCB	
P-10 / P-93	4 / 860	16:21	2+41	2+52	11	TCB	
P-10 / P-95	4 / 860	16:23	2+52	2+64	12	TCB	
P-9 / P-95	4 / 860	16:25	2+64	2+75	11	TCB	
P-9 / P-97	4 / 860	16:27	2+75	2+86	11	TCB	
P-8 / P-97	4 / 860	16:29	2+86	2+99	13	TCB	
P-8 / P-98	4 / 860	16:31	2+99	3+10	11	TCB	
P-7 / P-98	4 / 860	16:33	3+10	3+22	12	TCB	
P-7 / P-100	4 / 860	16:35	3+22	3+45	23	TCB	
P-6 / P-100	4 / 860	16:37	3+45	3+55	10	TCB	
P-6 / P-102	4 / 860	16:39	3+55	3+65	10	TCB	
P-5 / P-102	4 / 860	16:41	3+65	3+68	3	TCB	
P-5 / P-103	4 / 860	16:43	3+68	3+78	10	TCB	

Total: 173

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Panel Seaming Information

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Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4181
Seamer ID: PT

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-4 / P-103	4 / 810	16:45	3+78	3+91	13	TCB	
P-4 / P-105	" "	16:47	3+91	4+01	10	TCB	
P-3 / P-105	" "	16:49	4+01	4+14	13	TCB	
P-3 / P-106	" "	16:51	4+14	4+26	12	TCB	
P-2 / P-106	" "	16:53	4+26	4+38	12	TCB	
P-1 / P108	" "	16:57	4+48	4+72	24	TCB	
P-1 / P-111	" "	17:01	4+72	4+80	8	TB	
P2/P108	" "	16:55	4+38	4+48	10	TB	

Total: 102

CEC

Panel Seaming Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4153
Seamer ID: LN

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-45 / P-46	7 / 860	08:25	0+00	1+53	158	TCB	
P-49 / P-50	" "	09:39	0+00	1+11	111	TCB	
P-50 / P-54	" "	10:03	0+00	0+18	18	TCB	
P-50 / P-53	" "	10:07	0+18	0+63	45	TCB	
P-50 / P-52	" "	10:09	0+63	1+08	45	TCB	
P-50 / P-51	" "	10:11	1+08	1+21	13	TCB	
P-49 / P-55	" "	09:49	0+00	0+23	23	TCB	
P-53 / P-55	" "	09:55	0+00	0+50	50	TCB	
P-60 / P-61	" "	10:17	0+00	1+21	121	TCB	
~~P-61 / P-62~~	~~" "~~	10:28	~~0+00~~	~~0+23~~	~~23~~	~~TCB~~	TCB
P-60 / P-62	" "	10:27	1+21	1+25	4	TCB	
P-61 / P-63	" "	10:30	0+00	1+21	121	TCB	
P-62 / P-63	" "	10:41	1+21	1+65	44	TCB	
P-68 / P-70	" "	10:56	0+00	0+29	29	TCB	
P-70 / P-71	" "	10:52	0+00	0+23	23	TCB	

Total: 805

CEC

Panel Seaming Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4153
Seamer ID: LA

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P68/P71	7 / 860	10:59	0+29	2+10	181	TCB	
P69/P71	" "	11:11	2+10	2+47	37	TCB	
P74/P76	" "	11:15	0+00	2+53	253	TCB	
P74/P77	" "	11:35	2+53	2+75	22	TCB	
P75/P77	" "	11:37	2+75	2+99	24	TCB	
P79/P80	" "	11:44	0+00	1+27	127	TCB	
P79/P81	" "	11:53	1+27	3+18	191	TCB	
P79/P82	" "	12:07	3+18	3+38	20	TCB	
P84/P86	" "	13:22	0+00	2+63	263	TCB	
P85/P86	" "	13:49	2+63	2+69	6	TCB	
P89/P91	" "	13:55	0+00	2+30	230	TCB	
P90/P91	" "	14:08	2+30	2+76	46	TCB	
P92/P95	" "	14:23	0+00	1+77	177	TCB	
P93/P95	" "	15:00	1+77	2+95	118	TCB	
P98/P99	" "	15:04	0+00	0+40	40	TCB	

Total: 1713

CEC

Panel Seaming Information

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Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: LN 4453
Seamer ID: LN

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-98 / P-102	7 / 860	15:09	0+40	2+46	256	TCB	
P-103 / P-104	" "	15:48	0+00	2+03	203	TB	
P-103 / P-105	" "	16:04	2+03	2+94	91	TCB	552
P-89 / P90	" "	13:51	0+00	0+23	23	TCB	
P-88 / P-89	" "	13:47	0+00	2+30	230	TCB	
P-88 / P-90	" "	14:14	2+30	2+76	46	TCB	
P-99 / 100	4 / 860	14:58	0+00	0+23	23	TCB	
P-104 / P-105	" "	15:41	0+00	0+23	23	TCB	
P-55 / P-55	" "	09:52	1+11	1+34	23	TCB	

Total: 918

CEC

Panel Seaming Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 3988
Seamer ID: DV

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-61/P-62	7 / 860	10:28	0+00	0+23	23	TCB	
P-64/P-67	7 / 860	10:40	0+00	0+96	96	TCB	
P-64/P-65	7 / 860	10:31	0+00	0+23	23	TCB	
~~P-64/P-67~~	~~7 / 860~~	~~10:50~~	~~0+00~~	~~0+96~~	~~96~~	~~TCB~~	TCB
P-65/P-67	7 / 860	10:53	0+96	1+65	69	TCB	
P-66/P-67	7 / 860	10:58	1+65	1+90	25	TCB	
P-70/P-72	7 / 860	11:00	0+00	0+29	29	TCB	
P-71/P-72	7 / 860	11:03	0+29	2+55	26	TCB	
P-71/P-73	7 / 860	11:10	2+55	2+59	4	TCB	
P-76/P-79	7 / 860	11:20	0+00	2+53	253	TCB	
P-79/P-77	7 / 860	11:48	2+53	3+01	47	TCB	
P-79/P-78	7 / 860	11:49	3+01	3+14	13	TCB	
P84/P85	7 / 860	11:50	0+00	0+23	23	TCB	
P-86/P-88	7 / 860	13:40	0+00	2+69	269	TCB	
P-91/P-92	7 / 860	14:15	0+00	1+77	177	TCB	

Total: 1097

CEC

Panel Seaming Information

Date: 5.18.17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 3988
Seamer ID: DV

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-91/P-93	7/860	14:33	1+77	2+76	99	TCB	
P96/P-98	" "	14:37	0+00	1+10	110	TCB	
P-97/P-98	" "	14:58	1+10	2+97	187	TCB	
P-99/P-100	" "	15:20	0+00	0+40	40	TCB	
P-100/P-101	" "	15:25	0+40	2+72	272	TCB	
P-100/P-102	" "	15:45	2+72	2+96	24	TCB	
P104/P-106	" "	16:00	0+00	2+03	203	TCB	
P-105/P106	" "	16:20	2+03	3+00	97	TCB	
							1032

Total

CEC

Panel Seaming Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4179
Seamer ID: BV

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-42/P-43	7 / 860	08:00	0+00	1+51	151	TCB	250
P-43/P-44	" "	08:17	0+00	1+54	154	TCB	250
P-46/P-47	" "	08:38	0+00	1+60	160	TCB	250
P-68/P-69	" "	10:51	0+00	0+23	23	TCB	
P-72/P-73	" "	11:03	0+00	0+23	23	TCB	
P-74/P-75	" "	11:11	0+00	0+23	23	TCB	
P-76/P-77	" "	11:25	0+00	0+23	23	TCB	
P-77/P-78	" "	11:32	0+00	0+23	23	TCB	
P-81/P-82	" "	11:40	0+00	0+23	23	TCB	
P-80/P-81	" "	11:47	0+00	0+23	23	TCB	
P-83/P-84	" "	11:53	0+00	2+60	260	TCB	
P-83/P-85	" "	12:13	2+60	2+94	34	TCB	
P-95/P-96	" "	14:42	0+00	1+10	110	TCB	
P-95/P-97	" "	14:52	1+10	3+05	195	TCB	
P-101/P-103	" "	15:21	0+00	2+72	272	TCB	1782

Total: 1498

CEC

Panel Seaming Information

Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4179
Seamer ID: BV

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P103/P103	7 / 860	15:50	2+72	2+96	84	TCB	
P-106/P107	7 / 860	16:15	0+00	1+30	130	TCB	
P106/P108	7 / 860	16:23	1+30	3+02	172	TCB	598
P92/P93	4 / 860	14:23	0+00	0+23	23	TCB	
P-96/P-97	5 / 860	14:34	0+00	0+23	23	TCB	
P-107/P108	" "	14:03	0+00	0+23	23	TCB	
P55/P56	" "	10:02	0+00	0+23	23	TCB	
P-56/P57	" "	10:09	0+00	0+23	23	TCB	
P-57/P-58	" "	10:13	0+00	0+23	23	TCB	
P-58/P59	" "	10:24	0+00	0+23	23	TCB	
P11/P59	" "	10:43	0+00	0+23	23	TCB	
P12/P58	7 /860	10:30	3+33	3+52	19	TCB	
P12/P55	" "	10:33	3+52	3+89	37	TCB	
P101/P102	5 / 860	15:14	0+00	0+23	23	TCB	
P-12/P-79	" "	13:34	0+00	0+08	8	TCB	

Total: 657

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Panel Seaming Information

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Date: 5-18-17
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4179
Seamer ID: BV

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P12/P82	5 / 860	13:30	0+08	0+23	15	TCB	
~~P79/P82~~	~~" / "~~	~~13:24~~	~~3+18~~	~~3+38~~	~~20~~	~~TCB~~	TCB
P13/P82	" "	13:24	0+23	0+36	13	TCB	
P13/P83	" "	13:22	0+42	0+46	4	TCB	
P14/P83	" "	13:21	0+46	0+69	23	TCB	
P15/P83	" "	13:20	0+69	0+76	7	TCB	
P15/P85	" "	13:15	0+76	0+91	15	TCB	
P16/P85	" "	13:14	0+91	1+12	21	TCB	
P16/P86	" "	13:13	1+12	1+18	6	TCB	
P86/P87	" "	13:10	0+00	0+13	13	TCB	
~~P85/P87~~	" "	~~14:10~~	~~2+69~~	~~2+85~~	20	TCB	
P13/P81	" "	13:27	0+36	0+42	6	TW	
P16/P87	" "	13:11	1+18	1+44	26	TW	

Total: 163

CEC

Panel Seaming Information

Date: 5-19-17
Daily Report No.: 22

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4179
Seamer ID: BV

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-112/P-114	7 / 860	09:05	0+00	1+70	170	TCB	
P-36/P-113	5 / 860	10:11	0+00	0+23	23	TCB	
P-32/P113	5 / 860	10:13	0+00	0+06	6	TCB	
P-107/P-111	7 / 860	09:31	0+00	1+30	130	TCB	
P108/P-111	7 / 860	09:42	1+30	2+81	151	TCB	
P-19/P111	5 / 860	10:17	4+80	4+95	15	TCB	
P-19/P-115	5 / 860	10:15	4+95	5+03	8	TCB	
P21/P-115	5 / 860	10:16	5+03	5+18	15	TCB	
P-21/P-114	5 / 860	10:19	5+18	5+26	8	TCB	
P-33/P-114	5 / 860	10:21	5+26	5+32	6	TCB	
P32/P114	5 / 860	10:22	5+32	5+39	7	TCB	

Total: 539

CEC

Panel Seaming Information

Date: 5-19-17
Daily Report No.: 22

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4153
Seamer ID: LN

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-41 / P-112	4 / 860	09:17	0+00	0+25	25	TCB	
P-42 / P-112	4 / 860	09:20	0+25	0+48	23	TCB	
P-43 / P-112	4 / 860	09:22	0+48	0+71	23	TCB	
P-44 / P-112	4 / 860	09:24	0+71	0+94	23	TCB	
P-45 / P-112	4 / 860	09:26	0+94	1+18	24	TCB	
P-46 / P-112	4 / 860	09:28	1+18	1+40	22	TCB	
P-47 / P-112	4 / 860	09:31	1+40	1+64	24	TCB	
P-48 / P-112	4 / 860	09:33	1+64	1+70	6	TCB	
~~P-48 / P-109~~	~~4 / 860~~	~~09:44~~	~~1+70~~	~~1+80~~	~~10~~	~~TCB~~	PJW
P-109 / P-114	4 / 860	09:46	1+95	2+18	23	TCB	
P-110 / P-114	4 / 860	09:54	2+18	2+40	22	TCB	
P-39 / P-114	4 / 860	09:59	2+40	2+51	11	TCB	
P-38 / P-114	4 / 860	10:01	2+51	2+74	23	TCB	
P-113 / P-38	4 / 860	10:00	0+00	0+06	6	TCB	
P-113 / P-114	4 / 860	10:03	2+74	2+95	21	TCB	

Total: 306

CEC

Panel Seaming Information

Date: 5-19-17
Daily Report No.: 22

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4153
Seamer ID: LN

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-39/P110	7 / 860	08:47	0+00	1+85	185	TCB	
P-48/P112	4 / 860	09:36	0+00	0+23	23'	TCB	east-west seam
P-48/P114	"	09:39	0+23	0+30	7'	TCB	east-west seam
P-48/P114	"	09:42	1+70	1+95	25	TCB	

Total: 185

CEC

Panel Seaming Information

Date: 5-19-17
Daily Report No.: 22

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Machine ID: 4181
Seamer ID: PT

Seam ID	Speed / Temperature	Start Time	Station Beg.	Station End	Seam Length	Observer	Comments
P-114/P-115	7 / 860	13:31	0+00	2+85	285	TCB	
P111/P115	7 / 860	10:19	0+00	2+82	282	TCB	
P-48 / P-109	7 / 860	08:20	0+00	1+85	185	TCB	
P-109/P110	7 / 820	08:43	0+00	1+88	188	TCB	

Total: 940

C.5 NONDESTRUCTIVE TEST LOGS

CEC

Nondestructive Seam Testing Information

Page 1 of 21

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P-1/P-2	N. Spur	EOS	BOS	RC	08:10	08:15	30	30	P	—	TCB	
P2/P-3	" "	EOS	2+25	RC	08:20	08:25	30	30	P	—	TCB	
P-2/P-3	" "	2+25	BOS	RC	08:13	08:18	30	29	P	—	TCB	
P-3/P-4	" "	EOS	BOS	RC	08:32	08:37	30	29	P	—	TCB	
P-4/P-5	" "	EOS	BOS	RC	08:30	08:35	30	30	P	—	TCB	
P-5/P-6	" "	EOS	BOS	RC	08:40	08:45	30	30	P	—	TCB	
P-6/P-7	" "	EOS	BOS	RC	09:00	09:04	30	30	P	—	TCB	
P-7/P-8	" "	EOS	BOS	RC	09:10	09:15	30	30	P	—	TCB	
P-8/P-9	" "	EOS	BOS	RC	09:04	09:09	30	29	P	—	TCB	
P-9/P-10		EOS	BOS	RC	9:30	9:35	30	29	P	—	PJW	
P18/P-17		EOS	BOS	RC	10:42	10:47	30	30	P		PJW	
P17/P16		EOS	BOS	RC	10:35	10:40	30	29	P		PJW	
P16/P15		EOS	BOS	RC	10:30	10:35	30	30	P		PJW	
P15/P14		EOS	BOS	RC	10:15	10:20	30	30	P		PJW	
P14/P13		EOS	BOS	RC	10:11	10:17	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5-17-17
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P-10/P-12	Step Tie-in	BOS	EOS	RC	10:18	10:23	30	30	P	-	TCB	
P-10/P-13	" " "	BOS	EOS	RC	10:21	10:26	30	30	P	-	TCB	
P-10/P-14	" " "	BOS	EOS	RC	10:24	10:29	30	29	P	-	TCB	
P-10/P-15	" " "	BOS	EOS	RC	10:28	10:33	30	30	P	-	TCB	
P-10/P-16	" " "	BOS	EOS	RC	10:33	10:38	30	30	P	-	TCB	
P-10/P-17	" " "	BOS	EOS	RC	10:41	10:46	30	30	P	-	TCB	
P-10/P-18	" " "	BOS	EOS	RC	10:46	10:51	30	30	P	-	TCB	
P-11/TIE IN		1+74	EOS 2+25	RC	4:30	4:35	30	30	P	-	DCW	to EOS
P-11/TIE IN		1+52	1+74	RC	4:32	4:37	30	29	P	-	PJW	
P-11/TIE IN		1+32	1+52	RC	4:35	4:40	30	30	P	-	PJW	
P-11/TIE IN		1+17	1+32	RC	4:58	5:03	30	30	P	-	PJW	
P-11/TIE IN		BOS	1+17	RC	4:46	4:51	30	30	P	-	PJW	
P13/P12		EOS	BOS	RC	10:00	10:05	30	29	P	-	PJW	
P12/P11		EOS	BOS	RC	9:43	9:48	30	30	P	-	PJW	
P-11/Tie in		1+90	2+25 EOS	RC								

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/17/2017
Daily Report No.: 20

Client: Vista Landfill
Project: Cell 5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P19/P1		BOS	~~EOS~~	RC	11:17	11:22	30	30	P		PJW	
P19/P1		1+50	EOS	RC	11:00	11:05	30	30	P		PJW	
P21/P19		BOS	EOS	RC	11:20	11:25	30	29	P		PJW	
P20/P19		BOS	EOS	RC	11:05	11:10	30	30	P		PJW	
P20/P21		BOS	0+03	RC	11:06	11:11	30	30	P		PJW	
P20/P21		0+03	EOS	RC	11:10	11:15	30	30	P		PJW	
P21/P22		BOS	EOS	RC	11:40	11:45	30	30	P		PJW	
P20/P22		BOS	EOS	RC	11:35	11:40	30	29	P		PJW	
P33/P21		BOS	EOS	RC	2:53	2:58	30	30	P		PJW	
P32/P21		BOS	EOS	RC	2:47	2:52	30	30	P		PJW	
P31/P21		BOS	EOS	RC	2:43	2:48	30	29	P		PJW	
P23/P21		BOS	EOS	RC	2:40	2:45	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/17/2017
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure		P/F			
		Beg.	End		Beg.	End	Beg.	End				
P-23/P22		BOS	EOS	RC	1:52	1:57	30	30	P		PJW	
P-24/P25		BOS	EOS	RC	12:15	12:20	30	30	P		PJW	
P-25/P26		BOS	EOS	RC	12:20	12:25	30	30	P		PJW	
P26/P27		BOS	EOS	RC	12:28	12:33	30	30	P		PJW	
P27/P28		BOS	EOS	RC	12:30	12:35	30	30	P		PJW	
P28/P29		BOS	EOS	RC	1:35	1:40	30	30	P		PJW	
P24/P22		BOS	EOS	RC	1:58	2:03	30	29	P		PJW	
P25/P22		BOS	EOS	RC	2:00	2:05	30	30	P		PJW	
P26/P22		BOS	EOS	RC	2:04	2:09	30	29	P		PJW	
P27/P22		BOS	EOS	RC	2:07	2:12	30	30	P		PJW	
P28/22		BOS	EOS	RC	2:10	2:15	30	29	P		PJW	
P29/P22		BOS	EOS	RC	2:16	2:21	30	30	P		PJW	
P29/P30		BOS	EOS	RC	2:32	2:37	30	29	P		PJW	
P30/P22		BOS	EOS	RC	2:25	2:30	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/17/2017
Daily Report No.: 20

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P39/P38		BOS	EOS	RC	3:51	3:56	30	30	P		PJW	
P38/P36		BOS	EOS	RC	4:15	4:20	30	30	P		PJW	
P38/P40		BOS	EOS	RC	4:04	4:09	30	30	P		PJW	
P38/P37		BOS	EOS	RC	4:00	4:05	30	30	P		PJW	
P40/P36		BOS	EOS	RC	4:07	4:12	30	29	P		PJW	
P37/P36		BOS	EOS	RC	3:42	3:47	30	29	P		PJW	
P36/P35		BOS	EOS	RC	3:21	3:26	30	29	P		PJW	
P35/P34		BOS	EOS	RC	3:25	3:20	30	30	P		PJW	
P36/P34		BOS	1+45	RC	3:33	3:38	30	30	P		PJW	
P36/P34		1+45	EOS	RC	3:40	3:45	30	30	P		PJW	
P34/P32		BOS	EOS	RC	2:55	3:00	30	29	P		PJW	
P32/P33		BOS	EOS	RC	2:50	2:55	30	30	P		PJW	
P32/31		BOS	EOS	RC	2:45	2:50	30	30	P		PJW	
P31/P23		BOS	EOS	RC	2:37	2:42	30	30	P		PJW	
P23/P24		BOS	EOS	RC	12:00	12:05	30	29	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P41/P42		BOS	EOS	RC	8:20	8:25	30	30	P		PJW	
P42/P43		BOS	EOS	RC	8:17	8:22	30	30	P		PJW	
P43/P44		BOS	EOS	RC	8:31	8:36	30	30	P		PJW	
P44/P45		BOS	EOS	RC	8:25	8:30	30	29	P		PJW	
P45/P46		BOS	EOS	RC	8:40	8:45	30	29	P		PJW	
P46/P47		BOS	EOS	RC	8:55	9:00	30	30	P		PJW	
P47/P48		BOS	EOS	RC	8:44	8:49	30	30	P		PJW	
P49/P50		BOS	EOS	RC	9:45	9:50	30	30	P		PJW	
P50/P54		BOS	EOS	RC	10:28	10:33	30	30	P		PJW	
P56/P53		BOS	EOS	RC	10:26	10:31	30	30	P		PJW	
P50/P52		BOS	EOS	RC	10:23	10:28	30	29	P		PJW	
P50/P51		BOS	EOS	RC	10:19	10:24	30	30	P		PJW	
P51/P52		BOS	EOS	RC	9:49	10:04	30	30	P		PJW	
P52/P53		BOS	EOS	RC	9:57	10:02	30	29	P		PJW	
P53/P54		BOS	EOS	RC	9:47	9:59	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P54/P60		BOS	EOS	RC	10:09	10:14	30	30	P		PJW	
P53/P60		BOS	EOS	RC	10:11	10:16	30	30	P		PJW	
P52/P60		BOS	EOS	RC	10:13	10:18	30	29	P		PJW	
P51/P60		BOS	EOS	RC	10:14	10:19	30	30	P		PJW	
P50/P60		BOS	EOS	RC	10:17	10:22	30	30	P		PJW	
P58/P55		BOS	EOS	RC	9:55	10:00	30	30	P		PJW	
P49/P55		BOS	EOS	RC	9:52	9:57	30	30	P		PJW	
P60/P61		BOS	EOS	RC	10:31	10:36	30	29	P		PJW	
P60/P62		BOS	EOS	RC	10:34	10:39	30	30	P		PJW	
P61/P62		BOS	EOS	RC	10:38	10:43	30	30	P		PJW	
P61/P63		BOS	EOS	RC	10:50	10:55	30	29	P		PJW	
P62/P63		BOS	EOS	RC	10:48	10:53	30	30	P		PJW	
P63/P64		BOS	EOS	RC	10:53	10:58	30	30	P		PJW	
P63/P65		BOS	EOS	RC	11:00	11:05	30	30	P		PJW	
P64/P67		BOS	EOS	RC	10:56	11:01	30	29	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 31

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P56/P78		BOS	EOS	RC	1:53	1:58	30	30	P		PJW	
P56/P57		BOS	EOS	RC	12:48	12:53	30	29	P		PJW	
P57/P78		BOS	EOS	RC	1:55	2:00	30	30	P		PJW	
P57/P79		BOS	EOS	RC	1:58	2:03	30	29	P		PJW	
P57/P58		BOS	EOS	RC	2:01	2:06	30	30	P		PJW	
P58/P79		BOS	EOS	RC	2:04	2:09	30	30	P		PJW	
P58/P12		BOS	EOS	RC	2:10	2:15	30	29	P		PJW	
P58/P59		BOS	EOS	RC	2:13	2:18	30	30	P		PJW	
P59/P12		BOS	EOS	RC	2:18	2:23	30	29	P		PJW	
P59/P13		BOS	EOS	RC	2:20	2:25	30	30	P		PJW	
P79/P12		BOS	EOS	RC	2:07	2:12	30	30	P		PJW	
P82/P12		BOS	EOS	RC	2:50	2:55	30	30	P		PJW	
P82/P13		BOS	EOS	RC	2:52	2:57	30	30	P		PJW	
P81/P13		BOS	EOS	RC	2:55	3:00	30	30	P		PJW	
P83/P14		BOS	EOS	RC	2:58	3:03	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P64/P65		BOS	EOS	RC	10:58	11:03	30	30	P		PJW	
P65/P66		BOS	EOS	RC	11:10	11:15	30	30	P		PJW	
P67/P65		BOS	EOS	RC	11:07	11:12	30	30	P		PJW	
P63/P66		BOS	EOS	RC	11:04	11:09	30	30	P		PJW	
P67/P66		BOS	EOS	RC	11:11	11:16	30	30	P		PJW	
P67/P68		BOS	EOS	RC	11:13	11:18	30	29	P		PJW	
P68/70		BOS	EOS	RC	11:30	11:35	30	30	P		PJW	
P68/71		BOS	EOS	RC	11:22	11:27	30	30	P		PJW	
P68/69		BOS	EOS	RC	11:20	11:25	30	30	P		PJW	
P69/P70		BOS	EOS	RC	11:26	11:31	30	29	P		PJW	
P70/P71		BOS	EOS	RC	11:35	11:40	30	30	P		PJW	
P70/P72		BOS	EOS	RC	11:33	11:38	30	30	P		PJW	
P71/P72		BOS	EOS	RC	11:38	11:43	30	29	P		PJW	
P72/P73		BOS	EOS	RC	11:40	11:45	30	30	P		PJW	
P72/P74		BOS	EOS	RC	12:43	12:48	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure		P/F			
		Beg.	End		Beg.	End	Beg.	End				
P73/P74		BOS	EOS	RC	11:46	11:51	30	30	P		PJW	
P73/P75		BOS	EOS	RC	11:48	11:53	30	30	P		PJW	
P74/P75		BOS	EOS	RC	11:57	12:02	30	30	P		PJW	
P74/P76		BOS	EOS	RC	11:51	11:56	30	29	P		PJW	
P74/P77		BOS	EOS	RC	11:54	11:59	30	30	P		PJW	
P75/P77		BOS	EOS	RC	12:40	12:45	30	30	P		PJW	
P76/P77		BOS	EOS	RC	12:51	12:56	30	30	P		PJW	
P77/P78		BOS	EOS	RC	12:43	12:48	30	30	P		PJW	
P76/79		BOS	EOS	RC	12:53	12:58	30	29	P		PJW	
P77/79		BOS	EOS	RC	12:57	1:02	30	30	P		PJW	
P78/P79		BOS	EOS	RC	12:46	12:51	30	30	P		PJW	
P79/P80		BOS	EOS	RC	1:00	1:05	30	30	P		PJW	
P79/P81		BOS	EOS	RC	1:16	1:21	30	30	P		PJW	
P79/P82		BOS	EOS	RC	1:20	1:25	30	30	P		PJW	
P80/P81		BOS	EOS	RC	1:06	1:11	30	29	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P80/P83		BOS	EOS	RC	1:03	1:08	30	30	P		PJW	
P81/P83		BOS	EOS	RC	1:13	1:18	30	30	P		PJW	
P81/P82		BOS	EOS	RC	1:19	1:24	30	30	P		PJW	
P83/P84		BOS	EOS	RC	1:07	1:12	30	30	P		PJW	
P83/P85		BOS	EOS	RC	1:10	1:15	30	30	P		PJW	
P55/P60		BOS	EOS	RC	1:27	1:32	30	30	P		PJW	
P55/P62		BOS	EOS	RC	1:30	1:35	30	30	P		PJW	
P55/P63		BOS	EOS	RC	1:33	1:38	30	30	P		PJW	
P55/P66		BOS	EOS	RC	1:38	1:43	30	30	P		PJW	
P55/P67		BOS	EOS	RC	1:40	1:45	30	30	P		PJW	
P55/P56		BOS	EOS	RC	11:15	11:20	30	30	P		PJW	
P56/P69		BOS	EOS	RC	1:43	1:48	30	30	P		PJW	
P56/P71		BOS	EOS	RC	1:45	1:50	30	30	P		PJW	
P56/P73		BOS	EOS	RC	1:48	1:53	30	30	P		PJW	
P56/P75		BOS	EOS	RC	1:51	1:56	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure		P/F			
		Beg.	End		Beg.	End	Beg.	End				
P83/P15		BOS	EOS	RC	3:07	3:12	30	30	P		PJW	
P85/P15		BOS	EOS	RC	3:10	3:15	30	30	P		PJW	
P85/P16		BOS	EOS	RC	3:14	3:19	30	30	P		PJW	
P84/P85		BOS	EOS	RC	3:21	3:26	30	29	P		PJW	
P84/P86		BOS	EOS	RC	3:25	3:30	30	29	P		PJW	
P85/P86		BOS	EOS	RC	3:18	3:23	30	30	P		PJW	
P87/P16		BOS	EOS	RC	4:25	4:30	30	29	P		PJW	
P86/P87		BOS	EOS	RC	3:28	3:33	30	29	P		PJW	
P86/P88		BOS	EOS	RC	3:38	3:43	30	30	P		PJW	
P87/P88		BOS	EOS	RC	3:35	3:40	30	30	P		PJW	
P88/P16		BOS	EOS	RC	4:27	4:32	30	30	P		PJW	
P88/P17		BOS	EOS	RC	4:30	4:35	30	30	P		PJW	
P90/P88		BOS	EOS	RC	4:33	4:38	30	30	P		PJW	
P91/P18		BOS	EOS	RC	4:36	4:41	30	29	P		PJW	
P88/P90		BOS	EOS	RC	3:47	3:52	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 21

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P88/P89		~~BOS~~	EOS	RC	3:48	3:53	30	29	P		PJW	
P89/P90		BOS	EOS	RC	3:50	3:55	30	30	P		PJW	
P90/P91		BOS	EOS	RC	3:53	3:58	30	29	P		PJW	
P88/P89		BOS	0+20	RC	3:43	3:48	30	30	P		PJW	
P89/P91		BOS	BOS	RC	3:54	3:59	30	30	P		PJW	
P91/P92		BOS	EOS	RC	3:58	4:03	30	30	P		PJW	
P91/P93		BOS	EOS	RC	4:38	4:43	30	30	P		PJW	
P92/P93		BOS	EOS	RC	4:05	4:10	30	30	P		PJW	
P92/P95		BOS	EOS	RC	4:01	4:06	30	29	P		PJW	
P95/P96		BOS	EOS	RC	4:11	4:16	30	30	P		PJW	
P95/P97		BOS	EOS	RC	4:57	5:02	30	30	P		PJW	
P96/P97		BOS	EOS	RC	4:13	4:18	30	30	P		PJW	
P96/P98		BOS	EOS	RC	4:15	4:20	30	29	P		PJW	
P97/P98		BOS	EOS	RC	5:01	5:06	30	29	P		PJW	
P93/P94		BOS	EOS	RC	4:40	4:45	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/18/2017
Daily Report No.: 21

Client: Vista Landfill
Project: Cell 5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P18/P94		BOS	EOS	RC	4:48	4:53	30	30	P		PJW	
P94/P10		BOS	EOS	RC	4:44	4:49	30	30	P		PJW	
P93/P10		BOS	EOS	RC	4:52	4:57	30	30	P		PJW	
P86/P16		BOS	EOS	RC	3:16	3:21	30	30	P		PJW	
P95/P93		BOS	EOS	RC	4:07	4:12	30	30	P		PJW	
5/19/2017		-	22									
P95/P10		BOS	EOS	RC	7:00	7:05	30	30	P		PJW	
P95/P9		BOS	EOS	RC	7:02	7:07	30	29	P		PJW	
P97/P9		BOS	EOS	RC	7:04	7:09	30	30	P		PJW	
P97/P8		BOS	EOS	RC	7:07	7:12	30	30	P		PJW	
P98/P8		BOS	EOS	RC	7:10	7:15	30	29	P		PJW	
P98/P7		BOS	EOS	RC	7:13	7:18	30	30	P		PJW	
P100/P7		BOS	EOS	RC	7:18	7:23	30	30	P		PJW	
5/18/2017												
P100/P98		BOS	EOS	RC	5:04	5:09	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

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Date: 5/19/2017
Daily Report No.: 22

Client: Vista Landfill
Project: Cell 5
Project No.: 161.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P100/P6		BOS	EOS	RC	7:21	7:26	30	30	P		PJW	
P102/P6		BOS	EOS	RC	7:38	7:43	30	29	P		PJW	
P102/P5		BOS	EOS	RC	7:41	7:46	30	30	P		PJW	
P103/P5		BOS	EOS	RC	7:50	7:55	30	30	P		PJW	
P103/P4		BOS	EOS	RC	7:53	7:58	30	30	P		PJW	
P105/P4		BOS	EOS	RC	8:00	8:05	30	30	P		PJW	
P105/P3		BOS	EOS	RC	8:05	8:10	30	29	P		PJW	
P106/P3		BOS	EOS	RC	8:11	8:16	30	30	P		PJW	
P106/P2		BOS	EOS	RC	8:14	8:19	30	30	P		PJW	
P108/P2		BOS	EOS	RC	8:35	8:40	30	30	P		PJW	
P108/P1		BOS	EOS	RC	8:38	8:43	30	29	P		PJW	
P111/P1		BOS	EOS	RC	10:13	10:18	30	30	P		PJW	
P111/P19		BOS	EOS	RC	10:17	10:22	30	30	P		PJW	
P115/P19		BOS	EOS	RC	10:19	10:24	30	30	P		PJW	
P115/P21		BOS	EOS	RC	10:21	10:26	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/19/2017
Daily Report No.: 22

Client: Vista Landfill
Project: Cell 5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P114/P21		BOS	EOS	RC	10:25	10:30	30	29	P		RJW	
P114/P33		BOS	EOS	RC	10:31	10:36	30	30	P		RJW	
P114/P32		BOS	EOS	RC	10:35	10:40	30	29	P		RJW	
P114/P113		BOS	EOS	RC	10:07	10:12	30	30	P		RJW	
P113/P36		BOS	EOS	RC	10:15	10:20	30	30	P		RJW	
P113/P38		BOS	EOS	RC	10:04	10:09	30	30	P		RJW	
P114/P38		BOS	EOS	RC	10:05	10:10	30	29	P		RJW	
P114/P39		BOS	EOS	RC	10:03	10:08	30	30	P		RJW	
P110/P39		BOS	EOS	RC	9:11	9:16	30	30	P		RJW	
P110/P114		BOS	EOS	RC	9:58	10:03	30	30	P		RJW	
P109/P110		BOS	EOS	RC	9:05	9:10	30	29	P		RJW	
P109/P114		BOS	OHS	RC	9:56	10:01	30	30	P		RJW	
P109/P114		OHS	EOS	RC	9:55	10:00	30	30	P		RJW	
P114/P48		BOS	EOS	RC	9:54	9:59	30	30	P		RJW	N-S
P114/P48		BOS	EOS	RC	9:45	9:50	30	30	P		RJW	E-W

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Page 17 of 21

Date: 5/19/2017
Daily Report No.: 22

Client: Vista Landfill
Project: Cell 5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P114/P112		BOS	EOS	RC	9:30	9:35	30	30	P		PJW	
P48/P109		BOS	1+53	RC	9:00	9:05	30	30	P		PJW	
P48/P109		1+53	EOS	RC	8:47	8:52	30	30	P		PJW	
P48/P112		BOS	EOS	MS	10:02	10:07	30	30	P		PJW	E-W
P47/P112		BOS	EOS	MS	9:59	10:04	30	29	P		PJW	N-S
P46/P112		BOS	EOS	MS	9:58	10:03	30	30	P		PJW	
P45/P112		BOS	EOS	MS	9:51	9:56	30	30	P		PJW	
P44/P112		BOS	EOS	MS	9:50	9:55	30	30	P		PJW	
P43/P112		BOS	EOS	MS	9:43	9:48	30	29	P		PJW	
P42/P112		BOS	EOS	MS	9:37	9:42	30	30	P		PJW	
P41/P112		BOS	EOS	MS	9:34	9:39	30	30	P		PJW	
P34/P113		BOS	EOS	RC	10:42	10:47	30	29	P		JCB	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/19/2017
Daily Report No.: 22

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P106/P107		BOS	EOS	RC	8:20	8:25	30	29	P		PJW	
P108/P111		BOS	EOS	MS	10:06	10:11	30	29	P		PJW	
P106/P108		BOS	EOS	RC	8:16	8:21	30	30	P		PJW	
P105/P106		BOS	EOS	RC	8:08	8:13	30	30	P		PJW	
P103/P105		BOS	EOS	RC	7:57	8:02	30	30	P		PJW	
P102/P103		BOS	EOS	RC	7:44	7:49	30	29	P		PJW	
P101/P103		BOS	EOS	RC	7:31	7:36	30	30	P		PJW	
P101/P102		BOS	EOS	RC	7:35	7:40	30	30	P		PJW	
P100/P102		BOS	EOS	RC	7:25	7:30	30	30	P		PJW	
P100/P101		BOS	EOS	RC	7:28	7:33	30	29	P		PJW	
P98/P99		BOS	EOS	RC	4:18	4:23	30	30	P		PJW	5/18
P99/100		BOS	EOS	RC	4:20	4:25	30	30	P		PJW	5/18
P99/101		BOS	EOS	RC	4:23	4:28	30	30	P		PJW	5/18
P103/P104		BOS	EOS	RC	8:26	8:31	30	30	P		PJW	
P104/P106		BOS	EOS	RC	8:31	8:36	30	29	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/19/2017
Daily Report No.: 22

Client: Vista Landfill
Project: Cell 5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P104/P105		BOS	EOS	RC	8:28	8:33	30	30	P		PJW	
P107/P108		BOS	EOS	RC	8:22	8:27	30	30	P		PJW	
P107/P111		BOS	0+39	MS	10:46	10:51	30	30	P		PJW	
P107/P111		0+39	EOS	RC	9:44	9:49	30	30	P		PJW	
P111/P113		BOS	0+41	MS	10:17	10:22	30	30	P		PJW	
P111/P113		0+41	EOS	RC	9:38	9:43	30	29	P		PJW	
P115/P114		BOS	0+41	MS	10:51	10:56	30	29	P		PJW	
P115/P114		0+41	EOS	MS	10:08	10:13	30	30	P		PJW	
P48/P112		BOS	EOS	MS	09:47	09:52	30	30	P		TCB	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/19/2017
Daily Report No.: 22

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
~~R104/R105~~	~~TIE IN~~	~~BOS~~	~~EOS~~	~~RF~~	~~8:28~~	~~8:33~~	~~30~~	~~30~~	~~P~~		~~PJW~~	
P59/TIE	IN	2+25	2+41	MS	7:05	7:10	30	30	P		PJW	
P58/TIE	IN	2+41	2+62	MS	7:09	7:14	30	30	P		PJW	
P58/TIE	IN	2+65	2+88	MS	7:17	7:22	30	30	P		PJW	R-54 & R55 between 2+62 & 2+65
P58/TIE	IN	2+88	2+93	MS	7:20	7:25	30	30	P		PJW	
P57/TIE	IN	2+93	3+10	MS	7:22	7:27	30	29	P		PJW	
P57/TIE	IN	3+10	3+24	MS	7:29	7:34	30	34	P		PJW	
P56/TIE	IN	3+24	3+33	MS	7:34	7:39	30	29	P		PJW	
P56/TIE	IN	3+33	3+56	MS	7:36	7:41	30	30	P		PJW	
P56/TIE	IN	3+56	3+78	MS	7:39	7:44	30	29	P		PJW	
P56/TIE	IN	3+78	4+01	MS	7:45	7:50	30	30	P		PJW	
P56/TIE	IN	4+01	4+24	MS	7:46	7:51	30	28	P		PJW	
P56/TIE	IN	4+24	4+46	MS	7:49	7:54	30	30	P		PJW	
P56/TIE	IN	4+46	4+62	MS	8:01	8:06	30	30	P		PJW	
P55/TIE	IN	4+62	4+69	MS	8:07	8:12	30	30	P		PJW	

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

CEC

Nondestructive Seam Testing Information

Date: 5/19/2017
Daily Report No.: 22

Client: Vista Landfill
Project: Cell-5
Project No.: 101.07.41

Seam ID	Information Specified	Location Station		Test Crew	Air Testing					Vacuum Test P/F	Observer	Comments
					Time		Pressure					
		Beg.	End		Beg.	End	Beg.	End	P/F			
P55/TIE	IN	4+69	4+91	MS	8:08	8:13	30	30	P		PJW	
P55/TIE	IN	4+91	5+15	MS	8:15	8:20	30	29	P		PJW	
P55/TIE	IN	5+15	5+38	MS	8:16	8:21	30	30	P		PJW	
P55/TIE	IN	5+38	5+60	MS	8:25	8:30	30	29	P		PJW	
P55/TIE	IN	5+60	5+83	MS	8:32	8:37	30	30	P		PJW	
P55/TIE	IN	5+88	6+06	MS	8:39	8:44	30	30	P		PJW	R-72 5+83 + 5+88
P55/TIE	IN	6+06	6+15	MS	8:46	8:51	30	30	P		PJW	
P55/TIE	IN	6+15	6+28	MS	8:50	8:55	30	30	P		PJW	
P49/TIE	IN	6+37	6+45	MS	8:54	9:04	30	30	P		PJW	R-75 & R-71 6+28 + 6+37
P49/TIE	IN	6+65	6+92	RC	2:41	2:46	30	29	P		PJW	5/18
P49/TIE	IN	6+97	7+18	RC	2:36	2:41	30	30	P		PJW	5/18
P49/TIE	IN	7+19	7+25	RC	2:33	2:38	30	30	P		PJW	5/18
P49/TIE	IN	7+41	7+45	RC	2:30	2:35	30	29	P		PJW	5/18 R-80, R-82 Between R-81 - 7+25 7+41
P49/TIE	IN	7+45	7+48	RC	2:26	2:31	30	30	P		PJW	EOS 5/18

KEY: B.O.S. = Beginning of Seam E.O.S. = End of Seam

C.6 DESTRUCTIVE TEST DATA

CEC

Destructive Seam Sample Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41 Page 1 of 4

Sample Number	Date Sampled	Seam ID	Location	Seamer ID	Machine ID	Field Test Peel (PPI)			Shear (PPI)	Lab Test P/F	Sample Reason/Comments
DS-1	5-17	P1/P2	1+70	PT	4181	P	P	P	P	P	
DS-2	"	P-2/P-3	0+90	LN	4153	P	P	P	P	P	
DS-3	"	P-6/P-7	2+30	PT	4181	P	P	P	P	P	
DS-4	"	P5/P-6	1+45	BV	4179	P	P	P	P	P	
DS-5	"	P16/P-17	0+25	PT	4181	P	P	P	P	P	
DS-6	"	P8/P-9	0+50	LN	4153	P	P	P	P	P	
DS-7	"	P-11/P-12	0+15	LN	4153	P	P	P	P	P	
DS-8	"	P-27/P-29	0+20	PT	4181	P	P	P	P	P	
DS-9	"	P-32/P-34	1+20	PT	4181	P	P	P	P	P	
DS-10	"	P-38/P-39	1+70	PT	4181	P	P	P	P	P	
DS-11	"	P-22/P-26	1+10	LN	4153	P	P	P	P	P	
DS-12	"	P-37/P-38	0+45	LN	4153	P	P	P	P	P	
DS-13	"	P-11/Existing	0+80	LN	4153	P	P	P	P	P	
DS-14	"	P15/P-16	1+60	BV	4179	P	P	P	P	P	
DS-15	"	P-31/P-32	0+60	BV	4179	P	P	P	P	P	

CEC

Destructive Seam Sample Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Sample Number	Date Sampled	Seam ID	Location	Seamer ID	Machine ID	Field Test Peel (PPI)			Shear (PPI)	Lab Test P/F	Sample Reason/Comments
DS-16	5-18	P.41/P.42	1+15	PT	4181	P	P	P	P	P	
DS-17	5-18	P.42/P.43	0+55	BV	4179	P	P	P	P	P	
DS-18	5-18	P.44/P.45	1+25	PT	4181	P	P	P	P	P	
DS-19	5-18	P.45/P.46	0+75	LN	4153	P	P	P	P	P	
DS-20	5-18	P.46/P.47	1+15	BV	4179	P	P	P	P	P	
DS-21	5-18	P.47/P.48	0+15	PT	4181	P	P	P	P	P	
DS-22	5-18	P.53/P.54	0+15	PT	4181	P	P	P	P	P	
DS-23	5-18	P.60/P.61	0+65	LN	4153	P	P	P	P	P	
DS-24	5-18	P.68/P.71	0+50	LN	4153	P	P	P	P	P	
DS-25	5-18	P.74/P.76	2+30	LN	4153	P	P	P	P	P	
DS-26	5-18	P.79/P.81	3+05	LN	4153	P	P	P	P	P	
DS-27	5-18	P.98/P.100	1+45	LN	4153	P	P	P	P	P	
DS-28	5-18	P.103/P.105	2+35	LN	4153	P	P	P	P	P	
DS-29	5-18	P.71/P.72	2+25	DV	3988	P	P	P	P	P	
DS-30	5-18	P.76/P.79	2+00	DV	3988	P	P	P	P	P	

CEC

Destructive Seam Sample Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Sample Number	Date Sampled	Seam ID	Location	Seamer ID	Machine ID	Field Test Peel (PPI)			Shear (PPI)	Lab Test P/F	Sample Reason/Comments
DS-31	5-18	P-86/P-88	0+60	DV	3988	P	P	P	P	P	
DS-32	5-18	P-87/P-88	2+60	DV	3988	P	P	P	P	P	
DS-33	5-18	P-105/P-106	2+110	DV	3988	P	P	P	P	P	
DS-34	5-18	P-76/P-77	0+10	BV	4179	P	P	P	P	P	
DS-35	5-18	P-95/P-97	1+25	BV	4179	P	P	P	P	P	
DS-36	5-18	P-106/P-107	0+75	BV	4179	P	P	P	P	P	
DS-37	5-18	Existing/P-55	5+30	PT	4181	P	P	P	P	P	
DS-38	5-18	P-56/P-57	0+05	BV	4179	P	P	P	P	P	
DS-39	5-18	P-55/P-62	0+50	PT	4181	P	P	P	P	P	
DS-40	5-18	P-16/P-85	0+95	BV	4179	P	P	P	P	P	
DS-41	5-19	P-48/P-109	1+00	PT	4181	P	P	P	P	P	
DS-42	5-19	P-39/P-110	0+50	LN	4153	P	P	P	P	P	
DS-43	5-20	P-112/P-114	0+55	BV	4179	P	P	P	P	P	
DS-44	5-20	P-114/P-115	1+00	PT	4181	P	P	P	P	P	
DS-45	5/20	P-111/P-113	2+00	PT	4181	P	P	P	P	P	

CEC

Destructive Seam Sample Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Sample Number	Date Sampled	Seam ID	Location	Seamer ID	Machine ID	Field Test Peel (PPI)			Shear (PPI)	Lab Test P/F	Sample Reason/Comments
DS-44	5-19	P-89/P-95	2+70	PT	4181	P	P	P	P	P	
DS-47	5-19	P-92/P-93	0+10	BV	4179	P	P	P	P	P	
DS-48	5-19	P-99/P-100	0+80	LN	4153	P	P	P	P	P	

Date: 2017-05-20

Mail To:
Sheree Grant
Waste Management Inc

Bill To:

Waste Management Inc

, ,

e-mail:
sgrant@wm.com pwalls@cecenv.com

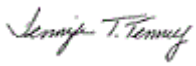
Dear Ms. Grant,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project:	**Vista Landfill**
TRI Job Reference Number:	**29011**
Material(s) Tested:	(42) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:	
AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Jennifer Tenney
Project Manager
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-1 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	118	121	120	120	119	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	120	126	131	118	141	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	174	174	173	173	165	**172**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	122	127	125	129	128	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	135	142	135	147	137	**139**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	172	173	174	168	172	**172**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-3 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	127	122	122	121	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	127	128	128	127	129	**128**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	173	176	174	173	172	**174**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-4 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	124	127	131	123	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	147	146	145	147	144	**146**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	173	175	174	174	173	**174**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-5 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	124	126	125	125	124	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	122	127	128	128	134	**128**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	177	179	179	180	180	**179**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-6 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	129	130	126	128	127	**128**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	146	146	148	142	139	**144**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	172	175	174	173	172	**173**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-7 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	119	127	121	120	123	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	120	125	120	124	134	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	171	177	176	176	173	**175**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-8 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	124	120	120	117	117	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	116	115	112	117	114	**115**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	176	179	178	177	177	**177**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-9 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	116	123	120	120	124	**121**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	110	112	113	139	125	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	177	178	177	177	177	**177**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-10 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	111	113	112	113	113	**112**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	119	120	123	118	129	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	173	172	172	171	**172**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-11 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	140	150	144	121	143	**140**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	158	156	155	156	143	**154**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	172	170	170	168	**170**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-12 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	116	118	127	119	126	**121**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	143	141	137	144	142	**141**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	163	163	161	162	**162**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-13 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	136	112	135	117	137	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	134	128	126	136	127	**130**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	169	175	174	175	174	**173**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-14 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	129	124	122	120	120	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	131	145	142	136	124	**136**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	180	183	179	181	182	**181**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-15 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	134	139	123	124	127	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	132	135	127	139	126	**132**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	179	179	177	177	179	**178**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-16 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	118	120	113	117	113	**116**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	112	121	112	117	115	**115**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	166	170	166	166	168	**167**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-17 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	114	115	116	113	122	**116**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	121	147	146	147	143	**141**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	164	167	169	168	167	**167**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-18 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	119	121	111	122	115	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	120	143	116	120	131	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	166	171	172	166	171	**169**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-19 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	126	127	121	138	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	149	125	150	151	144	**144**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	164	169	174	173	166	**169**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-20 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	123	126	120	124	127	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	137	138	140	132	136	**137**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	166	172	169	171	168	**169**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-21 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	112	121	111	124	111	**116**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	109	110	111	110	112	**110**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	171	171	171	172	**171**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-22 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	120	121	123	124	121	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	128	129	126	125	127	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	173	175	173	172	172	**173**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
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SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-23 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	113	110	112	113	112	**112**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	109	129	135	123	145	**128**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	169	174	172	172	171	**172**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-24 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	117	117	123	113	119	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	140	124	117	146	120	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	174	179	172	176	174	**175**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
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SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-25 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	147	147	145	138	128	**141**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	114	121	121	118	118	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	172	176	174	175	176	**175**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-26 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	120	143	116	143	114	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	120	143	124	113	118	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	172	169	171	170	**170**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
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SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-27 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	119	141	115	118	143	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	117	121	122	125	118	**121**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	175	172	171	172	173	**173**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-28 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	133	135	133	137	126	**133**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	120	131	121	130	122	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	169	172	170	169	170	**170**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
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SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-29 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	117	117	118	118	118	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	131	114	113	123	123	**121**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	179	176	181	175	183	**179**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-30 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	125	129	123	132	121	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	114	140	112	139	110	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	175	176	176	175	177	**176**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-31 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	115	117	115	116	118	**116**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	112	110	109	112	111	**111**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	172	172	170	171	**171**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-32 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	118	140	130	124	113	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	138	138	139	112	134	**132**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	174	176	174	175	173	**174**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-33 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	135	145	132	146	135	**139**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	117	116	122	114	127	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	175	177	175	175	176	**176**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-34 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	121	118	124	131	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	136	153	132	144	133	**140**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	176	175	176	173	176	**175**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-35 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	128	119	126	122	124	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	115	116	113	115	116	**115**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	175	171	172	175	**173**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-36 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	131	126	121	121	132	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	151	145	149	150	152	**149**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	175	178	175	176	175	**176**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-37 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	159	133	151	141	162	**149**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	117	119	116	121	119	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	175	179	174	177	174	**176**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-38 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	136	131	141	139	138	**137**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	130	137	132	130	136	**133**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	147	152	149	151	147	**149**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-39 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	139	123	120	126	113	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	147	135	121	116	116	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	152	154	152	153	153	**153**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-40 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	132	134	134	141	**134**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	151	150	152	149	150	**150**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	156	154	157	155	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29011

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-41 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	113	118	113	119	114	**115**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	149	149	151	152	157	**152**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	168	168	172	167	173	**170**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-42 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	131	130	125	123	**128**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	134	132	131	140	135	**134**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	162	171	165	168	166	**166**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2017-05-23

Mail To:
Sheree Grant
Waste Management Inc

Bill To:

Waste Management Inc

, ,

e-mail:
sgrant@wm.com pwalls@cecenv.com

Dear Ms. Grant,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project:	**Vista Landfill**
TRI Job Reference Number:	**29058**
Material(s) Tested:	(6) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:	
AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,

Patricia Zabaleta
Project Manager
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29058

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-43 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	122	133	133	125	130	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	144	149	137	144	145	**144**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	174	177	177	177	173	**176**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-44 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	116	113	127	133	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	122	126	134	123	126	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	163	164	164	165	166	**164**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29058

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-45 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	123	122	123	121	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	115	122	115	119	116	**117**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	172	169	168	171	**170**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-46 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	135	136	133	141	**135**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	130	135	140	145	137	**137**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	146	151	151	147	148	**149**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Waste Management Inc
Project: Vista Landfill

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29058

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-47 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	151	150	151	149	147	**150**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	155	156	154	155	151	**154**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	153	159	154	154	154	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-48 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	150	156	152	152	154	**153**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	147	153	150	157	153	**152**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	164	163	163	163	**163**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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C.7 REPAIR LOGS

CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41 Page 1 of 26

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R-1	5-18	P1/P2	1 | 2	1+70	DS-1	5057 P-2x5 5-13	5057 AP 09:13	5/19	CP	P/TCB	
R-2	5-18	P-2/P-3	2 | 3	0+90	DS-2	P-2x5	AP 5057	5/18	CP	P/TCB	
R-3	5-18	P-5/P-6	P-5 | P-6	1+45	DS-4	P-2x5	AP 5057	5/18	CP	P/TCB	
R-4	5-18	P-6/P-7	6 | P-7	2+30	DS-3	P-2x5	AP 5057	5/18	CP	P/TCB	
R-5	5/18	P-8/P-9	8 | 9	0+80	DS-6	P-2x6	JT 5173	5/18	CP	P/TCB	
R-6	5/18	P-11/P-12	11 | 12	0+15	DS-7	P-2x5	JT 5173	5/18	CP	P/TCB	
R-7	5-19	P-11/Existing	11 | Existing	0+80	DS-13	P-2x5	JT 5173 5-19	5/19	RC	P/TCB	
R-8	5/18	P-15 P-16	15 | 16	1+60	DS-14	P-2x5	5057 AP	5/18	RC	P/TCB	
R-9	5/18	P-16 P-17	16 | 17	0+25	DS-5	P-2x5	5057 AP	5/18	RC	P/TCB	
R-10	5/18	P-22 P-26	22 | 26	1+40	DS-11	P-2x5	JT 5173	5/18	CP	P/TCB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R-11	5/18	P-27/P-28	27/28	0+20	DS-8	P-2x5	5173 JT	5/18	CP	P/TCB	
R-12	5/18	P-31/P-32	31/32	0+40	DS-15	P-2x5	5173 JT	5/18	CP	P/TCB	
R-13	5/18	P-32/P-34	32/34	1+20	DS-9	P-2x5	5173 JT	5/19	RC	P/TCB	
R-14	5/18	P-37 P-38	37/38	0+45	DS-12	P-2x5	5173 JT 11:25	5/19	RC	P/TCB	
R-15	5/18	P-38 P-39	38/39	1+70	DS-13	P-2x5	5173 JT 11:45	5/19	CP	P/TCB	
R-16	5/18	P-41 P-42	41/42	1+15	DS-16	P-2x5	AP 5057	5/18	RC	P/TCB	
R-17	5/18	P-42 P-43	42/43	0+50	DS-17	P-2x5	AP 5057	5/18	RC	P/TCB	
R-18	5/18	P-44 P-45	P-44/P-45	1+25	DS-18	P-2x5	AP 5057	5/18	RC	P/TCB	
R-19	5/18	P-45 P-46	45/46	0+75	DS-19	P-2x5	AP 5057	5/18	RC	P/TCB	
R-20	5/18	P-46 P-47	46/47	1+15	DS-20	P-2x5	AP 5057	5/18	RC	P/TCB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

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Geomembrane Repair Log

Page 3 of 26

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-21	5/18	P-47 P-48	47 | 48	0+15	DS-21	P-2X5	AP 5057	5/19	RC	P/TB	
R-22	5/19	P-53 P-54	53 | 54	0+15	DS-22	P-2X5	JT 5173 11:55	5/19	RC	P/TB	
R-23	5/19	P-60 P-61	60 | 61	0+60	DS-23	P-2X5	JT 5173	5/19	RC	P/TB	
R-24	5/19	P-68 P-71	68 | 71	0+50	DS-24	P-2X5	JT 5173 12:37	5/19	RC	P/TOB	
R-25	5/19	P-74 P-76	74 | 76	2+30	DS-25	P-2X5	AP 5057	5/19	RC	P/TB	
R-26	5/19	P-79 P-81	79 | 81	3+05	DS-26	P-2X5	AP 5057	5/19	RC	P/TB	
R-27	5/9	P-71 P-72	71 | 72	2+25	DS-29	P-2X6	AP 5057	5/19	RC	P/TB	
R-28	5/19	P-78 P-79	78 | 79	2+05	DS-30	P-2X5	AP 5057	5/19	RC	P/TB	
R-29	5/19	P-76 P-77	76 | 77	0+10	DS-34	P-2X6	AP 5057	5/19	RC	P/TB	
R-30	5/19	P-86 P-88	86 | 88	0+60	DS-31	P-2X5	AP 5057	5/19	RC	P/TB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R-31	5/19	P-95 P-97	95/97	1+25	DS-35	P-2x5	AP 5057	5/19	RC	P/TCB	
R-32	5/19	P-98 P-100	98/100	1+45	DS-27	P-2x6	AP 5057	5/19	RC	P/TCB	
R-33	5/19	P-97 P-98	97/98	2+80	DS-32	P-2x5	AP 5057	5/19	RC	P/TCB	
R-34	5/19	P-103 P-105	103/105	2+35	DS-28	P-25	AP 5057	5/19	RC	P/TCB	
R-35	5/19	P-105 P-106	105/106	2+10	DS-33	P-2x6	MA 5016 10x22	5/19	JS	P/TCB	
R-36	5/19	P-106 P-107	106/107	0+75	DS-36	P-2x6	MA 5016 10x15	5/19	RC	P/TCB	
R-37	5/19	Existing P-55	Exist P35	5+30	DS-37	P-2x5	JT 5173	5/19	CP	P/TCB	
R-38	5/19	P-52 P-57	P56/P57	0+05	DS-38	P-2x5	5057 AP	5/19	RC	P/TCB	
R-39	5/19	P35 P62	55/62	0+50	DS-39	P-2x5	5173 JT	5/19	RC	P/TCB	
R-40	5/19	P-16 P-85	16/85	0+95	DS-40	P-2x5	5057 AP	5/19	RC	P/TCB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41 Page 5 of 26

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-41	5-19	P.48 P-139	48 / 109	1+00	DS-41	P-2x5	MA 5016	5/19	RC	P/TCB	
R-42	5/19	P.39 P.110	39 / 110	0+50	DS-42	P-2x5	MA 5016	5/19	RC	P/TCB	
R-43	5-18	P-11 Existing	P-11 Exist	0+00 to 0+07	Region Seam	P-3x7	JT 5173 8:05	5/18	RC	P/TCB	
R-44	5-18	P-11 Existing	P-11 Exist	1+17	Hole	P-2x3	JT 5173 08:31	5-18	RC	P/TCB	
R-45	5/18	P-11 Existing	P-11 Exist	1+32	Vacuum Pipe	P 3.5x8	JT 5173 08:32	5-19	RC	P/TCB	Replaced Patch 6-20-17 Patch 4x6. welded by = JS #5173 V.T. by P.T. *
R-46	5-18	P-11 Existing	P-11 Exist	1+52	Hole	P-1x3	JT 5173 16:40	5/19	RC	P/TCB	
R-47	5/18	P-11 Existing	P-11 Exist	1+14	Hole	P-2x3	JT 5173 16:35	5/19	RC	P/TCB	
R-48	5-19	P-11 Existing	P-11 Exist	1+45	Hole	P-2x2.5	JT 5173 07:40	5/19	RC	P/TCB	
R-49	5/19	P-11 Existing	P-11 Exist	2+03	Cut	P-3x14	JT 5173 07:45	5/19	RC	P/TCB	
R-50	5/19	P-11 Existing	P-11 Exist	2+16	Hole	P 2x7	JT 5173 07:50	5/19	RC	P/TCB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41 Page 6 of 26

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-51	5/18	Existing P-59	Existing P-59	2+25	Vacuum Pipe bolt	P-3X5	5173 JT 16:30	5/19	RC	P/TCB	Replaced Patch 6-20-17 Patch 5'x5' welded by: J.S. # 5173 V.T. by P.T. *
R-52	5/19	Existing P-11 P-59	Existing 11 | 59	2+25	T	P-2X3	5173 JJ 08:01	5/19	RC	P/TCB	
R-53	5/19	Existing P-59	Existing P-59	2+41	Hole	P-2X4	5173 JJ 08:25	5/19	RC	P/TCB	
R-54	5/19	Existing 59 | P58	Existing 59/58	2+62	T	P-2X2	5173 JT	5/19	RC	P/TCB	
R-55	5/19	Existing P-58	Existing P-58	265	T	P-1X1	5173 JT	5/19	RC	P/TCB	
R-56	5/19	Existing P-58	Existing P-58	2+88	Hole	P-2X2	5173 JT 08:20	5/19	RC	P/TCB	
R-57	5/19	Existing P-57 P-58	Existing 58 | 57	2+93	T	P-2X2	5173 JT 08:25	5/19	RC	P/TCB	
R-58	5/19	Existing P-57	Existing P-57	3+10	Hole	P-2X2	5173 JT 08:28	5/19	RC	P/TCB	
R-59	5/19	Existing P-56 P-57	Existing 57 | 56	3+24	T	P-2X3	5173 JT 08:31	5/19	RC	P/TCB	
R-60	5/19	Existing P-56	Existing 56	3+33	Hole	P-1X2	5173 JT 08:31	5/19	RC	P/TCB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R-61	5/19	Exist P-56	Exist P-56	3+56	Hole	P 2x2	5173 JT 08:40	5/19	JS	P/TCB	
R-62	5/19	Exist P56	Exist 56	3+78	Hole	P-2x2	5173 JT 08:45	5/19	RC	P/TCB	
R-63	5/19	Exist P-55	Exist 56	4+01	Hole	P-2x4	5173 JT 08:55	5/19	RC	P/TCB	
R-64	5/19	Exist P-56	Exist 56	4+24	Hole	P-2x2	5173 JT 08:58	5/19	RC	P/TCB	
R-65	5/19	Exist P-56	Exist 56	4+46	Hole	P-2x2	5173 JT 09:01	5/19	RC	P/TCB	
R66	5/19	Exist P-55 P56	Exist 56 55	4+62	T	P-2x2	5173 JT 09:05	5/19	RC	P/TCB	
R-67	5/19	Exist P-55	Exist 55	4+69	Hole	P-2x2	5173 JT 09:10	5/19	RC	P/TCB	
R-68	5/19	Exist P-55	Exist 55	4+91	Hole	P-2x7	5173 JT 09:15	5/19	RC	P/TCB	
R-69	5/19	Exist P-55	Exist 55	5+15	~~Hole~~	P-2x3	5173 JT 09:20	5/19	RC	P/TCB	
R-70	5/19	Exist P-55	Exist 55	5+38	Hole	P 2x2	5173 JT 09:25	5/19	RC	P/CB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-71	5/19	Existing P-55	Existing 55	5+60	Hole	P 2x3	5173 JT 09:35	5/19	CP	P/TCB	
R-72	5/19	Exist P-55	Exist 55	5+83	Hole	P-7x8	5173 JT 11:00	5/19	CP	P/TCB	
R-73	5/19	Exist P-55	Existing 55	6+06	Hole	P-3x7	5173 JT 09:45	5/19	CP	P/TCB	
R-74	5/19	Exist P-55	Existing 55	6+15	Hole	P 1x2	5173 JT 09:50	5/19	CP	P/TCB	
R-75	5/19	Exist. P-55/49	Existing 55/49	6+32	T	P-3x7	5173 JT 10:00	5/19	CP	P/TCB	
R-76	5/19	Exist P-49	Exist 49	6+37	Hole	P-4x4	5173 JT 10:15	5/19	CP	P/TCB	
R-77	5/19	Exist P-49	Exist 49	6+65	Hole	P-2x2	5173 JT 10:20	5/19	CP	P/TCB	
R-78	5/19	Exist P-49	Exist 49	6+95	Hole	P 3x8	5173 JT 11:00	5/19	CP	P/TCB	
R-79	5/19	Exist P-49	Exist 49	1' From 49 7+00	Hole	P-1x1	5173 JT 11:25	5/19	CP	P/TCB	
R-80	5/19	Exist P-49	Exist 49	7+19	Hole	P-2x6	5173 JT 11:30	5/19	CP	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41 Page 9 of 26

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R-81	5/19	Exist P49	exist 49	7+33	Hole	P-4x16	5173 JT 11:35	5/19	CP	P/TCB	
R-82	5-19	Exist. P-49	Exist 49	7+45	Hole	P-2x2	5173 JT 11:48	5/19	CP	P/TCB	
R-83	5-19	Exist P.49	Exist 49	0+00 + 0+04	Recon Seam	P-2x4	5173 JT 11:50	5/19	CP	P/TCB	
R-84	5/18	R-15 P-12 P-56	11 59 12	3+91	T	P-2x4	5173 JT 15:30	5/18	RC	P/TCB	
R-85	5/18	A10 P-12 P-13	10 12 13	0+28'	T	P-2x3	5173 JT 09:01	5/19	SA	P/TCB	
R-86	5/18	P-13	10 13	1 from A10 0+45	Hole	P-1x1	5173 JT 09:03	5/19	SA	P/TCB	
R-87	5/18	R-10 P-13 P-14	10 13 14	0+65	T	P-2x3	5173 JT 09:11	5/19	SA	P/TCB	
R-88	5/18	P-10 P-14 P-15	10 14 15	1+02	T	P2x4	5057 AP 09:00	5/19	JS	P/TCB	
R-89	5/18	P-10 P-15 P-16	10 15 16	1+38	T	P-2x3	5057 AP 09:45	5/19	JS	P/TCB	
R-90	5/18	P-10 P-16 P-17	10 16 17	1+75	T	P 2x3	5057 AP 09:45	5/19	JS	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-91	5/18	A13 P-17 P-18	10 17 18	2+13	T	P-2x3	5057 AP 0859	5/19	JS	P/TCB	
R-92	5/19	P-10 P-18 P-94	10 18 94	2+49	T	P-2x3	5057 AP 08:27	5/19	CP	P/TCB	
R-93	5/19	P-18 P-91 P-93 P-94	94 18 93 91	2+29	T	P-3x3	5057 AP 08:16	5/19	CP	P/TCB	
R-94	5/18	P-22 P-29 P-30	30 29 22	0+11	T	P-2x3	5173 JT 09:50	5/18	CP	P/TCB	
R-95	5/18	P-29 P-30	29 30	0+05	Hole	P-1x1	5173 JT 04:55	5/18	CP	P/TCB	
R-96	5/18	P-28 P-29	28 29	0+08	Hole	P-2x3	5173 JT 10:05	5/18	CP	P/TCB	
R-97	5/18	P-27 P-28	27 28	0+05	Hole	P-2x2	5173 JT 10:35	5/18	CP	P/TCB	
R-98	5/18	P-28 P-29 P-22	29 22 28	0+37	T	P-2+2	5173 JT 10:55	5/18	CP	P/TCB	
R-99	5/18	P-27 P-28 P-22	28 27 22	0+63	T	P-1x2	5173 JT 09:55	5/18	CP	P/TCB	
R-100	5/18	P-26 P-27 P-28	28 27 22	0+89	T	P-1x2	5173 JT 11:00	5/20	JT	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41 Page 11 of 26

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-101	5/18	P25 / P24 / P22	P-22 P-24 P-23	1+40	T	P 1x2	5173 JT 11:10	5/18	CP	P/TCB	
R-102	5/18	23 / 24 / 22	P-22 P-23 P-24	1+65	T	P-2x2	5057 AP 11:30	5/18	CP	P/TCB	
R-103	5/18	P-22 P-23	P23 / P22	1+55	Hole	P-2x2	5057 AP 11:26	5/18	CP	P/TCB	
R-104	5/18	P20 P1 P22	P22 / P20 / P21	1+49	T	P 1x2	5057 AP 11:19	5/18	CP	P/TCB	
R-105	5/18	P19 P-20 P-21	20 / 19 / 21	0+05	Hole	P-2x2	5057 AP 11:16	5/18	CP	P/TCB	
R-106	5/18	P19 P-20 P-21	20 / 19 / 21	1+44	T	P-2x3	5057 AP 11:14	5/18	CP	P/TCB	
R-107	5/18	P-1 P-19	19 / 1	1+49	Hole	P-2x9	5057 AP 10:07	5/19	CP	P/TCB	
R-108	5/18	P-1	P19 / P1	6' from 19/1 1+56	Vacuum Pipe Boot	P-3x4	5057 AP 09:23	5/19	CP	P/TCB	Replaced Patch 6-20-07 Patch = 3'x4' welded by: JS #5173 VT by PT *
R-109	5/19	P-10 P-93 P-94	10 / 94 / 93	2+41	T	P-2x4	5057 AP 08:20	5/19	CP	P/TCB	
R-110	5/19	P-10 P-93 P-94	10 / 93	2+52	T	P-1x2	5057 AP 08:25	5/19	CP	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R111	5/19	P-9 P-10 P-95	9 | 10 95	2+64	T	P. 2x2	5057 AP 08:28	5/19	JS	P/TCB	
R-112	5/19	P-9 P-95 P-97	9 97 | 95	2+75	T	P. 2x2	5057 AP 08:42	5/19	JS	P/TCB	
R113	5/19	P-8 P-9 P-97	8 | 9 97	2+86	T	P. 2x2	5057 AP 08:45	5/19	JS	P/TCB	
R114	5/19	P-8 P-97 P-98	8 98 | P-	2+99	T	P. 2x2	5057 AP 09:10	5/19	JS	P/TCB	
R115	5/19	P-7 P-8 P-98	7 | 8 98	3+10	T	P 2x2	5057 AP 09:15	5/19	JS	P/TCB	
R-116	5/19	P-7 P-98 P-100	7 100 | 98	3+22	T	P-2x2	5057 AP 09:18	5/19	JS	P/TCB	
R-117	5/19	P-6 P-7 P-100	P-6 | P-7 100	3+32	T	P-2x2	5057 AP 09:23	5/19	JS	P/TCB	
R-118	5/19	P-6 P-100 P-102	P-6 P102 | P100	3+45	T	P. 2x2	5057 AP 09:28	5/19	JS	P/TCB	
R-119	5/19	P-5 P-6 P-102	5 | 6 102	3+55	T	P-2x2	5057 AP 09:30	5/19	JS	P/TCB	
R-120	5/19	P-5 P-102 P-103	5 103 | 102	3+68	T	P-2x2	5057 AP 09:52	5/19	JS	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R-121	5/19	P-4 P-5 P-103	P4 | P5 / 103	3+78	T	P-2X2	5057 AP 09:54	5/19	JS	P/TCB	
R122	5/19	P-4 P103 P-105	P4 / 105 | 103	3+91	T	P-2X2	5057 AP 09:56	5/19	JS	P/TCB	
R-123	5/19	P-3 P-4 P-105	3 | 4 / 105	4+01	T	P-2X2	5057 AP 09:58	5/19	JS	P/TCB	
R-124	5/19	P-3 / 106 | 105	P3 P105 P-106	4+14	T	P-2X2	5057 AP 10:00	5/19	JS	P/TCB	
R-125	5/19	P-2 P-3 P-105	2 | 3 / 104	4+26	T	P-2X2	5057 AP 10:02	5/19	JS	P/TCB	
R-126	5/19	P-2 P-106 P-108	2 / 108 | 106	4+38	T	P-2X2	5057 AP 10:05	5/19	JS	P/TCB	
R-127	5/19	P-1 P-2 P-108	1 | 2 / 108	4+48	T	P-2X2	5057 AP 10:10	5/19	JS	P/TCB	
R-128	5/19	P-1 P-111 P-108	P1 / 111 | 108	4+72	T	P-3X4	5057 AP 10:15	5/19	CA	P/TCB	
R-129	5/19	P-1 P-19 P-111	19 | 1 / 111	4+80	T	P-2X2	5057 AP 10:19	5/19	CA	P/TCB	
R130	5/19	P-19 / 115 | 111	P-19 P-115 P-111	4+93	T	P-2X3	5057 AP 10:22	5/19	CA	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-131	5/19	P19 P21 P-115	21 19 115	5+03	T	P-2x3	5057 AP 10:24	5/19	CP	P/TLB	
R-132	5/19	P-21 P114 P-115	21 114 115	5+18	T	P-2x4	5057 AP 10:26	5/19	CP	P/TLB	
R-133	5/19	P-21 P33 P-114	33 21 114	5+26	T	P-2x3	5057 AP 10:28	5/19	CP	P/TLB	
R-134	5/19	P-32 P-33 P-114	32 33 114	5+32	T	P-2x3	5057 AP 10:30	5/19	CP	P/TLB	
R-135	5/19	P-32 P34 P-36 P-113 P-114	36 34 32 114	5+40	T	P-5x10	5057 AP 10:53	5/19	CP	P/TLB	
R-136	5/19	P-21	21 22	7'f m21/22 1+75	Vacuum Pipe	P-3x3	5057 AP 11:10	5/19	CP	P/TLB	Replaced Patch 6-20-17 Patch 4x5' welded by J.S. #5173 VT by PT *
R-137	5/19	P-21 P-22 P-23	23 22 21	1+80	T	P-3x3	5057 AP 11:23	5/19	CP	P/TLB	
R-138	5/19	P-21 P23 P-31	31 23 21	2+07	T	P-2x2	5057 AP 11:35	5/19	CP	P/TLB	
R-139	5/19	P-21 P31 P-32	32 31 21	2+31	T	P-2x2	5057 AP 11:37	5/19	CP	P/TLB	
R140	5/19	P-21 P-33 P-32	P-32 P-33 21	2+41	T	P-2x4	5057 AP 11:40	5/19	CP	P/TLB	

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Geomembrane Repair Log

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Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-141	5/18	P-1	P1 | P2	Start from P1/P2 2+28	Vacuum Pipe	4X6	5057 AP 11:00	5/19	JS	P/TCB	Replaced Patch 6-20-17 Patch = 3'X4' welded by JS #5173 VT by AT *
R-142	5/18	P-2 P-3	P2 | P3	2+55	Vacuum Pipe	2 5X6	5057 AP 10:53	5/19	JS	P/TCB	Replaced Patch 6-20-17 Patch 4'X4' welded by JS #5173 VT by AT *
R143	5/19	P-18 P-90 P-91	91 | 18 / 90	2+00	T	P-2X2	5057 AP 08:12	5/19	CP	P/TCB	
R-144	5/19	P-17 P-18 P-88 P-90	18 | 17 / 90 88	1+73 to 1+77	Recon Seam 6 T's	P-2X9	5057 AP 08:10	5/19	CP	P/TCB	
R-145	5/19	P-16 P-17 P-88	17 | 16 / 88	1+50	T	P-2X3	5057 AP 08:03	5/19	CP	P/TCB	
R-146	5/19	P-16 P-87 P-88	16 / P88 P87	1+44	T	P 2X3	5057 AP 08:07	5/19	CP	P/TCB	
R-147	5/19	P-86 P-87 P-88	88 | 87 / 86	2+69	T	P-1X3	5057 AP 07:53	5/19	CP	P/TCB	
R-148	5/19	P-86 P-87 P-16	86 / 87 | 16	1+18	T	P-1X2	5057 AP 07:25	5/19	CP	P/TCB	
R149	5/20	P-112 P-114	P112 | P114	0+55	DS-43	P-2X5	5173 JT 07:10	5/20	JS	P/TCB	
R-150	5/20	P-114 P-115	114 | 115	1+00	DS-44	P-2X5	JT 5173 07:45	5/20	JS	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41 Page 16 of 26

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-151	5/19	P-85 P-86 P-16	86 / 85 16	1+12	T	P-2x4	5057 AP 07:25	5/19	CP	P/TCB	
R-152	5/19	P-84 P-85 P-86	84 / 85 86	2+63	T	P-2x2	5057 AP 07:26	5/19	CP	P/TCB	
R-153	5/19	P-83 P-84 P-85	87 / 84 85	2+60	T	P-2x2	5057 AP 14:43	5/19	CP	P/TCB	
R-154	5/19	P-85	85 / 86	10' from 85/86 2+65	hole	P-2x2	5057 AP 14:40	5/19	CP	P/TCB	
R-155	5/18	P-15 P-16 P-85	16 / 15 85	0+91	T	P-1x2	JT 5173 16:10	5/19	CP	P/TCB	
R-156	5/18	P-15 P-83 P-85	15 / 85 83	0+76	T	P-1x2	JT 5173 16:03	5/19	CP	P/TCB	
R-157	5/18	P-14 P-15 P-83	15 / 14 87	0+69	T	P-1x2	JT 5173 16:30	5/19	CP	P/TCB	
R-158	5/18	P-13 P-14 P-83 P-81	14 / 13 83 / 81	0+42 TO 0+46	T Rover seam	P-2x8	JT 5173 15:55	5/19	CP	P/TCB	
R-159	5/18	P-13 P-87 P-82	13 / 81 82	0+36	T 0+36	P-1x2	JT 5173 15:55	5/19	CP	P/TCB	
R-160	5/18	P-12 P-13 P-82	13 / 12 82	0+23	T	P-1x2	JT 5173 15:46	5/19	CP	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R-161	5/20	P-9/P95	9 / 95	2+70	DS 46	P-2x5	JT 5173	5/19	RC	P/TCB	
R-162	5/19	P-92/P93	92 | 93	0+10	DS-47	P-2x5	JT 5173	5/19	RC	P/TCB	
R-163	5/18	P-34 P-35 P-36	34 | 35 | 36	2+79	DS-T	P-2x3	JT 5173 11:20	5/19	RC	P/TCB	
R-164	5/19	P-34 P-36	36 | 34	1+45	Hole	P-2x6	JT 5173 11:30	5/19	RC	P/TCB	
R-165	5/19	P-36 P-37 P-38 P-40	35 | 37 | 36 / 40	1+50	T	P-3x4	JT 5173 11:40	5/19	RC	P/TCB	
R-166	5/18	P-36 P-40 P-38	34 | 40 | 36	1+75	T	P-2x7	JT 5173 11:50	5/19	RC	P/TCB	
R-167	5/19	P-36 P-38 P-113	38 | 36 / 113	1+25	T	P-3x5	AP 5057 (TBJ)	5/19	CP	P/TCB	
R-168	5/19	P-38 P-113 P-114	38 | 113 / 114	2+74	T	P-2x2	AP 5057	5/19	RC	P/TCB	
R-169	5/19	P-114 P-38 P-39	39 | 38 / 114	2+51	T	P-1x2	BV 5170 11:03	5/19	CP	P/TCB	
R-170	5/19	P-114 P-39 P-110	110 | 39 / P 114	2+40	T	P-3x8	BV 5170 11:18	5/19	CP	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-171	5/19	P-114 P-109 P-110	109 | 110 114	2+18'	T	P-2x2	BV 5170 11:10	5/19	CP	P/TCB	
R-172	5/19	109 114	P-109 P-114	2+10	Hole	P-2x2	BV 5170 11:13	5/19	CP	P/TCB	
R-173	5/19	P48 P-109 P-114	48 | 109 114	1+96	T	P-1+2	BV 5170 11:16	5/19	CP	P/TCB	
R-174	5/19	P48 P-114	48 114	1+70	T	P-3x3	MA 5016 10:25	5/19	CP	P/TCB	
R-175	5/19	P114 P-112 P-48	114 | 112 48	1+69	T	P-1x2	MA 5016 11:00	5/19	CP	P/TCB	
R-176	5/19	P-48 P112	48 112	1+79	T	P-1x2	MA 5016 10:35	5/19	JS	P/TCB	
R-177	5/19	P-47 P-48 P-112	47 | 48 112	1+64	T	P-1x2	MA 5016 10:36	5/19	JS	P/TCB	
R-178	5/19	P46 P-47	46 | 47 112	1+40	T	P-1x2	MA 5016 10:41	5/19	JS	P/TCB	
R-179	5/19	P45 P-46 P-112	45 | 46 112	118	T	P-1x2	MA 5016 10:50	5/19	JS	P/TCB	
R-180	5/19	P-44 P-45 P-112	44 | 45 112	94'	T	P-1x2	MA 5016 10:55	5/19	JS	P/TCB	

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-181	5/19	P43 P44 P-112	43 | 44 112	0+71	T	P-2x3	MA 5016 11:00	5/19	JS	P/TCB	
R-182	5/19	P42 P-43 P-112	42 | 43 P112	48	T	P-1x2	MA 5016 11:02	5/19	JS	P/TCB	
R-183	5/19	P-41 P-42 P-112	41 | 42 112	25'	T	P-x2	MA 5016 11:15	5/19	JS	P/TCB	
R-184	5/19	P-41 P-112	112 | 41	0+00 to 0+06	Rocoon Sm	P-2x6	MA 5016 11:25	5/19	JS	P/TCB	
R-185	5/19	P114 P-115	114 | 115	0+45	Hole	P-2x3	MA 5016	5/19	RC	P/TCB	
R-186	5/19	P-111 P-115	111 | 115	0+45	Hole	P-2x3	MA 5016	5/19	RC	P/TCB	
R-187	5/19	P-107 P-108 P-111	107 | 111 108	1+32	T	P-2x2	MA 5016 10:05	5/19	RC	P/TCB	
R-188	5/19	R-106 P-107 R-108	106 | 107 108	1+32	T	P-2x3	MA 5016 10:0	5/19	RC	P/TCB	
R-189	5/19	P-108	108 | 111	9' to 108/111 1+38'	T	P-2x2	MA 5016 11:00	5/19	RC	P/TCB	
R-190	5/19	P-108	108 | 111	9' to 108/111 1+47	T	P-2x2	MA 5016 10:55	5/19	RC	P/TCB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-191	5/20	R11 R115	111 / 115	2+00	DS-45	P-2x5	JT 5173 7:55	5/20	JT	P/TCB	
R-192	5/18	P-79 P-81 P-82	79 / 81 82	3+18	T	P-2x3	JT 5173 15:43	5/18	CP	P/TCB	
R-193	5/18	P-12 P-79 P-82	12 / 82 79	0+07	T	P-2x2	JT 5173 15:33	5/18	CP	P/TCB	
R-194	5/18	P-58 P-12 P-79	12 58 / 79	3+33	T	P-3x4	JT 5173 15:25	5/19	CP	P/TCB	
R-195	5/18	P-57 P-58 P-79	57 79 / 58	3+24	T	P-2x3	JT 5173 15:21	5/19	CP	P/TCB	
R-196	5/18	P57 P-78 P-79	57 78 / 79	3+07	T	P-2x3	JT 5173 15:18	5/19	CP	P/TCB	
R-197	5/18	P-57 P57 P-78	57 78 / 57	2+94	T	P-2x3	JT 5173 15:15	5/19	CP	P/TCB	
R-198	5/18	P-77 P-78 P-79	78 79 / 78	3+01	T	P-2x2	JT 5173 15:12	5/19	CP	P/TCB	
R-199	5/18	P-76 P-77 P-79	76 79 / 77	2+53	T	P-2x2	5057 AP 14:51	5/19	CP	P/TCB	
R-200	5/18	P-77	77 78 / 0	15' from 77/78 2+60	Hole	P-2x2	AP 5057 14:45	5/19	CP	P/TCB	

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CEC

Geomembrane Repair Log

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Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-201	5/18	P-74 P-76 P-77	74 / 76 / 77	2+53'	T	P-2x2	AP 505-1 15:00	5/19	CP	P/TCB	
R-202	5/18	P-74 P-75 P-77	74 / 77 / 75	2+75	T	P-2x2	JT 5173 11:06	5/19	CP	P/TCB	
R-203	5/18	P56 P-75 P-77 P-78	75 / 77 / 78 / 56	3+02 to 3+07	T Recut Seam	P-2x5	JT 5173 15:09	5/19	CP	P/TCB	
R-204	5/18	P-56 P-73 P75	56 / 73 / 75	2+46	T	P-2x2	JT 5173 15:03	5/19	CP	P/TCB	
R-205	5/18	P-73 P-74 P-75	73 / 74 / 75	2+79	T	P-2x3	JT 5173 15:00	5/19	CP	P/TCB	
R-206	5/18	P-12 P-58 P-51	12 / 59 / 58	3+54	T	P-2x2	JT 5173 1515	5/19	RC	P/TCB	
R207	5/18	P-72 P-73 P-74	72 / 74 / 73	2+59	T	P-2x3	JT 5173 14:58	5/19	RC	P/TCB	
R-208	5/18	P56 P-71 P-72 P-73	71 / 72 / 56 / 73	2+16	Recut Seam -T	P-2x6	JT 5173 14:55	5/19	CP	P/TCB	
R-209	5/18	P-R56 P-69 R-71	56 / 69 / 71	1+85'	T	P-1x2	JT 5173 14:51	5/19	CP	P/TCB	
R-210	5/18	P-68 P-69 P-71	68 / 71 / 69	2+10	T	P-1x1	JT 5173 14:48	5/18	CP	P/TCB	

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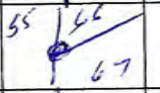
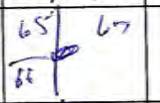
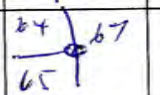
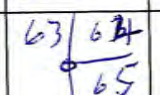
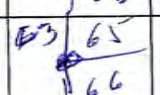
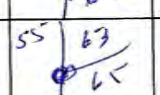
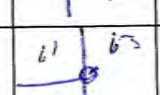
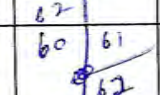
Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-211	5/18	P-55 P-56 P-67 P-68 P-69		2+15	T	P-4X6	JT 5173 14:45	5/19	CP	P/TCB	
R-212	5/18	P-55 P-66 P-67		1+24	T	P-1X2	JT 5173 14:38	5/19	CP	P/TCB	
R-213	5/18	P-65 P-66 P-67		1+65	T	P-1X2	JT 5173 14:35	5/19	CP	P/TCB	
R-214	5/18	P-64 P-65 P-67		0+96	T	P-1X2	JT 5173 13:15	5/19	CP	P/TCB	
R-215	5/18	P-63 P-64 P-65		0+93	T	P-1X2	JT 5173 13:20	5/19	CP	P/TCB	
R-216	5/18	P-63 P-65 P-66		1+64	T	P-2X4	JT 5173 14:25	5/18	CP	P/TCB	
R-217	5/18	P-55 P-63 P-65		0+94	T	P-1X2	JT 5173 14:28	5/19	CP	P/TCB	
R-218	5/18	P-55 P-62 P-63		0+63	T	P-1X2	JT 5173 2:20	5/19	RC	P/TCB	
R-219	5/18	P-61 P-62 P-63		1+21	T	P-1X2	JT 5173 3:45	5/19	CP	P/TCB	
R-220	5/18	P-60 P-61 P-62		1+21	T	P-1X2	JT 5173 13:30	5/19	CP	P/TCB	

KEY: P=Patch B=Bead C=Cap DS= Destructive Sample O=Other and describe in Comments

CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-221	5/18	P-55 P-60 P-62	55 | 60 / 62	0+32	T	P-1x2	JT 5173 14:05	5/19	CP	P/TCB	
R-222	5/18	P-55 P-59 P-60	55 | 59 / 60	1+04	T	P-3X6	JT 5173 14:10	5/19	CP	P/TCB	
R-223	5/18	P 49 P 50 P 55	49 | 50 / 55	1+11	T	P-2X6	JT 5173 14:05	5/19	CP	P/TCB	
R-224	5/18	P 50 P-51 P 60	51 | 60 / 50	0+80	T	P-2x2	JT 5173 13:31	5/19	CP	P/TCB	
R-225	5/18	P 51 P-52 P 60	51 | 60 / 52	0+70	T	P-2x2	JT 5173 13:38	5/19	CP	P/TCB	
R-226	5/18	P-50 P 51 P 52	50 | 52 / 51	1+08	T	P-2+2	JT 5173 13:41	5/19	CP	P/TCB	
R227	5/18	P 52 P 53 P-60	53 | 60 / 52	0+47	T	P-2x2	JT 5173 13:45	5/19	CP	P/TCB	
R-228	5/18	P 53 P-54 P-60	54 | 60 / 53	0+23	T	P-2+2	JT 5173 13:50	5/19	CP	P/TCB	
R-229	5/18	P-50 P-52 P 53	50 | 53 / 52	0+63	T	P-2x2	JT 5173 13:55	5/19	CP	P/TCB	
R-230	5/18	P-50 P-53 P 54	50 | 54 / 53	0+18	T	P-2x2	JT 5173 13:57	5/19	CP	P/TCB	

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Geomembrane Repair Log

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Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R-231	5/18	P-61 P-62	61 | 62	0+00 to 0+07	Recon Scan	P-3X7	AP 5057 15:27	5/19	CP	P/TCB	
R-232	5/18	P-67 P-68	67 | 68	0+00 to 0+06	Recon Scan	3 X 6	AP 5057 15:20	5/19	CP	P/TCB	
R-233	5/18	P-69 P-70 P-71	68 | 70 71	0+29	T	P-2X2	AP 5057 15:15	5/19	CP	P/TCB	
R-234	5/18	P-70 P-71 P-72	70 | 72 71	0+29	T	P-2X2	AP 5057 15:11	5/19	CP	P/TCB	
R-235	5/18	P-74	P-74	10' from 74/76 0+11	Hole	P-2X2	AP 5057 15:35	5/19	CP	P/TCB	
R-236	5/18	P-79 P-80 P-81	79 | 80 81	1+27	T	P-2X2	AP 5057 15:03	5/19	RC	P/TCB	
R-237	5/18	P-80 P-81 P-83	80 | 83 81	1+27	T	P-2X2	AP 5057 15:09	5/19	RC	P/TCB	
R-238	5/19	P-86 P-88	86 | 88	0+00 to 0+05	Recon Scan	P-2X5	AP 5057 14:29	5/19	RC	P/TCB	
R-239	5/18	P-88	88 | 84	10' from 88/89. 0+39	Vacuum Pipe Boot	P-6X6	AP 5057 14:30	5/19	RC	P/TCB	Replaced Patch 4-20-17 Patch = 5'X6' welded by JS # 5173 V.T. by P.T. *
R-240	5/18	P-88 P-89	88 | 89	0+33	Hole	P-2X3	AP 5057 14:35	5/19	RC	P/TCB	

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Rev.8/00

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Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew Mach-ine ID	Date Tested	Tested By	P/F & Initials	Comments
R241	5/18	P-85	89 | 88	1+00 From 88/89	VACUUM PIPE BOOT	P 4X7	AP 5057 16:14	5/19	RC	P/TCB	Replaced Patch 6-22-17 Patch 6'x6' welded by JS. 5173 VT by PJ.
R-242	5/18	P-95 P-96 P-97	95 | 96 | 97	1+10	T	P-2X2	AP 5057 14:57	5/19	RC	P/TCB	
R243	5/18	P-97	95 | 97	10' From 95/97 1+17	Hole	P-2X2	AP 5057 14:53	5/19	RC	P/TCB	
R-244	5/18	P-96 P-97 P-98	96 | 98 | 97	1+10	T	P-2X2	AP 5057 17:00	5/19	RC	P/TCB	
R-245	5/20	P-98 P-99 P-100	98 | 99 | 100	0+40	T	P-2X2	JT 5173	5/19	RC	P/TCB	
R-246	5/20	P-100	100 | 101	10' From 100/101 0+43	Hole	P-2X2	JT 5173	5/19	RC	P/TCB	
R-247	5/20	P-99 P-100 P-101	99 | 100 | 101	0+40	T	P-2X2	JT 5173	5/19	RC	P/TCB	
R-248	5/19	P-103 P-104 P-105	103 | 104 | 105	2+04	T	P-2X2	MA 5016 15:52	5/19	JS	P/TCB	
R249	5/19	P-104 P-105 P-106	104 | 106 | 105	2+04	T	P 2X2	MA 5016 10:20	5/19	JS	P/TCB	
R-250	5/19	P-104 P-106	104 | 106	0+00 to 0+04	Recon Seam	P 2X4	MA 5016	5/19	JS	P/TCB	

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CEC

Geomembrane Repair Log

Client: Vista Landfill Project: Cell-5 Project No.: 101.07.41 Page 26 of 26

Repair Number	Date Repaired	Seam ID	Panel(s)	Location	Description of Damage	Type / Size of Repair	Repair Crew / Machine ID	Date Tested	Tested By	P/F & Initials	Comments
R-251	5/19	P-107 P 111	107 | 111	0+35	Hole	P-3x4	JT 5173	5/19	RC	P/TCB	
R-252	5/19	P-88 P89 P90	88 | 89 90	2+30	T	P-2x2	AP 5057 07:24	5/19	CP	P/TCB	
R-253	5/18	P-89 P-90 P 91	89 | 91 90	2+32	T	P-2x3	AP 5057 07:22	5/19	CP	P/TCB	
R254	5/18	P-91 P-92 P 93	91 | 92 93	0+77	T	P-2x2	AP 5057-1 16:48	5/19	JC	P/TCB	
R255	5/18	P-92 P-93 P-58	92 | 93 93	1+77	T	P 2x2	AP 5057-1 10:1	5/19	JT	P/TCB	
R-256	5/20	P 99 P-100	99 100	0+08	DS '48	P-2x6	JT 5173 08:05	5/20	JT	P/TCB	
R-257	5/19	P-98	97 | 98 0	2' from 97/98, 2+8 1'	Hole	P-1x2	AP 5057 09:05	5/19	JT	P/TCB	
R258	5/20	P-100 P-101 P-102	P100 | P101 P102	2+72	T	P-2x3	JT 5173	5/20	JT	P/TCB	
R259	5/20	P-101 P-102 P-103	P101 | P103 P102	2+72	T	P-2x2	JT 5173	5/20	JT	P/TCB	
R260	5/20	P-48 P-109	P48 | P109	1+53	Burnout	P-2x5	JT 5173	5/20	JT	P/TCB	

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D. SUPPORTIVE DATA

D.1 RESUMES

CEC

Carlson Environmental Consultants, PC

305 South Main Street
Monroe, NC 28112
704-283-9765
704-283-9755 fax

SETH A. NUNES, P.E.

Employment

Principal at Carlson Environmental Consultants, PC (CEC). CEC is an environmental consulting firm that specializes in engineering and construction services to the solid waste industry in the southeastern United States.

Education

B.S. – Civil Engineering, University of Massachusetts- Dartmouth

Professional Registrations

Registered Professional Engineer in Florida and Texas.

Professional Experience

Mr. Nunes has over eleven (11) years of experience in solid waste engineering projects involving solid waste permit applications, expansions, modifications and registrations for landfills, transfer stations, and drop-off centers. Recently his project experience was expanded into LFG system design, construction, air permitting, construction management, LFG emissions control/compliance, LFG migration/odor control, and LFG utilization/recovery. His project experience includes sites in Texas, Oklahoma, Florida, Louisiana, North Carolina, South Carolina, Virginia, Georgia, and Alabama.

Selected project experience includes the following:

Waste Management, North Manatee Landfill Cell 2 Construction Quality Assurance - Duette, Florida - Project manager and certifying engineer for a cell construction project. Provided CQA services and prepared the submittal of the documentation report to the state for review and acceptance.

Waste Management, Vista Landfill Cell 3 Construction Quality Assurance - Apopka, Florida - Project manager and certifying engineer for a cell construction project. Provided CQA services and prepared the submittal of the documentation report to the state for review and acceptance.

Naples Landfill – Collier County, Florida - Comprehensive landfill gas consulting services for the Landfill Gas-To-Energy (LFGTE) facility. The LFGTE system currently includes five (5) 1.3 Megawatt internal combustion engines coupled to a LFG collection system consisting of over 120 wells and other collectors with 2,600 scfm dual stack and 3,000 scfm single stack utility flare. Managed and directed LFG System Operations and Maintenance (O&M), Quarterly LFG Sampling and Analysis Services, Title V Permitting Compliance, Design

Facility Grading Plans, Air Construction Permitting and LFG Collection System Upgrades (e.g. condensate sumps, interconnection piping, and controls).

Columbus County Landfill – Columbus County, North Carolina – Comprehensive landfill gas consulting that includes design build of gas collection system and end use for Landfill Gas. Specific task included review and oversight of solid waste permit application, air permit, gas system design and design option for Landfill Gas-to Energy (LFGTE) which includes design of boiler system for greenhouses.
Old Brent Road Landfill – City of Forsyth, Georgia – Comprehensive landfill gas consulting that includes design build of gas collection system to control landfill gas migration offsite. Specific tasks included preliminary master design for landfill gas-to-energy, collection system design, blower skid design and oversight for gas system installation.

Monarch Hill – Broward County, Florida – Comprehensive landfill gas engineering service for a 400 acre active landfill. Specific tasks involved development of LFG Master Plan, which included odor control evaluations, basis of design, air permitting construction phasing plan, conceptual system drawings and budgetary cost estimates. Prepared bid documents and construction drawings, construction engineering support during installation of system, construction management, construction quality assurance (CQA) testing and inspection services, and preparation of as-built and certification report.

Okeechobee Landfill – Okeechobee County, Florida – Construction Management services for installation of deep injection well for leachate injection at the landfill. Specific tasks included forcemain design, budgetary planning, construction engineering support during installation of system, construction management and budgetary responsibility.

Gulf Coast Landfill, Lee County – Florida – Closure design and construction management services for the 55 acre closure of the landfill. Specific tasks included gas system review and design, construction management, leachate generation tracking and modeling.

Okeechobee Landfill – Okeechobee County, Florida – Air permit reporting which included NSPS and Title V reporting and data collection.

Medley Landfill – Miami-Dade County, Florida – Comprehensive landfill gas engineering service for a 200 acres landfill. Specific tasks involved development of LFG Master Plan, which included odor control evaluations, basis of design, air permitting construction phasing plan, conceptual system drawings and budgetary cost estimates. Prepared bid documents and construction drawings, construction engineering support during installation of system, construction management, construction quality assurance (CQA) testing and inspection services, and preparation of as-built and certification report.

Naples Landfill – Collier County, Florida – Comprehensive landfill gas engineering service for a 100 acre active landfill. Specific tasks involved development of LFG Master Plan, which included odor control evaluations, basis of design, air permitting construction phasing plan, conceptual system drawings and budgetary cost estimates. Prepared bid documents and construction drawings, construction engineering support during installation of

system, construction management, construction quality assurance (CQA) testing and inspection services, and preparation of as-built and certification report.

King George Landfill – King County, Florida – Comprehensive landfill gas engineering service for a 400 acres landfill. Specific tasks involved development of LFG Master Plan, which included odor control evaluations, basis of design, air permitting construction phasing plan, conceptual system drawings and budgetary cost estimates. Prepared bid documents and construction drawings, construction engineering support during installation of system.

Okeechobee Landfill – Okeechobee County, Florida – Assistance with air permitting which include Title V and PSD applications. Specific task included preparation of Title V permit and preparation of design data (Flares, Engines, Emission Data) for the PSD application.

City of San Angelo Landfill – Tom Green County – Texas - Comprehensive landfill gas engineering service for a 100 acres landfill. Specific tasks involved development of LFG Master Plan, which included odor control evaluations, basis of design, air permitting, construction phasing plan, conceptual system drawings and budgetary cost estimates. Prepared bid documents and construction drawings, construction engineering support during installation of system.

Skyline Landfill – Dallas County – Texas – Landfill Gas engineering services that included 50 acres expansion of the landfill gas collection system and permitting/siting of LFGTE four (4) 1.3 megawatt internal combustion engines.

Lewisville Landfill – Denton County – Texas – Comprehensive engineering services for major permit amendment to expand landfill. This projects included various innovative designs optimizing base grades through use of waste-as-ballast, alternate liner design demonstrations, alternative final cover systems, surface water management techniques, landfill layouts and designs, landfill operating plans, surface water management plans, leachate and contaminated water plans, liner and final cover quality control plans, and closure/post-closure plans. Agency approvals included solid waste permits, water quality permits, air quality permits, 404 permits from the Army Corps of Engineers, local government approvals, etc

Greenwood Farms Landfill – Smith County – Texas – Comprehensive engineering services for major permit amendment to expand landfill. This projects included various innovative designs optimizing base grades through use of waste-as-ballast, alternate liner design demonstrations, alternative final cover systems, surface water management techniques, landfill layouts and designs, landfill operating plans, surface water management plans, landfill gas management plans, leachate and contaminated water plans, liner and final cover quality control plans, and closure/post-closure plans. Agency approvals included solid waste permits, water quality permits, air quality permits, 404 permits from the Army Corps of Engineers, local government approvals, etc.

McCarty Road Landfill – Harris County – Texas – Comprehensive engineering services for major permit amendment to expand landfill. This projects included various innovative designs optimizing base grades through use of waste-as-ballast, alternate liner design demonstrations, alternative final cover systems, surface water management techniques, landfill layouts and designs, landfill operating plans, surface water management plans, landfill gas management plans, odor studies, leachate and contaminated water plans, liner and final cover quality control plans, and closure/post-closure plans. Agency approvals included solid waste permits, water quality permits, air quality permits, 404 permits from the Army Corps of Engineers, local government approvals, etc

Delta Waste Landfill – Harris County – Texas – Comprehensive engineering services for major permit amendment to expand landfill. This projects included various innovative designs optimizing base grades through use of waste-as-ballast, alternate liner design demonstrations, alternative final cover systems, surface water management techniques, landfill layouts and designs, landfill operating plans, surface water management plans, leachate and contaminated water plans, liner and final cover quality control plans, and closure/post-closure plans. Agency approvals included solid waste permits, water quality permits, air quality permits, local government approvals, etc.

121 Recycling & Disposal Facility - Denton County – Texas – Include design and construction management of 60 acres of cell construction. Specific tasks included soils testing, quantity analysis, stockpile management design plan, resident engineering and construction management during cell construction, construction quality assurance (CQA) testing and inspection services, and preparation and submission of the certification report.

Skyline Landfill – Dallas County – Texas – Design and construction management of 20 acre cap, 20 acre cell, entrance facilities and perimeter drainage system. Specific tasks included solid waste permit modification to change perimeter drainage plan, final grading plan, base grades for the landfill. Prepared construction drawings and bid documents, resident engineering and construction management during construction, construction quality assurance (CQA) testing and inspection services, and preparation and submission of the certification report.

Weatherford Landfill – Parker County – Texas – Comprehensive engineering services for major permit amendment to expand landfill. This projects included various innovative designs optimizing base grades through use of waste-as-ballast, alternate liner design demonstrations, alternative final cover systems, surface water management techniques, landfill layouts and designs, landfill operating plans, surface water management plans, leachate and contaminated water plans, liner and final cover quality control plans, and closure/post-closure plans. Agency approvals included solid waste permits, water quality permits, air quality permits, local government approvals, etc.

Weatherford Landfill – Parker County – Texas – Design and construction management of 20 acre cell, entrance facilities, stockpile and perimeter drainage system. Prepared construction drawings and bid documents, particulate matter monitoring plan, rock blasting plan, waste excavation design, asbestos monitoring plan, resident engineering and

construction management during construction, construction quality assurance (CQA) testing and inspection services, and preparation and submission of the certification report.

Royal Oaks Landfill – Cherokee County – Texas – Design and construction management of 20 acre cell and perimeter drainage system. Specific tasks included solid waste permit modification to change perimeter drainage plan, final grading plan, base grades for the landfill. Prepared construction drawings and bid documents, resident engineering and construction management during construction, construction quality assurance (CQA) testing and inspection services, and preparation and submission of the certification report.

Sprint Landfill – Fort Bend County – Texas – Design and construction management of 12 acre cell and perimeter drainage system. Prepared construction drawings and bid documents, resident engineering and construction management during construction, construction quality assurance (CQA) testing and inspection services, and preparation and submission of the certification report.

Professional Memberships

Solid Waste Association of North America (SWANA) – Florida Chapter

American Society of Civil Engineers

Carlson Environmental Consultants, PC

305 South Main Street
Monroe, NC 28112
704-283-9765
704-283-9755 fax

TOMMY BRADFORD

Employment

Senior Technician at Carlson Environmental Consultants, PC (CEC). CEC is an environmental consulting firm that specializes in engineering and construction services to the solid waste industry in the southeastern United States.

Training and Certifications

Certified, DOT Nuclear Moisture/Density Gauge Hazardous Material Transportation Course
Certified, Toxler Nuclear Moisture Density Gauge
Nuclear Density Gauge Operator Training
Certified, Geosynthetics Monitor, GeoSyntec Consultants
OSHA 10-Hour Construction Safety
HAZWOPER 40-Hour
DOT Level 1 - Nuclear Density Gauge
Hearing Protection Training
Respiratory Protection Training
HAZWOPER Refresher 8-Hour

Professional Experience

As an installer, he was personally responsible for the installation of more than 10 million square feet of geosynthetics and after entering the CQA side of the industry in 1987, Mr. Bradford has provided CQA monitoring services for over 20 years of experience on more than 35 million square feet of geomembranes. Specifically, Mr. Bradford has considerable experience in the provision of CQA services for the installation of high-density polyethylene (HDPE), chlorosulfonated geomembranes, low-permeability soil liners, and landfill gas system construction projects. In addition, Mr. Bradford has significant experience with the installation of geonets, geotextiles, geocomposites, and geosynthetic clay liners.

Mr. Bradford's areas of expertise include construction quality assurance, project management, nondestructive and destructive testing, geosynthetics consulting, and erosion control.

A few select project experiences have been provided below:

WCA Desoto CD&D Landfill, Arcadia, Florida. Performing construction quality assurance for all soil components and stormwater structures for the cell construction and final cover construction projects at this landfill. Assisted in the preparation of both CQA documentation reports for both of projects.

Waste Management, Vista Landfill, Apopka, Florida. Performed CQA monitoring and documenting duties for the installation of a 7.6-acre cell for a landfill. Worked with the Contractor to assure proper installation and conditioning for the liner materials both soils and geosynthetics. He oversaw the installation for the protective cover and the leachate collection system of the cell. Assisted in preparation of the Construction Documentation Report.

Dow Chemical USA, Hazardous Waste Landfill, Salzburg Landfill, Midland, Michigan. Field monitor for 165,000 square feet of 100 mil thick HDPE geomembrane. Provided CQA of geomembranes, genets, geotextiles, and HDPE pipes for the double-lined facility.

Waste Management of North America, Inc., Municipal Solid Waste Landfill, Turnkey Landfill of Rochester, Rochester, New Hampshire. Site CQA manager for a single liner composed of 550,000 square feet of 60 mil thick HDPE geomembrane. Provided CQA of geomembranes, geonets, and geotextiles.

Waste Management of North America, Municipal Solid Waste Landfill, United Sanitation Sanitary Landfill, Medley, Florida. Site CQA manager for a single liner composed of 330,000 square feet of 60 mil thick HDPE geomembrane. Provided CQA of geomembranes.

Waste Management of North America, Municipal Solid Waste Landfill, Central Disposal Sanitary Landfill, Pompano Beach, Florida. Site CQA manager for a single liner composed of 1,227,602 square feet of 60 mil thick HDPE geomembrane. Provided CQA of geomembranes.

Waste Management of North America, Municipal Solid Waste Landfill, Hughes IV landfill facility, G.R.O.W.S., Inc. Landfill, Morrisville, Pennsylvania. CQA site manager for a double liner of 322,350 square feet of 60 mil thick HDPE geomembrane. Provided CQA of soils for general earthworks, drainage layers, and low permeability soil liners. Provided CQA of manholes, piping, and other appurtenances associated with the LCRS and LDCRS. Provided CQA of geomembranes, geotextiles, and geonets.

Waste Management of North America, Inc., Municipal Solid Waste Landfill Berm Liner, Southeast Hillsborough Sanitary Landfill, Picnic, Florida. CQA site manager for a single liner composed of 75,000 square feet of 30 mil thick chlorosulfonated polyethylene (CSPE) geomembrane. Provided CQA of geomembranes.

Solid Waste Authority of Palm Beach County, Municipal Solid Waste Landfill, Palm Beach County, Florida. Field superintendent for a double liner composed of 450,000 square feet of 60 mil thick HDPE primary and secondary geomembrane for a Class 1 landfill, Cell 1 of a solid waste incinerator ash landfill. Provided CQA of soils, geomembranes, geotextiles, and HDPE pipes.

Solid Waste Authority of Palm Beach County, Municipal Solid Waste Landfill, Palm Beach County, Florida. Field superintendent for a double liner composed of 450,000 square feet of 60 mil thick HDPE primary and secondary geomembrane for a Class 1 landfill, Cell 2 of a solid waste incinerator ash landfill. Provided CQA of soils, geomembranes, geotextiles, and HDPE pipes.

Waste Management of North America, Inc., Municipal Solid Waste Landfill, Turnkey Landfill of Rochester, Rochester, New Hampshire. Field superintendent for a double liner composed of 2,700,000 square feet of 60 mil thick HDPE geomembrane. Provided CQA of geomembranes, geonets, geotextiles, and bentonite-enriched clay liner.

Waste Management, Inc. of Florida, Municipal Solid Waste Landfill, United Sanitation Landfill, Cell 2, Medley, Florida. Field superintendent for a double liner composed of 1,100,000 square feet of 60 mil thick smooth and textured HDPE geomembranes. Provided CQA of geomembranes, geonets, geocomposites, geotextiles, and protective cover soil placement.

Waste Management of North America, Inc., Municipal Solid Waste Landfill, United Sanitation Sanitary Landfill, Medley Florida. Field superintendent for modifications and repairs of HDPE geomembrane. Placement of sand drainage layer. Provided CQA of modifications, repairs, and sand placement for a single liner membrane.

Waste Management of North America, Inc., Municipal Solid Waste Landfill, Pottstown, Pennsylvania. Field superintendent during installation of 609,840 square feet of 60 mil thick HDPE geomembrane. Provided CQA of geomembranes, geonets, geotextiles, geosynthetic clay liner and soils. Double liner.

Waste Management of North America, Inc., Municipal Solid Waste Landfill, United Sanitation Sanitary Landfill, Medley, Florida. Field superintendent during installation of 228,280 square feet of 60 mil thick smooth HDPE geomembrane and 539,715 square feet of 60 mil thick textured HDPE geomembrane. Provided CQA of geomembranes, geonets, geocomposites, and geotextiles. Double liner.

Waste Management, Inc. of Florida, Municipal Solid Waste Landfill, Central Disposal Sanitary Landfill, Pompano Beach, Florida. Field superintendent during installation of 929,413 square feet of 60 mil thick smooth and textured HDPE geomembrane. Provided CQA of geomembranes, geonets, geotextiles, and geosynthetic clay liner. Double liner.

Waste Management, Inc. of Florida, Municipal Solid Waste Landfill, United Sanitation Landfill, Cells 2 and 3, Medley, Florida. Field superintendent during installation of 1,100,000 square feet of 60 mil thick smooth and textured HDPE geomembranes. Provided CQA of geomembranes, geonets, geocomposites, geotextiles, and protective cover soil placement. Double liner.

Waste Management, Inc. of Florida, Municipal Solid Waste Landfill, Rosemary Hill Sanitary Landfill, Jacksonville, Florida. Field superintendent during installation of 269,966 square feet of 60 mil thick HDPE geomembrane. Provided CQA of geomembranes and geotextiles. Single liner.

Montana Power Corporation, Brine Water Storage Impoundment, Colstrip Facility, STEP Project, Colstrip, Montana. Field superintendent during evaluation of HDPE geomembrane failure. Provided CQA of geomembranes. Single liner.

Metro-Dade County, Municipal Solid Waste Landfill, North Dade Sanitary Landfill, Miami, Florida. Field superintendent during installation of 3.5 million square feet of 60 mil thick smooth HDPE geomembrane. Provided CQA of geomembranes, geonets and geotextiles. Double liner.

Waste Management, Inc. of Florida, Municipal Solid Waste Landfill, Trail Ridge Sanitary Landfill, Jacksonville, Florida. Field superintendent during installation of 1 million square feet of 60 mil thick single-liner HDPE geomembrane. Provided CQA of geomembranes, geonets, and geotextiles.

Montana Power Corporation, Brine Water Storage Impoundment, Colstrip Facility, STEP Project, Colstrip, Montana. Field superintendent during repair of a single-liner HDPE geomembrane. Provided CQA of geomembranes.

Waste Management of New Hampshire, Inc., Municipal Solid Waste Landfill, Turnkey Landfill of Rochester, Rochester, New Hampshire. Site superintendent during installation of 1,100,000 square feet of 60 mil thick smooth HDPE geomembranes. Provided CQA of geomembranes, geonets, geotextiles, and geosynthetic clay liners. Double liner system.

Waste Management, Inc. of Florida, Municipal Solid Waste Landfill, Central Sanitary Landfill, Phase 4, Pompano Beach, Florida. Site CQA manager during installation of 1,700,000 square feet of smooth and textured HDPE geomembranes. Provided CQA of geomembranes, geocomposites, geotextiles, low-permeability soil liner, and sand cover. Single liner system.

Waste Management, Inc. of Florida, Ash Monofill, Central Sanitary Landfill, Stage 3, Pompano Beach, Florida. Site CQA manager during installation of 600,000 square feet of smooth and textured HDPE geomembranes. Provided CQA of geomembranes, geosynthetic clay liners, geocomposites, geonets, geotextiles, low-permeability soil liner, sank blanket, and tire chips. Double liner system.

Waste Management of Kentucky, Inc., Municipal Solid Waste Landfill, Blue Ridge Recycling and Disposal Facility, near Richmond, Kentucky. Site CQA manager during installation of a berm consisting of structural fill.

Waste Management of Mississippi, Inc., Municipal Solid Waste Landfill, Pine Ridge Sanitary Landfill and Recycling Center, Near Meridian, Mississippi. Site CQA manager during installation of 350,000 square feet of low-permeability soil liner, 60 mil thick HDPE geomembrane, leachate collection system and sand cover.

Waste Management of Wisconsin, Inc., Municipal Solid Waste Landfill, Orchard Ridge Recycling and Disposal Facility, Near Menomonce Falls, Wisconsin. Lead CQA technician during installation of 424,000 square feet of 60 mil thick HDPE geomembrane, and geotextile.

Waste Management, Inc. of Michigan, Municipal Solid Waste Landfill, Westside RDF Sanitary Landfill, Three Rivers Michigan. Lead CQA technician during installation of 300,000 square feet of 60 mil thick geomembrane, (double liner), geosynthetic clay liner, geonet, geotextiles and leachate collection system.

Waste Management, Inc. of Michigan, Municipal Solid Waste Landfill, Autumn Hills RDF, Zeeland, Michigan. Lead CQA technician during installation of 148,000 square feet of 5 ft thick clay liner, 60 mil thick geomembrane, leachate collection system and sand cover.

Live Oak Landfill & Recycling Center, CQA Services, Dekalb County, Conley, Georgia. CQA technician during construction of the 5-acre connecting cell, which required 1) verification of subgrade elevations and condition; 2) installation of compacted cohesive soil fill; 3) installation of 60 mil HDPE secondary liner, geonet, geotextile, geosynthetic clay liner and 60 mil HDPE primary liner 4) installation of 2-foot-thick granular drainage layer/protective soil.

Live Oak Landfill & Recycling Center, Cell 1 CQA - Southern Expansion, Dekalb County, Conley, Georgia. Lead CQA technician during construction of a 16-acre composite

dual geomembrane liner system, which included construction of 1.4 million square feet of 60 mil smooth HDPE that included 700,000 square feet of geonet, Trevira geotextile and Bentofix geosynthetic clay liner.

Central Disposal Landfill & Recycling Center, CQA Services for 7.5-acre Cap, Broward County, Pompano Beach, Florida. Lead CQA technician providing field services associated with the construction of the 7.5-acre cap.

Gulf Coast Landfill & Recycling Center, Leachate Evaporation Pond CQA, Fort Meyers, Florida. CQA manager at the site. Set up the field office and conducted preconstruction soil sampling and sampling of the geosynthetic material as it arrived on site for conformance testing. The services of a geotechnical and geosynthetic laboratory were subcontracted for the testing of the soil and geosynthetic materials.

Springhill Regional Sanitary Landfill, Cell 1 Expansion, Graceville, Florida. Lead CQA technician during construction of the 11-acre cell, which consisted of: 1) verifying subgrade elevations and condition; 2) installing compacted subbase soil fill; 3) installing 60 mil HDPE secondary liner, geonet, geotextile, geosynthetic clay liner and 60 mil HDPE primary liner 4) installing geonet and geotextile; and 5) installing 2-foot-thick granular drainage layer/protective soil.

Iris Glen Environmental Center, Cell 4 Construction, Johnson City, Tennessee. Lead CQA technician during construction of the 12-acre cell, which consisted of: 1) verifying subgrade elevations and condition; 2) installing compacted subbase soil fill; 3) installation of 2'0" aggregate underdrain layer 4) installation of 2'0" compacted soil liner; 4) installing 60 mil HDPE geomembrane, geotextile geocomposite, and a 2-foot-thick granular drainage layer/protective soil cover.

Prairie Bluff Landfill, Houston, Mississippi. Lead CQA technician during construction of the 14.5-acre cell, which consisted of: 1) verifying subgrade elevations and condition; 2) installing compacted subbase soil fill; 3) installation of 2-foot compacted soil liner; 4) installing 60 mil HDPE geomembrane, and a 2-foot-thick granular drainage layer/protective soil cover.

Turnkey Landfill, Phase 4 Cell Construction, Rochester, New Hampshire. Construction manager for construction of the 14-acre cell, which consisted of: 1) verifying subgrade elevations and condition; 2) installing compacted subbase soil fill; 3) installation of 2-foot compacted soil liner; 4) installing 60 mil HDPE geomembrane, and a 2-foot-thick granular drainage layer/protective soil cover.

Turnkey Landfill, Final Landfill Closure/Cap Construction, Rochester, New Hampshire. Construction manager for construction of the 8-acre cap. This construction consisted of: 1) verifying elevations and condition of surface to receive geosynthetic liner; 2) installing 40 mil textured HDPE geomembrane, 3) installing geonet/geotextile geocomposite 4) installation of an 18" thick granular drainage layer and 4" topsoil layer to support vegetation.

US Department of Energy, Hanford Site Landfill Cell Construction, Hanford, Washington. Construction monitor for construction of the 24-acre cell, which consisted of 1) verifying subgrade elevations and condition; 2) installing compacted subbase soil fill; 3) installation of 2-foot compacted soil liner; 4) installing a 60-mil HDPE geomembrane, 5) installation of a geosynthetic drainage net geocomposite and a 2-foot-thick granular drainage layer/protective soil cover.

Pine Ridge Landfill Cell Construction, Meridian, Mississippi. Construction monitor for construction of the 6-acre cell, which consisted of: 1) verifying subgrade elevations and condition; 2) installing compacted subbase soil fill; 3) installation of 2-foot compacted soil liner; 4) installing 60 mil HDPE geomembrane, and a 2-foot-thick granular drainage layer/protective soil cover.

Duane County Landfill, Madison, Wisconsin. Construction monitor for construction of the 10-acre cell, which consisted of: 1) verifying subgrade elevations and condition; 2) installing compacted subbase soil fill; 3) installation of 2'0 compacted soil liner; 4) installing 60 mil HDPE geomembrane, and a 2-foot-thick granular drainage layer/protective soil cover.

Chemical Waste Management, Cell Construction, Ft. Wayne, Indiana. Construction monitor for construction of the 8-acre cell, which consisted of: 1) verifying subgrade elevations and condition; 2) installing compacted subbase soil fill; 3) installation of a 2-foot compacted soil liner; 4) installing 60 mil HDPE geomembrane, and a 2-foot-thick granular drainage layer/protective soil cover.

ESI

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Fax: 803-816-4205

Reno, NV
1575 Delucchi Lane # 34
Reno, NV 89502
Phone: (775) 825-6797
Fax: (775) 825-6798

Projects Superintendent

Mohammed Malimar

Mohammed has 23 years of experience in the supervision of the installation and seaming of a variety of synthetic liners and components in a wide range of industry applications. He has extensive experience in the on site supervision of safety, quality control, and all required documentation. In addition to his supervisory experience Mohammed also has actual hands on installation experience which far exceed all of the requirements to be qualified as a Leadman, Quality Control Technician and Master Seamer. As the on site ESI Superintendent he is also responsible for the direct, day to day, on site safety management of the crew.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☒ Methane Barriers
- ☒ Tank Farm
- ☒ Floating Covers
- ☐

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Projects Superintendent

Ali Malimar

Ali has 14 years of experience in the supervision of the installation and seaming of a variety of synthetic liners and components in a wide range of industry applications. He has extensive experience in the on site supervision of safety, quality control, and all required documentation. In addition to his supervisory experience Ali also has actual hands on installation experience which far exceed all of the requirements to be qualified as a Leadman, Quality Control Technician and Master Seamer. As the on site ESI Superintendent he is also responsible for the direct, day to day, on site safety management of the crew.

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
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- ☒ Potable Water Reservoirs
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Geomembrane Welder

Adersy Fernandez

Adersy has 10 years of experience in installation and seaming of a variety of synthetic liners and components. A Geomembrane Welder qualification requires a minimum of one million square feet of actual hands on geomembrane welding experience. Adersy is qualified to set-up and operate seaming equipment to include the following machines: hot wedge, hot air, extrusion, and sewing. He is familiar with all currently utilized welding techniques, installation, and safety procedures.

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
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Geomembrane Welder

Anousith Phomphaksavanh

Anousith has 18 years of experience in installation and seaming of a variety of synthetic liners and components. A Geomembrane Welder qualification requires a minimum of one million square feet of actual hands on geomembrane welding experience. Anousith is qualified to set-up and operate seaming equipment to include the following machines: hot wedge, hot air, extrusion, and sewing. He is familiar with all currently utilized welding techniques, installation, and safety procedures.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
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Regional Office:

Chapin, SC

Oconomowoc, WI

Technician - Installer

Bouapha Keooudone

Bouapha has 6 months of experience in installation of a variety of geosynthetic liners and components. In addition to his deployment duties, he is in task training to set-up and operate equipment to include the following machines under direct supervision: 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 ESI Superintendent, Master Seamer, or Quality Control Technician. He is familiar with all currently utilized safety procedures.

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 Ponds
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- ☐ Floating Covers
- ☐

Geosynthetics Installer

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Phone: (775) 825-6797
Fax: (775) 825-6798

Master Seamer

Bounchan Vongkhamchanh

Bounchan has 9 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Bounchan is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☒ Methane Barriers
- ☒ Tank Farm
- ☐ Floating Covers
- ☐

Corporate Office:
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Phone: 225-291-2700
Fax: 225-291-2788
http://www.esiliners.com

Regional Office:

Chapin, SC

Oconomowoc, WI

Installer – New Hire

Brian Phommarath

Brian has 3 months of experience in installation of a variety of geosynthetic liners and components. In addition to his deployment duties, he is in task training to set-up and operate equipment to include the following machines under direct supervision: 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 ESI Superintendent, Master Seamer, or Quality Control Technician. He is familiar with all currently utilized safety procedures.

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 Ponds
- ☐ Potable Water Reservoirs
- ☐ Evaporation Ponds
- ☐ Leach Pads
- ☐ Process Ponds
- ☐ Tank Liners
- ☐ Cut Off Trench
- ☐ Methane Barriers
- ☐ Tank Farm
- ☐ Floating Covers
- ☐

Geosynthetics Installer

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Regional Office:

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Oconomowoc, WI

Technician - Installer

Chhunly Phim

Chhunly has 1 months of experience in installation of a variety of geosynthetic liners and components. In addition to his deployment duties, he is in task training to set-up and operate equipment to include the following machines under direct supervision: 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 ESI Superintendent, Master Seamer, or Quality Control Technician. He is familiar with all currently utilized safety procedures.

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 Ponds
- ☐ Potable Water Reservoirs
- ☐ Evaporation Ponds
- ☐ Leach Pads
- ☐ Process Ponds
- ☐ Tank Liners
- ☐ Cut Off Trench
- ☐ Methane Barriers
- ☐ Tank Farm
- ☐ Floating Covers
- ☐

Geosynthetics Installer

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Fax: 803-816-4205

Master Seamer

Daoprakay Vongvone

Daoprakay has 15 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Daoprakay is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☒ Methane Barriers
- ☒ Tank Farm
- ☒ Floating Covers
- ☐

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Master Seamer

Dee Thammavongsa

Dee has 19 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience.Dee is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
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- ☒ Methane Barriers
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- ☒ Floating Covers
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1575 Delucchi Lane # 34
Reno, NV 89502
Phone: (775) 825-6797
Fax: (775) 825-6798

Leadman / Foreman

John Somkhith

John has 31 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 also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. John 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.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
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- ☒ Tank Liners
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Regional Office:

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Oconomowoc, WI

Installer – New Hire

Jose Turcois

Jose has 3 months of experience in installation of a variety of geosynthetic liners and components. In addition to his deployment duties, he is in task training to set-up and operate equipment to include the following machines under direct supervision: 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 ESI Superintendent, Master Seamer, or Quality Control Technician. He is familiar with all currently utilized safety procedures.

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
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- ☐ Evaporation Ponds
- ☐ Leach Pads
- ☐ Process Ponds
- ☐ Tank Liners
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Geosynthetics Installer

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Regional Office:

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Oconomowoc, WI

Technician - Installer

Jouney Sithixay

Jouney has 36 months of experience in installation of a variety of geosynthetic liners and components. In addition to his deployment duties, he is in task training to set-up and operate equipment to include the following machines under direct supervision: 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 ESI Superintendent, Master Seamer, or Quality Control Technician. He is familiar with all currently utilized safety procedures.

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
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Geosynthetics Installer

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Master Seamer

Kamtong Raongtong

Kamtong has 15 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Kamtong is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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
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- ☒ Evaporation Ponds
- ☒ Leach Pads
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508 D Old Lexington Highway
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Master Seamer

Keooudone Phisouoth

Keouudone has 15 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Keooudone is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☒ Methane Barriers
- ☒ Tank Farm
- ☐ Floating Covers
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Reno, NV
1575 Delucchi Lane # 34
Reno, NV 89502
Phone: (775) 825-6797
Fax: (775) 825-6798

Quality Control Technician

Koun Lim

Koun has 14 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.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
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Reno, NV 89502
Phone: (775) 825-6797
Fax: (775) 825-6798

Master Seamer

Lewis V. Nou

Lewis has 11 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Lewis is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
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- ☒ Methane Barriers
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Master Seamer

Luis Hierrezuelo

Luis has 13 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Luis is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
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Fax: (775) 825-6798

Geomembrane Welder

Matthew Sirisane

Matthew has 5 years of experience in installation and seaming of a variety of synthetic liners and components. A Geomembrane Welder qualification requires a minimum of one million square feet of actual hands on geomembrane welding experience. Matthew is qualified to set-up and operate seaming equipment to include the following machines: hot wedge, hot air, extrusion, and sewing. He is familiar with all currently utilized welding techniques, installation, and safety procedures.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
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- ☐ Floating Covers
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Phone: (775) 825-6797
Fax: (775) 825-6798

Master Seamer

Mauro Rene Turcios

Mauro has 18 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Mauro is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
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Quality Control Technician

Mohammed Ahmed

Mohammed has 6 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.

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 Ponds
- ☒ Potable Water Reservoirs
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Technician - Installer

Phillip Prasith

Phillip has 3 months of experience in installation of a variety of geosynthetic liners and components. In addition to his deployment duties, he is in task training to set-up and operate equipment to include the following machines under direct supervision: 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 ESI Superintendent, Master Seamer, or Quality Control Technician. He is familiar with all currently utilized safety procedures.

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 Ponds
- ☐ Potable Water Reservoirs
- ☐ Evaporation Ponds
- ☐ Leach Pads
- ☐ Process Ponds
- ☐ Tank Liners
- ☐ Cut Off Trench
- ☐ Methane Barriers
- ☐ Tank Farm
- ☐ Floating Covers
- ☐

Geosynthetics Installer

Corporate Office:
7943 Pecue Lane
Baton, Rouge, LA 70809
Phone: 225-291-2700
Fax: 225-291-2788
http://www.esiliners.com

Regional Offices:

Chapin, SC
508 D Old Lexington Highway
Chapin, SC 29036
Phone: 803-816-4202
Fax: 803-816-4205

Reno, NV
1575 Delucchi Lane # 34
Reno, NV 89502
Phone: (775) 825-6797
Fax: (775) 825-6798

Geomembrane Welder

Phouangsone Thavikham

Phouangsone has 16 years of experience in installation and seaming of a variety of synthetic liners and components. A Geomembrane Welder qualification requires a minimum of one million square feet of actual hands on geomembrane welding experience. Phouangsone is qualified to set-up and operate seaming equipment to include the following machines: hot wedge, hot air, extrusion, and sewing. He is familiar with all currently utilized welding techniques, installation, and safety procedures.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☒ Methane Barriers
- ☒ Tank Farm
- ☐ Floating Covers
- ☐

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Fax: (775) 825-6798

Master Seamer

Rogelio Cruz

Rogelio has 13 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Rogelio is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☒ Methane Barriers
- ☒ Tank Farm
- ☒ Floating Covers
- ☐

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Regional Office:

Chapin, SC

Oconomowoc, WI

Installer – New Hire

Sebastian Mack

Sebastian has 3 months of experience in installation of a variety of geosynthetic liners and components. In addition to his deployment duties, he is in task training to set-up and operate equipment to include the following machines under direct supervision: 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 ESI Superintendent, Master Seamer, or Quality Control Technician. He is familiar with all currently utilized safety procedures.

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 Ponds
- ☐ Potable Water Reservoirs
- ☐ Evaporation Ponds
- ☐ Leach Pads
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- ☐ Tank Liners
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- ☐ Methane Barriers
- ☐ Tank Farm
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- ☐

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Fax: (775) 825-6798

Projects Superintendent

Sivong Hongkham

Sivong has 26 years of experience in the supervision of the installation and seaming of a variety of synthetic liners and components in a wide range of industry applications. He has extensive experience in the on site supervision of safety, quality control, and all required documentation. In addition to his supervisory experience Sivong also has actual hands on installation experience which far exceed all of the requirements to be qualified as a Leadman, Quality Control Technician and Master Seamer. As the on site ESI Superintendent he is also responsible for the direct, day to day, on site safety management of the crew.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
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Regional Office:

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Oconomowoc, WI

MASTER SEAMER RESUME

Somphone Sengchareun

Somphone has 7 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Somphone is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
- ☒ Cut Off Trench
- ☒ Methane Barriers
- ☒ Tank Farm
- ☐ Floating Covers
- ☐

Master Seamer

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1575 Delucchi Lane # 34
Reno, NV 89502
Phone: (775) 825-6797
Fax: (775) 825-6798

Master Seamer

Thongsoune Luangdethleuxa

Thongsoune has 10 years of experience in installation and seaming of a variety of synthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. Thongsoune is familiar with all currently utilized welding techniques, welder set up / maintenance, safety and installation procedures. He is also familiar with and has experience with detail work including pipe boots, sumps, batten seals, and other miscellaneous appurtenances. He is also qualified to assist in the training of Geomembrane Welders.

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 Ponds
- ☒ Potable Water Reservoirs
- ☒ Evaporation Ponds
- ☒ Leach Pads
- ☒ Process Ponds
- ☒ Tank Liners
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- ☒ Tank Farm
- ☒ Floating Covers
- ☐

D.2 CERTIFICATE OF COMPLETION

Certificate of Completion

CEC

Type: Partial_____ Substantial_____ Final ✓

Project Name: Cell-5

Site Name: Vista Landfill

Date: 5-17-17

Description of Work Certified: All subgrade and subbase soil was excavated, placed, compacted and tested. All test has passed. Anchor trenches completed, East tie in to existing Liner complete. The as-built survey of subbase soil is complete.

I hereby certify that the above identified work has been inspected and that it has been properly installed. I further certify that all required testing has been completed and the results have been deemed acceptable by the CQA Engineer. The work is suitable for its intended use.

CQA'S REPRESENTATIVE

Signature: Tommy C Bradford Date: 5-17-17

Name (print): Tommy C Bradford

Title: CQA monitor

Representing: CEC

CONTRACTOR'S REPRESENTATIVE

Signature: [signature] Date: 5-17-17

Name (print): John D. Holmes

Title: V. President / Superintendent

Representing: Southeast Environmental Contracting

Certificate of Completion

CEC

Type: Partial _____ Substantial _____ Final ✓

Project Name: Cell-5

Site Name: Vista Landfill

Date: 5-23-17

Description of Work Certified: Completed All 60 mil Liner covering Cell-5 At Vista Landfill. All Non-destructive And destructive testing is complete And passed. Completed All geocomposite covering Cell-5 Liner.

I hereby certify that the above identified work has been inspected and that it has been properly installed. I further certify that all required testing has been completed and the results have been deemed acceptable by the CQA Engineer. The work is suitable for its intended use.

Contractor's ~~CQA's~~ REPRESENTATIVE

Signature: [signature] Date: 5-23-17

Name (print): Sivong Hongkham

Title: Superintendent

Representing: ESI

CQA ~~CONTRACTOR'S~~ REPRESENTATIVE

Signature: [signature] Date: 5-23-17

Name (print): Tommy C Bradford

Title: CQA Monitor

Representing: CEC

Certificate of Completion

CEC

Type: Partial _____ Substantial _____ Final ✓

Project Name: Cell-5

Site Name: Vista Landfill

Date: 6-30-2017

Description of Work Certified: Completed All protective cover sand and checked by survey, completed All leachate collection pipe and stone system and cleanout and riser pipes.

I hereby certify that the above identified work has been inspected and that it has been properly installed. I further certify that all required testing has been completed and the results have been deemed acceptable by the CQA Engineer. The work is suitable for its intended use.

CQA'S REPRESENTATIVE

Signature: Tommy C Bradford Date: 6-30-17

Name (print): Tommy C Bradford

Title: CQA Monitor

Representing: CEC

CONTRACTOR'S REPRESENTATIVE

Signature: [signature] Date: 6-30-17

Name (print): Randy L Bradshaw

Title: PM

Representing: SEC Inc.

D.3 LEACHATE FORCE MAIN TESTING

GAGE-IT, INC.

Pressure & Temperature Instrumentation

94 N. Branch Street
Sellersville, PA 18960
www.gageitinc.com

800-869-7294

(215) 453-8611
Fax: (215) 453-8770
e-mail: gageit@gageitinc.com

CERTIFICATION OF ACCURACY FROM GAGE-IT, INC STANDARDS LABORATORY

Certification No: 106420

SUBMITTED BY:

Customer: Southeast Environmental Contractors
5667 Val Del Road
Hahira, GA 31632

Attn: Corey Kirton
P.O. #: Verbal

Manufacturer: Trerice
Description: Pressure Gauge
Serial No:
Customer Ref:
Range: 0 - 200 PSI
Accuracy: 1.6 %
Pre-Cal: IN-SPEC **Final:** IN-SPEC

STANDARD TRACEABILITY REPORT

Unit under test (UUT) conforms to present requirements of MIL-STD 45662A and ANSI/NCSL Z540-1-1994, PART II. Calibration is traceable to N.I.S.T. and is within manufacturers specifications, unless noted.

STANDARDS USED

Description	N.I.S.T. Traceability	Standard Due Date
Heise Test Gauge (0-750#)	97414	9/30/2017

CALIBRATION DATA

Standard PSI	UUT As Rcvd PSI	UUT As Left PSI	Min	Max
0	0	0	-3	3
50	50	50	47	53
100	100	100	97	103
150	149	149	147	153
200	199	199	197	203

CEC

Carlson Environmental Consultants, pc

Landfill Gas, Air Permitting, and Regulatory Compliance Services

BELOW GROUND HDPE PIPE PRESSURE TEST REPORT

Site: Vista Landfill

Contractor: Southeast Environmental Contracting

Test Performed By: John Holmes (SEC)

Date: 7-12-17

Time: 08:50

Description & Location of Test Segment: Hydro test, Force main from tie in at manhole, North side to end at South West side of Cell-5

Diameter & SDR of Test Segment: 6" SDR-11 HDPE Pipe (Force main)

Length: 720 ft.

Start Time: 08:50 **End Time:** 09:50

Start Temperature: 84 °F **End Temperature:** 85 °F

Start Pressure: 130 psi **End Pressure:** 130 psi

Pass/Fail: PASS **Retest (yes/no):** NO

Comments:

Observed test gauge, and gauge on pump. Checked gauges before, during and after testing.

Record Prepared By: Tony C Bradford **Date:** 7-12-17

CEC

Carlson Environmental Consultants, pc

Landfill Gas, Air Permitting, and Regulatory Compliance Services

BELOW GROUND HDPE PIPE PRESSURE TEST REPORT

Site: Vista Landfill

Contractor: Southeast Environmental Contracting

Test Performed By:

Date: 7-12-17

Time: 14:15

Description & Location of Test Segment: Air pressure test 10" SDR-17 casing pipe for the Force main

Diameter & SDR of Test Segment:

Length: 720 ft.

Start Time: 14:15 **End Time:** 15:15

Start Temperature: 89 °F **End Temperature:** 91 °F

Start Pressure: 10 psi **End Pressure:** 10 psi

Pass/Fail: PASS **Retest (yes/no):** No

Comments:

Record Prepared By: [signature] **Date:** 7-12-17

D.4 DAILY FIELD LOGS

(1)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: (1) MON

Page 1 of 2

Project: CELL- 5

Date: 4-24-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 84 Low 60 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	6

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozer	Komatsu	61 PX	2	2
Off Road Trucks	Volvo	A30	3	3
Excavator	Komatsu	PC 390	1	1
Mini Excavator	Volvo	ECR58D	1	1

Visitors

Representing

Daily Notations:

05:00 I departed Palm City.

07:20 I Arrived on site At Vista LANDfill. SEC personnel are on Site. They Are excavating excess soil from the floor of Cell-5. They Are using 3 off road trucks to haul soil the the stockpile south of Cell-5.

09:00 SEC continues to remove soil from Cell-5 And they Are grading subbase on the slopes of Cell-5. There Are 2 pumps operating (10") to remove ground water from the floor Area of Cell-5.

11:00 A load of GCL (8 rolls) Arrived on site And was Unloaded by SEC. GCL was placed on tires. I covered

Signature: Jimmy C Bradford

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 1 Mon

Date: 4-24-17 Page: 2 of 2

the GCC with plastic. There was also a load of ADS pipe (24") that arrived and was unloaded by SEC. I took inventory of all items as they were unloaded.

11:30 The Pod arrived on Site.

13:00 I met with Sheree Grant, Discussed the schedule and materials for Cell 5 construction.

15:00 I departed the site.

17:35 I Arrived in Palm City. I worked on printing out forms to use At Vista Landfill.

9.5 HRS

Travel 5.0 HRS

Signature

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 2 Tuc

Page 1 of 2

Project: CELL- 5

Date: 4-25-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 88 Low 59 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	6

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZER	KOMATSU	61 PX	2	2
OFF ROAD TRUCK	VOLVO	A30	3	3
EXCAVATOR	KOMATSU	PC390	1	1
MINI EXCAVATOR	VOLVO	ECR58D	1	1

Visitors

Representing

Daily Notations:

05:00 I departed Palm City.

08:00 I arrived At North MANATEE LF to get test equipment for Vista LANDFILL.

09:10 I departed North MANATEE LF. for Fedex to ship protective cover samples.

11:10 I arrived At Vista LANDFILL, I took another protective cover sample At VISTA LANDFILL for Sheer testing. SEC personnel are excavating soil from CELL 5 And hauling it the the south stockpile.

14:00 I shipped the protective cover SAMPLE At Fedex,

14:45 I arrived back At North MANATEE LANDFILL. I picked up

Signature: Jonny C. Bru

(4)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 2 TUE

Date: 4-25-17 Page: 2 of 2

the remaining test equipment from the pad At North Manatee Landfill. I will take it to Vista Landfill tomorrow. Peter Walls is At North Manatee Landfill during protective cover sand And drainage stone And pipe installation.

15:35 I departed the Site.

18:30 I Arrived back in Palm City.

Signature

N. Manatee
101.18.19 4 HRS

Vista
101.07.41 4 HRS
Travel = 5.5

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 3 Wed

Page 1 of 2

Project: CELL-5

Date: 4-26-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 89 Low 61 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	6

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozer	KOMATSU	61 PX	2	2
OFF Road Truck	VOLVO	A30	3	3
Excavator	KOMATSU	PC390	1	1
mini Excavator	VOLVO	ECR58D	1	1
skid Steer	Deer	329E	1	0
water Truck			1	1
Compactor	HAMM	3410	1	0

Representing

Daily Notations:

05:00 I departed Palm city.

07:30 I Arrived on site At Vista LANDfill. SEC personnel Are on site hauling soil from the floor of Cell-5 to the south stockpile. They Are Also placing And grading soil for the sub base Layer.

09:00 I Am setting up the field laboratory in the Pod. SEC personnel continues to excavate excess soil from Cell-5 And haul to the south stockpile. They Are using the GPS hand rover to check elevations for the 6" prepared sub bases

12:00 SEC continues to excavate And haul excess soil from

Signature: Jeremy C Bradley

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 3 Wed

Date: 4-26-17 Page: 2 of 2

cell-5 to the south stockpile. I AM checking on site Laboratory equipment.

14:00 SEC continues checking grades with the GPS hand rover AND remove excess soil from cell-5.

15:35 SEC continues to excavate excess soil from cell-5 and haul to the south stockpile. I departed the site.

18:10 I Arrived in Palm City.

Signature

8.0

TRAVEL 5.0

(7)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 4 Thurs

Page 1 of 2

Project: CELL-5

Date: 4-27-17

Project: No.: 101.07.41

Weather: A.M. Clear P.M. PC

Temp.(EF): High 94 Low 70 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	7

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	61 PX	2	2
OFF ROAD TRUCKS	VOLVO	A 30	3	3
EXCAVATOR	KOMATSU	PC 390	1	1
MINI EXCAVATOR	VOLVO	ECR58D	1	1
SKIED STEER	DEERE	329 E	1	0
WATER TRUCK			1	0
COMPACTOR	HAMM	3410	1	0

Representing

Daily Notations:

04:45 I departed Palm City.

07:10 Arrived on site At North Manatee Landfill. SEC personnel Are on site.

08:00 SEC personnel Are excavating excess soil from Cell-5 And hauling it to the stockpile south of Cell-5. They Are using the hand rover to check sub base grade elevations.

10:45 SEC moved the excavator to the south east side of Cell-5. They Are removing soil from this Area.

12:30 SEC continues removing soil from Cell-5. They Are using the mini excavator to excavate Around the

Signature: Tony C Bryce

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 4 Thurs

Date: 4-27-17 Page: 2 of 2

valve on the force main line from the compose area to the tank.

14:00 SEC has the area around the valve clean. There is a steel valve with HDPE pipe leading to the leachate tank and PVC pipe to the compose area.

SEC continues removing soil from cell 5 and hauling to the south stockpile.

15:30 I departed the site

Signature Tony C Bates

(9)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 5 FRI

Page 1 of 2

Project: CELL-5

Date: 4-28-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 96 Low 71 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	7

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
Off Road Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ECR58D	1	1
Excavator	Komatsu	PC 390	1	1
Water Truck				
Compactor	Hamm	3410	1	0
Skid Steer	Deere	329E	1	0

Representing

Daily Notations:

10:00 I departed Palm City for Vista Landfill. I had a doctor appointment.

12:25 I Arrived on site At Vista Landfill. SEC personnel Are on site hauling excess soil from Cell-5 to the South stockpile.

13:30 I had a meeting with Sheree Grant and discussed the water problems for Cell-5. We also discussed the cap to be installed on the force main back to the compost area from the North east corner of Cell-5. There is a elevation change At the East tie-in to existing Liner. One area is high.

16:30 I departed the site.

Signature:

Daily Field Report

CEC

Project No.: 10.07.41 Report No.: 5 FRI

Date: 4.28-17 Page: 2 of 2

18:30 I Am working on Liner forms, printing forms to use during Liner installation at Vista Lift.

21:30 I stopped work for the day.

Signature

(11)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 6 M-W

Page 1 of 2

Project: CELL-5

Date: 5-1-17

Project No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 89 Low 73 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
Off Road Trucks	Volvo	A-30	3	3
Excavator Mini	Volvo	ECR58D	1	1
Excavator	Komatsu	PC390	1	1
water truck	Volvo	G5000	1	1
Compactor	Hamm	3410	1	1
Skid Steer	Deere	329E	1	0

Visitors

Representing

Daily Notations:

05:00 I departed Palm City

07:30 I Arrived on site At Vista Landfill, SEC personnel Are on site excavating excess soil from Cell-5. There is still water seeping out of the white sand At the toe of the North Slope. The wet Area At the south side Appears to be drying up.

08:00 SEC personnel Are excavating soil from the South west floor Area of Cell-5.

10:30 Had A on site meeting with Sheree Grant And Randy Bradshaw About the schedule And the water problems. Liner materials should start Arriving Thursday.

Signature: Jay C Brake

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 6 mon

Date: 5-1-17 Page: 2 of 2

12:30 SEC personnel continues to excavate soil from cell-5. They are using the mini excavator to clean tie in liner at the south east side.

14:00 SEC personnel are compacting soil in cell-5 with the 3410 Hamm compactor.

15:15 Moderate rain for about 15 minutes. Not enough rain to stop work. They continued to haul fill from cell-5.

17:30 SEC stopped work for the day. I discussed the remaining work with John and Shane.

17:50 I departed the site.

Signature

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 7 TUC

Page 1 of

Project: CELL- 5

Date: 5-2-17

Project: No.: 101.07.41

Weather: A.M. PC / RAIN P.M. RAIN / PC

Temp.(EF): High 82 Low 65 Rain moderate

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ECR58D	1	1
Excavator	Komatsu	PC390	1	1
Water Truck	Volvo	G5003	1	0
Compactor	Hamm	3410	1	1
skid Steer	Deere	329 E	1	1

Representing

Daily Notations:

06:55 I arrived ON Site. SEC personnel are on site.

07:15 SEC personnel are excavating excess soil from cell-5 and hauling it to the south stockpile.
I am performing moisture density on the floor of cell-5.

09:00 SEC continues excavating excess soil from cell-5. I am performing moisture density test ON the west slope.

09:55 RAIN started. SEC continues excavating soil. I am testing samples at the field laboratory.

10:30 SEC stopped work for the day because of rain. The rain is hard at times.

Signature: Jorge C Bravo

(14)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 7 Tue

Date: 5-2-17 Page: 2 of 2

I discussed the rain with John Holmes. SEC personnel checked the GCL stockpile to insure it was covered for the rain. 12:00 I had a Lunch meeting with Sheree Grant and discussed the rain and schedule. I stopped work for the day.

Signature Tony C Bush

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 8 Wed

Page 1 of 2

Project: CELL-5

Date: 5-3-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 86 Low 67 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZER	Komatsu	61 PX	2	2
OFF ROAD TRUCKS	VOLVO	A30	3	3
EXCAVATOR MINI	VOLVO	ECR58D	1	1
EXCAVATOR	Komatsu	PC390	1	1
WATER TRUCK	VOLVO	G5003	1	
COMPACTOR	HAMM	3410	1	
SKIED STEER	Deer	329 E	1	1

Visitors

Representing

Daily Notations:

06:55 I Arrived on site. SEC personnel are on site.

07:15 SEC personnel are excavating soil from Cell-5 and hauling it to the south stockpile.

I am performing moisture density test on the slopes of Cell-5. It is too wet to get on the floor.

09:00 SEC continues excavating fill from Cell-5. They are also regrading the Active LANDfill road to divert rain water away from Cell-5.

I continue to perform moisture density test on the cell-5 slopes.

11:30 SEC personnel continues to excavate soil from the south east side

Signature: Tony C Bryll

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 8 Wed

Date: 5-3-17 Page: 2 of 2

of Cell-5. They continue work at the road to the Active Landfill to divert rain water away from Cell-5. I continue to perform moisture density test.

14:00 SEC personnel continues excavating excess soil from the south east side of Cell-5. They are fine grading and compacting the cell floor.

16:30 I met with Debby and Steve. Discussed the work to divert water away from Cell-5 at the road to the Active Landfill. The road needs to be wider. John said he will widen the road on the weekend.

17:30 SEC personnel stopped work for the day. I departed the site.

Signature Tony C Byrd

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 9 Thurs

Page 1 of 2

Project: CELL- 5

Date: 5 - 4 - 17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 88 Low 69 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
Off Road Trucks	Volvo	A30	3	3
Excavator Mini	Volvo	ECR58D	1	1
Excavator	Komatsu	PC 390	1	1
Water Truck	Volvo	G-5000	1	0
Compactor	Hamm	3410	1	1
Skied Steer	Deer	329E	1	1

Visitors

Representing

Daily Notations:

06:50 I Arrived on site. SEC personnel are on site.

07:20 SEC personnel are excavating excess soil from Cell-5. They are hauling excess soil to the south stockpile. SEC personnel are also excavating the clay at the North toe of slope to try to get water seeping through the white sand to go down.

08:45 A load of HDPE pipe, Riser pipe, Leachate collection pipe and fittings arrived and was unloaded by SEC. I took inventory.

I continue to perform Moisture density test.

10:00 SEC personnel are excavating the tie-in area at the south

Signature: Tony C Boyd

Daily Field Report

CEC

Project No.: 101-07-41 Report No.: 9 Thurs

Date: 5-4-17 Page: 2 of 2

East Corner At Cell-1, I continue to perform moisture density test.

13:00 SEC personnel continues excavating excess soil from the south east corner of Cell-5. I continue to perform moisture density test.

14:00 SEC blocked off the road to the compost area and started removing road rock from the section east of Cell-5. They continue compacting soil in Cell-5. I continue performing moisture density test.

SEC has personnel walking the floor of Cell-5 to insure there are no rocks in the subbase.

17:00 SEC personnel continues hauling excess soil from Cell-5, At the south east corner.

17:35 SEC stopped work for the day.

17:45 I departed the site.

Signature Tony C. Bradford

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Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 10 FRI

Page 1 of 2

Project: CELL- 5

Date: 5 - 5 - 5

Project: No.: 101.07.41

Weather: A.M. MC/Rain P.M. PC

Temp.(EF): High 79 Low 60 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	61PX	2	2
OFFROAD TRUCKS	VOLVO	A30	3	3
EXCAVATOR MINI	VOLVO	ECR58D	1	1
EXCAVATOR	KOMATSU	RC390	1	1
WATER TRUCK	VOLVO	E-5000	1	1
COMPACTOR	HAMM	3410	1	1
LOADER	VOLVO	H36I	1	0
SKIED STEER	DEER	329E	1	1

Visitors

Representing

Daily Notations:

06:45 I arrived ON site, SEC personnel are ON site. There is RAIN this morning AND there WAS RAIN last Night.

07:30 SEC personnel are removing excess soil from the south east corner of cell-5.

08:00 Groundwater protection is on site. They will abandond the old well at the west side of cell-5.

08:30 Byrne Alyson was on site AND observed work in progress. We discussed the soil and liner work including testing. RAIN has stopped.

10:15 Groundwater Protection completing Abandoning the 4" well at the west side of cell-5, The well WAS 125 ft.

Signature: Tony C Bright

(20)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 10 FRI

Date: 5-5-17 Page: 2 of 2

SEC personnel continues excavating excess soil from the south east corner of Cell-5, SEC personnel are hand raking the pipe trench up the west slope.

13:00 SEC personnel are hand raking the west pipe trench on the west slope and haul excess soil from the south east corner. One of the trucks had a bad tire. It slows hauling soil a little.

15:30 SEC continues to haul excess soil from cell-5. They are walking the sub base checking for stones, lines or anything that should not be there.

17:35 SEC stopped work for the day. I departed the site

Signature Jeffrey L Bryant

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 11 SAT

Page 1 of 2

Project: CELL- 5

Date: 5-6-17

Project: No.: 101.07.41

Weather: A.M. Clear P.M. Clear

Temp.(EF): High 76 Low 56 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61PX	2	2
off Road trucks	Volvo	A30	3	3
Excavator MINI	Volvo	ECR58D	1	1
excavator	Komatsu	PC390	1	1
water Truck	Volvo	C500	1	1
compactor	Hamm	HS10		1
Loader	Volvo	H06I	1	1
Skid Steer	Deere	329E	1	1

Visitors

Representing

Daily Notations:

06:45 I Arrived ON site. SEC personnel Are ON site. They have the tire repaired on the truck.

07:00 SEC personnel are hauling fill from the South east corner of Cell-5. I Am working on moisture density test in cell 5

09:30 SEC made the Access road to the Active Landfill wider At the "T" intersection.
They found some trash At the south east corner excavation. All soil with trash was hauled to the Active Landfill.
Steven Grant was ON Site And observed the excavation At the South east Corner.

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 11 SA2

Date: 5-6-17 Page: 2 of 2

12:00 Had a meeting with Shevee Grant on the schedule for the Liner Crew. Will make a decision on Monday. SEC personnel continues to excavate excess soil from Cell-5. I continue to perform moisture density test on compacted Lift sections.

13:30 One of the pumps stopped working. The south pump. John informed Shevee. It will be repaired Monday.

15:30 SEC personnel stopped work for the day. I departed the site.

Signature Jay C Bright

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 12 Mod

Page 1 of 2

Project: CELL- 5

Date: 5-8-17

Project: No.: 101.07.41

Weather: A.M. Clear P.M. Clear

Temp.(EF): High 88 Low 65 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61PX	2	2
off road Trucks	Volvo	A30	3	3
EXCAVATOR MINI	Volvo	ECR58D	1	1
EXCAVATOR	Komatsu	RC390	1	1
WATER TRUCK	Volvo	G5000	1	1
Compactor	Hamm	3410	1	1
LOADER	Volvo	40G1	1	1
Skid Steer	Deer	329E	1	1

Visitors

Representing

Daily Notations:

06:40 I Arrived AT VISTA LANDFILL. There was 2 truck loads of 60 mil Liner on site.

06:50 SEC personnel are on site.

07:00 The machanics are working on the pump at the south side.

07:30 I took inventory of the 60 mil Liner as it was unloaded by SEC. I am taking moisture density test on the sub base.

10:30 The surveyor is on site to start As-built of Cell-5 sub base. SEC personnel are excavating excess soil from the south east corner of Cell-5.

Signature: Tony C Boyd

Daily Field Report

CEC

Project No.: 101.07.91 Report No.: 12 mon

Date: 5-8-17 Page: 2 of 2

I had a meeting with Randy Bradshaw and Scheve. They decided to bring the Liner crew in on Monday the 15th.

13:30 I continue moisture density test of Cell-5 sub base. SEC continues excavating soil from the south east corner, Surveyor continues As-built of Cell-5 sub base.

15:30 SEC started removing soil from the east Liner tie-in, toward the south east corner, They continue to remove excess soil in this area. I continue to perform moisture density test on sub base.

17:00 The surveyor did not complete the survey. He will return tomorrow.

17:25 SEC stopped work for the day. I departed the site.

Signature Jimmy C Byrd

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 13 Tue

Page 1 of 2

Project: CELL- 5

Date: 5 - 9 - 17

Project: No.: 101.07.41

Weather: A.M. Clear P.M. Clear

Temp.(EF): High 90 Low 62 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	D1 PX	2	2
Off Road Trucks	Volvo	A30	3	3
Excavator Mini	Volvo	ECR58D	1	1
Excavator	Komatsu	RC390	1	1
Water Truck	Volvo	G-5000	1	1
Compactor	Hamm	3410	1	1
Loader	Volvo	A40F	1	1
Skid Steer	Deer	329E	1	1

Visitors

Representing

Daily Notations:

06:45 I Arrived on site. SEC personnel are on site. There is a load of Liner on site.

07:00 I took inventory of the load of 60 mil Liner as it was unloaded by SEC.

08:00 The last load of 60 mil Liner Arrived and was unloaded by SEC. I checked the material List to insure rolls sent have the rolls conformance tested. I am also performing moisture density test. SEC personnel are excavating excess soil from the south east side of Cell-5.

The surveyor is on site to continue As-built of Cell-5.

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 13 TUC

Date: 5-9-17 Page: 2 of 2

10:00 I continue to perform moisture density test on sub base. SEC continues excavating excess soil from cell-5, south east side.

12:00 I had A lunch meeting with Shree Grant, Discussed the schedule and Anchor trench design change, seeping water.

14:00 I continue moisture density test in cell 5. SEC continues excavating soil, south east side and they are using the mini excavator to clean the east liner tie-in.

15:00 SEC pulled the liner along the tie-in back to grade under existing liner to insure drainage. They continue excavating excess soil from cell-5, south east side.

16:15 SEC stopped work for the day. They will service thier excavator and grade roads ~~at~~ stockpiles. I discussed the survey with Shree Grant.

16:40 I departed the site.

Signature Tony C Bush

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 14 Wed

Page 1 of 2

Project: CELL- 5

Date: 5-10-17

Project: No.: 101.07.41

Weather: A.M. Clear P.M. Clear

Temp.(EF): High 95 Low 67 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
Off Road Trucks	Volvo	A 30	3	3
Excavator mini	Volvo	ECR 58 D	1	1
Excavator	Komatsu	RC 390	1	1
Water Truck	Volvo	G-5000	1	1
Compactor	Hamm	3410	1	1
Loader	Volvo	H 061	1	1
Skidsteer	Deer	329 E	1	1

Representing

Daily Notations:

06:40 I arrived on site at Vista LF. I am checking logs.

06:50 SEC personnel are on site.

07:15 SEC personnel are removing excess soil from the south east corner of Cell-5. They are also grading the sump by hand.

I am performing moisture density test on sub grade in Cell-5.

09:30 I discussed the south east corner tie in with John Holmes. The tie in liner is not like the design. They will excavate the corner to insure the tie in is correct. There is a curve in the tie in liner at the south slope.

Signature: [signature]

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 14 Wed

Date: 5-18-17 Page: 2 of 2

12:30 SEC continues to excavate excess soil from cell-5 At the south east corner. They are grading and compacting sub base. I am performing moisture density test.

14:00 Brent Ross is on site and observed work in progress. He will return on Monday for the preconstruction meeting. SEC continues excavating excess soil from the south east corner. I continue to perform moisture density test.

16:30 Sheree Grant was on site and observed the south east corner tie in.

17:15 SEC stopped work for the day. I departed the site.

Signature Tony C Bok

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 15 Thurs

Page 1 of

Project: CELL- 5

Date: 5-11-17

Project: No.: 101.07.41

Weather: A.M. Clear P.M. Clear

Temp.(EF): High 96 Low 68 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	8

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	1
Off Road Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ECR58D	1	1
Excavator	Komatsu	PC39 U	1	1
Water Truck	Volvo	CA5000	1	1
Compactor	HAMM	3410	1	1
Loader	Volvo	L70G1	1	1
skidsteer	Deer	329E	1	1

Representing

Daily Notations:

06:45 I Arrived on Site. SEC personnel Are on Site.

07:15 SEC personnel continue excavating soil from the south east side. They Are excavating south of the south intercell berm.

I Am performing moisture density test on compacted sub base sections.

07:30 SEC continues excavating the tie in liner with the mini excavator at the south east corner.

10:00 I continue to perform moisture density test on sub base. SEC continues cleaning the Liner tie in up the South East Slope. They Also continues to

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 15 Thurs

Date: 5-11-17 Page: 2 of

excavate soil South of the Inter cell berm.

12:00 I had a lunch meeting with Sherce Grant. The surveyor will be on site tomorrow. Liner crew still set to start on monday.

13:00 I continue moisture density test. SEC continues excavating soil south of the inter cell berm. The mini excavator is down. They will not get it replaced until tomorrow. Work on clewing tie in liner has stopped.

16:00 I continue performing moisture density test, SEC personnel are grading the north east corner where grades were off. I continue moisture density test.

16:20 Alyson with C.D.M. smith was on site and observed work in progress and what has been completed.

17:45 SEC stopped work for the day. I departed the site.

Signature

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 16 FRI

Page 1 of 2

Project: CELL- 5

Date: 5-12-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 91 Low 68 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZER	KOMATSU	61 PX	1	1
OFF ROAD TRUCK	VOLVO	A30	3	3
EXCAVATOR MINI	VOLVO	ERC 58D	1	0
EXCAVATOR	KOMATSU	RC390	1	1
WATER TRUCK	VOLVO	G5000	1	1
COMPACTOR	HAMM	3410	1	1
LOADER	VOLVO	H061	1	1
SKID STEER	DEER	329E	1	1
EXCAVATOR MINI	IHI	55N	1	1

Representing

Daily Notations:

06:45 I Arrived on site At Vista LANDfill, SEC personnel are on site.

07:00 Geocomposite Arrived on site, SEC unloaded 3 truck loads, I took inventory of the geocomposite,

07:30 SEC personnel are excavating excess soil from the area south of the cell-5/6 intercell berm. They are Also grading the south east corner tie in slope.

08:00 The surveyor is on site to continue as-built of cell-5 sub base,

10:00 SEC continues excavating soil from the south

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 16 FRI

Date: 5-12-17 Page: 2 of 2

side of Cell-5/6 inter cell berm.

13:00 SEC continues excavating soil south of Cell-5/6 inter cell berm. They are hauling the soil to the Active Landfill. SEC moved the GCL stockpile away from the road. They covered the GCL.

13:30 SEC received another mini excavator to continue cleaning the Liner tie in at the south east corner.

15:30 SEC personnel excavated the soil off Liner at the south east corner. They cut the temporary panel out that was marked. They are grading the corner. The surveyor will return on Monday.

17:15 SEC personnel stopped work for the day. I departed the site.

Signature

(33)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 17 SAT

Page 1 of

Project: CELL- 5

Date: 5-13-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC/RAIN

Temp.(EF): High 84 Low 69 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozer	Komatsu	61 PX	2	2
Off Road Truck	Volvo	A30	3	3
Excavator mini	Volvo	ERC58D	1	0
Excavator	Komatsu	AC39	1	1
Water Truck	Volvo	G5000	1	0
Compactor	Hamm	3410	1	1
Loader	Volvo	H04	1	1
Skid Steer	Deere	329E	1	1
Excavator Mini	IHI	55N	1	1

Visitors

Representing

Daily Notations:

06:45 I Arrived on site At Vista Landfill. SEC personnel are on site.

07:15 SEC excavated the excess soil At the anchor trench area, south east tie-in to cell-1. They removed the temporary panel.

08:00 I took protective cover samples At the stockpile. I marked locations of each sample location on A map, SEC personnel are excavating soil from the area south of the cell-5/6 inter cell berm.

10:30 I shipped protective cover samples At Fedex. SEC continue excavatate soil from the south side

Signature:

(34

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 17 SAT

Date: 5-13-17 Page: 2 of 2

of Cell 5/6 intercell berm. They used the mini excavator to clean the tie in anchor trench at the South east tie in to cell-1.

18:30 SEC moved to the pond area south of cell-4 and started excavating soil. Soil is hauled to the Active Cell - Area.

14:00 Rain started. SEC personnel are standing by. Thunder storms in the Area.

14:30 SEC stopped work for the day. I departed the site.

Signature

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 18 Mon

Page 1 of 2

Project: CELL- 5

Date: 5-15-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 86 Low 67 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61PX	2	2
off Road Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ERC58D	1	0
Excavator	Kobelco	RE380	1	1
water Truck	Volvo	C5000	1	1
compactor	Hamm	3414	1	1
Loader	Volvo	L1061	1	1
Skid Steer	Deer	324 E	1	1
Excavator mini	IHI	55N	1	1

Representing

Daily Notations:

06:40 I Arrived on Site. There is fog this morning. SEC personnel are on site. The sump has water from the rain on the weekend. There was 1.6 inches of rain in the rain gauge.

07:00 Geocomposite started Arriving on site. SEC personnel are unloading the geocomposite. I am taking inventory. SEC personnel are also removing wet soil at the North toe of Slope. They are replacing it with dry soil.

10:00 SEC continues unloading trucks with geocomposite. They have 4 trucks. I am taking inventory as the trucks

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 18 MCN

Date: 5-15-17 Page: 2 of 2

Are unloaded. SEC continue fine grading and smooth drum rolling the cell floor after the rain.

Brent Ross is on site.

13:00 SEC personnel Are pumping the water out of cell 5 sump. They continue to smooth drum roll cell-5 floor.

15:00 I Attended the preconstruction meeting for cell-5 construction. Please see minutes of meetings.

16:00 A Skid Ster was delivered for EST. SEC personnel continues excavating soil from the pond south of cell-4.

17:30 SEC personnel Are fueling thier equipment. They stopped work. I departed the site.

Signature

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 19 TJC

Page 1 of 2

Project: CELL- 5

Date: 5-16-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 88 Low 67 Rain

Contractor(s) SEC ESI

Contractor Super(s) John Holmes Mohomad Milinar

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
ESI	14

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFFRoad Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ERC58D	1	0
Excavator	Komatsu	RC290	1	1
Water Truck	Volvo	G-5600	1	0
Compactor	JD Amm.	3410	1	1
Loader	Volvo	A60F	1	
Skidsteer	Deer	329E	1	1
Excavator mini	IHI	55N	1	1
Skidsteer (ESI)	Deer	329E	1	1

Visitors

Representing

Daily Notations:

06:35 I arrived on site. ESI personnel arrived on site At 06:40. They set up thier equipment trailer on the old road east of Cell-5.

06:45 SEC personnel Are on site.

07:20 ESI personnel are filling sand bags at the sand stockpile, south of Cell-5.

SEC personnel started excavating the north anchor trench from the east tie in. They are also smooth drum rolling the surface of Cell-5. SEC started excavating soil from the pond south of Cell-4.

10:30 ESI personnel continues filling sand bags and moving 60 mil

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 19 Tue

Date: 5-16-17 Page: 2 of 2

Liner to the floor of Cell-5.

SEC personnel continues excavating the anchor trench, rolling the surface of Cell-5 and excavating soil from the pond south of Cell-4.

12:30 I had a meeting with Sherce Grant, Sherce will discuss getting another forklift for ESI with Robert. ESI personnel are moving sand bags to the cell floor with rolls of 60 mil. Liner. SEC continues to excavate anchor trench and to excavate soil from the area south of Cell-4.

14:30 ESI had problems with their Skid Steer. They will get another one this afternoon. ESI departed the site until tomorrow morning.

SEC continues anchor trench excavation and excavating soil from the area south of Cell-4

17:00 A forklift arrived on site for ESI. SEC personnel are cleaning liner at the north east tie in area to Cell-1.

17:30 SEC stopped work for the day. I departed the site.

Signature Tony C Bryant

(39)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 20 Wed

Page 1 of 2

Project: CELL- 5

Date: 5-17-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 69 Rain

Contractor(s) SEC ESI

Contractor Super(s) John Holmes Mohamad Malimar

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
ESI	14

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
Off-Road Trucks	Volvo	A-30	3	3
Excavator mini	Volvo	ERC58D	1	0
Excavator	Komatsu	RC390	1	1
Water Truck	Volvo	6-5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deere	329E	1	1
Excavator mini	IHI	55N	1	1
Skied Steer Bobcat 7750		7750	1	1
Forklift (ESI)	JLG	8042	1	1

Visitors

Representing

Daily Notations:

06:30 I Arrived on site.

06:40 ESI and SEC personnel are on site.

07:20 ESI Started panel placement on the north slope. SEC personnel are completing the east tie in. They are also working on the pond, south of Cell-4.

10:30 ESI continues placing, seaming and nondestructive testing panels on the north slope. SEC continues work on the south east corner tie in.

13:00 ESI continues panel deployment and seaming. They are Air pressure testing seams as they complete seaming. The survey crew is on site to As-built the deployed

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 20 Wed

Date: 5-17-17 Page: 2 of 2

panels and the remainder of the sub base.

15:30 SEC personnel are smooth drum rolling the sub base surface in front of panel installation. There is high winds in the afternoon. ESI personnel are installing panels on the west slope, seaming and air pressure testing completed seams. Jay Davoll from the City of Apopka was on site and observed work in progress.

17:00 ESI stopped work. They installed panels P-1 through P-40 on the North and West slope. There was high winds in the afternoon.

17:40 I departed the site.

Note! I worked on the logs until 19:00 today.

Signature Tony C Byrd

(41)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 21 Thurs

Page 1 of 2

Project: CELL- 5

Date: 5-18-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 88 Low 70 Rain

Contractor(s) SEC ESI

Contractor Super(s) John Holmes Mohamad Milimar

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
ESI	2B

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZers	Komatsu	61 PX	2	2
off Road Trucks	Volvo	A-30	3	3
Excavator mini	Volvo	ERC58D	1	0
Excavator	Komatsu	RC390	1	1
Water Truck	Volvo	65000	1	1
Compactor		3410	1	1
Loader	Volvo	H061	1	1
Skidsteer	Deere	329E	1	1
Excavator mini	IHI	55N	1	1
Skid steer (ESI)	Bobcat	7750	1	1
Forklift (ESI)	JLG	5042	1	1

Visitors

Representing

Daily Notations:

06:30 I Arrived on Site.

06:45 ESI AND SEC personnel are on site. ESI has 2 crews on site today.

07:00 SEC personnel are smooth drum rolling the sub base in front of ESI installing panels. ESI started placing panels on the west slope.

09:00 SEC personnel are working on the pond excavation south of Cell-4. They continue to smooth drum roll the sub base in front of ESI deploying liner. ESI personnel are placing and seaming panels, air testing seams and making repairs. I am observing and recording work as it is performed.

Signature:

Daily Field Report

CEC

Project No.: 01.07.41 Report No.: 21 Thurs

Date: 5-18-17 Page: 2 of 2

Peter Walls is on site monitoring Air pressure test of seams.

12:00 I Am checking the seams AND panels while ESI is At Lunch.

14:00 ESI personnel continues to place AND seam panels in Cell-5. SEC personnel Are smooth drum rolling in front of panel placement. SEC personnel Are also excavating soil from the pond south of Cell-4.

16:30 ESI continues placing panels, seaming panels, Air testing seams, making repairs AND VACUUM testing repairs. SEC personnel continues to remove soil from the pond south of Cell-5.

17:30 ESI personnel stopped work for the day. SEC personnel Also stopped work for the day.

18:20 I worked on logs from 18:45 to 20:45 tonight.

Signature

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 22 FRJ

Page 1 of 2

Project: CELL-5

Date: 5-19-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 86 Low 72 Rain

Contractor(s) SEC ESI

Contractor Super(s) John Holmes Sivong Honkham

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
ESI	27

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	61 PX	2	2
OFF ROAD TRUCKS	VOLVO	A-30	3	3
EXCAVATOR MINI	VOLVO	ERC58D	1	1
EXCAVATOR	KOMATSU	RC390	1	1
WATER TRUCK	VOLVO	G, 5000	1	2
COMPACTOR	HAMM	3410	1	1
LOADER	VOLVO	H061	1	1
SKID STEER	DECRE	329F	1	1
EXCAVATOR MINI	IHI	55N	1	1
SKID STEER (ESI)	BOBCAT	7750	1	1
FORKLIFT (ESI)	JLG	8042	1	1

Visitors

Representing

Daily Notations:

06:30 I ARRIVED ON SITE AT VISTA LANDFILL.

06:45 ESI AND SEC PERSONNEL ARE ON SITE. MOHOMAD MILIMAR IS NOT ON SITE. HE WAS REPLACED BY SIVONG HONKHAM.

07:45 ESI CONTINUED PANEL PLACEMENT, SEAMING, AIR TESTING, REPAIRS AND VACUUM TESTING. SEC PERSONNEL ARE EXCAVATING SOIL FROM THE POND SOUTH OF CELL-4. THEY ALSO STARTED REMOVING TREES WEST OF CELL-5 FOR THE POND THERE.

10:30 ESI COMPLETED PLACING ALL THE PANELS IN CELL-5. THEY ARE SEAMING AND MAKING REPAIRS. I AM WALKING THE LINER TO INSURE ALL REPAIRS ARE COMPLETE.

Signature: Robert Bragg

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 22 FAI

Date: 5-19-17 Page: 2 of 2

13:00 We walked the North Slope. All repairs are complete. ESI started geocomposite installation At the North east corner AND Are working west.

SEC personnel continues to excavate soil from the pond South of Cell-4 AND remove trees West of Cell-5

16:00 ESI continues installing geocomposite on the North AND West Slope of Cell-5. I Am observing AND recording the geocomposite placement, placing ties, AND Sewing of the geocomposite.

17:30 SEC AND ESI Stopped work for the day. I Am checking repairs. 35 Rolls of Geocomposite deployed.

18:00 I departed the Site. I worked 1.5 hours tonight ON bgs.

Signature Tony C Bentley

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 23 SAT

Page 1 of 2

Project: CELL-5

Date: 5-20-17

Project No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 73 Rain

Contractor(s) SEC ESI

Contractor Super(s) John Holmes Sivong Honkham

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
ESI	27

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozer	Komatsu	61 PX	2	2
Offroad Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ERC58D	0	1
Excavator	Komatsu	PC390	1	1
Water Truck	Volvo	G5000	1	1
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deere	329F	1	1
Excavator mini	IHI	55N	1	1
Skid steer (ESI)	Bobcat	T750	1	1
forklift (ESI)	JLG	8042	1	1

Visitors Representing

Daily Notations:

06:30 I Arrived on Site.

06:45 SEC and ESI Arrived on Site.

07:10 ESI started geocomposite installation from where they stopped yesterday. I Am walking the Liner in front of geocomposite installation to insure All repairs are complete.

SEC personnel are removing trees, west of cell-5, and excavating soil from the pond south of cell-4.

10:00 ESI continues to install geocomposite, tie seams and sew geotextile. I Am walking Liner in front of geocomposite placement, checking geocomposite ties and sewing.

Signature: Tony C Bright

Daily Field Report

CEC

Project No.: 101-07.41 Report No.: 23 SAT

Date: 5-20-17 Page: 2 of 2

13:00 SEC personnel continues to install geocomposite in cell-5. I am walking liner in front of geocomposite installation to insure all repairs are complete. I am checking geocomposite ties and sewing.

14:30 SEC personnel stopped work for the day, ESI personnel continues geocomposite installation. I continue to observe liner in front of geocomposite installation, ties and sewing.

16:30 ESI completed the geocomposite along the east tie in to protect the liner from soil washing from rain.

17:00 ESI stopped work for the day. They installed 70 rolls of geocomposite today.

I departed the site.

Signature

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 24 MON

Page 1 of 2

Project: CELL-5

Date: 5-22-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 74 Rain

Contractor(s) SEC ESI

Contractor Super(s) John Holmes Sivong Honkham

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
ESI	11

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ERC58D	1	0
Excavator	Komatsu	RC390	1	1
Water Truck	Volvo	G5000	1	1
Compactor	Hamm	3410	1	0
Loader	Volvo	140G	1	1
Skidsteer	Dcere	329F	1	1
Excavator mini	IHI	55W	1	1
skied steer (ESI)	Bobcat	7750	1	1
Forklift (ESI)	JLC	8042	1	1

Visitors Representing

Daily Notations:

06:30 I Arrived on site.

06:45 ESI and SEC personnel are on site.

07:00 ESI started geocomposite installation in cell-5. The have 1 crew on site today. I am walking the Liner in front of geocomposite installation, checking for any damage and to insure the Liner is clean. I am checking ties and sewing.

SEC personnel are removing trees west of cell 5 and excavating soil from the pond South of cell-4. They are Also compacting soil in the Anchor trench.

09:00 A load of geotextile arrived on site. I took inventory as it

Signature: Jimmy C Bryant

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 24 MON

Date: 5.22.17 Page: 2 of 2

WAS UNloaded by SEC.

11:30 ESI continues installing geocomposite, placing plastic ties and sewing geotextile seams. I continue checking liner and geocomposite.

SEC continues removing trees, west of Cell 5 and compacting fill in the anchor trench.

14:00 ESI continues geocomposite installation. I am walking liner and checking geocomposite ties and sewing.

SEC personnel continues to remove trees west of Cell 5.

16:30 ESI stopped work for the day. I prepared destructive seam samples tested Saturday late.

17:30 I shipped destructive samples at Fedex and stopped work for the day.

Signature Tony C Bu

(49)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 25 TUE

Page 1 of 2

Project: CELL-5

Date: 5-23-17

Project No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 92 Low 73 Rain

Contractor(s) SEC ESI

Contractor Super(s) John Holmes Sivong HonkHam

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
ESI	11

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	volvo	A 30	3	3
Excavator mini	volvo	ERC 58D	1	0
Excavator	Komatsu	RC 390	1	1
Water Truck	volvo	G 5000	1	1
compactor	Hamm	3410	1	0
Loader	volvo	H 061	1	1
Skid Steer	Deer	329 F	1	1
Excavator mini	IHI	55N	1	1
skid steer (ESI)	Bobcat	7750	1	1
forklift (ESI)	JLG	8042	1	1

Visitors Representing

Daily Notations:

06:40 I Arrived on Site. ESI AND SEC personnel Are on Site. There was less than 1/2 inch of rain last Night. There is standing water At the sump.

07:10 ESI personnel started geocomposite installation. I Am checking Liner, Geocomposite ties AND Sewing of seams. SEC personnel Are excavating soil from the pond south of Cell-4 and West of Cell-5.

09:30 ESI completed All geocomposite installation for Cell-5. They started clean up of the work Area. ESI placed Sand bags on the intercell berm tie-in to Cell-6 for protection when the intercell berm is cleaned during Cell-6 construction.

Signature: Jimmy C Bagley

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 25 Tue

Date: 5-23-17 Page: 2 of 2

11:30 ESI moved Rolls of 60 mil Liner and geocomposite to A storage Area Near the main entrance. I took inventory of All materials Not used AND gave it to Sheree Grant.

14:00 I walked the Cell-5 Area with Sivong. Everything is completed. We both signed A certificate of completion for Liner and geocomposite. I received the remaining Destructive test results. All test passed. ESI Demobilized from the site.

SEC continues work on Ponds South of Cell-4 And west of Cell-5.

16:00 Drillers Are on Site. They Are drilling monitoring wells. SEC continues work on ponds.

17:55 Drillers AND SEC departed the site. I departed the Site.

Signature

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 26 Wed

Page 1 of 2

Project: CELL-5

Date: 5-24-17

Project No.: 101.07.41

Weather: A.M. MC P.M. MC/TRACE Rain

Temp.(EF): High 81 Low 72 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	D1 PX	2	2
OFF ROAD TRUCKS	VOLVO	A 30	3	3
EXCAVATOR MINI	VOLVO	ERC58D	1	0
EXCAVATOR	KOMATSU	PC390	1	1
WATER TRUCK	VOLVO	FG600	1	0
COMPACTOR	HAMM	3410	1	0
LOADER SKIDSTEER	VOLVO	HL61	1	1
	BOBCAT	329F	1	1
EXCAVATOR MINI	IHI	55N	1	0

Visitors

Representing

Daily Notations:

06:30 I arrived on site at Vista Landfill.

06:40 SEC personnel are on site.

07:15 SEC personnel are working on the ponds at the south side of cell-4 and at the west side of cell-5. I am working on the Liner drawing As-built.

09:30 SEC continues to work on ponds at cell-4 south side and at the west side of cell-5. They are grading roads at the stockpile area.

12:30 I had a lunch meeting with Sharee Grant and discussed the material not used and sand placement.

14:50 Light rain started. Only lasted about 15 minutes.

Signature: Tony C Bonfe

(52)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 26 Wed

Date: 5-24-17 Page: 2 of 2

SEC personnel continues to grade the roads and excavate soil from the ponds.

I continue to work on the liner as-built drawings.

16:30 I departed the site to work on the drawings. It is too windy in the Pod.

19:00 I stopped work for the day.

Signature

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 27 Thurs

Page 1 of 2

Project: CELL-5

Date: 5-25-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 81 Low 65 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	61 PX	2	2
OFF ROAD TRUCKS	VOLVO	A30	3	3
EXCAVATOR MINI	VOLVO	ERC58D	1	0
EXCAVATOR	KOMATSU	RC390	1	1
WATER TRUCK	VOLVO	C5000	1	1
COMPACTOR	HAMM	3410	1	0
LOADER	VOLVO	H061	1	1
SKID STEER	DEER	329F	1	1
EXCAVATOR MINI	IHI	55N	1	0

Visitors

Representing

Daily Notations:

06:45 I Arrived on site. SEC personnel are on site.

07:10 SEC personnel are hauling fill to construct ramps into Cell-5 for protective cover SAND placement.

09:00 SEC started placing Protective Cover SAND in Cell-5. They are keeping trucks a minimum of 3 ft. Above the Liner.

09:30 11 Rolls of DURASKRIM Arrived and was unloaded by SEC. They are pumping rain water from Cell-5 Sump. They continue to place protective cover SAND in Cell-5.

11:00 Drainage stone for the leachate collection system started Arriving on site. Stone is #57 and #4. I took samples of each for laboratory testing. SEC continues

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 27 Thurs

Date: 5-25-17 Page: 2 of 2

14:00 SEC continues placing protective cover SAND in cell-5. They Are keeping trucks ON A minimum of 3 ft. of SAND. They Are using foam rubber for grade stakes. SEC personnel Are installing 4x4 post in the Anchor trench for edge of Liner markers.

16:45 SEC continues protective cover SAND placement in cell-5. They Are working ON the south side. I departed the site for Fedex.

17:50 I shipped #57 and #4 drainage stone samples for Laboratory testing. I stopped work for the day.

Signature

(55)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 28 FRI

Page 1 of 2

Project: CELL-5

Date: 5-26-17

Project: No.: 101.07.41

Weather: A.M. clear P.M. pc

Temp.(EF): High 88 Low 63 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes.

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ERC 58D	1	0
Excavator	Komatsu	RC390	1	1
Water Truck	volvo	G 5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	4061	1	1
Skid Steer	Deer	329F.	1	1
Excavator mini	IHI	65N	1	0

Visitors

Representing

Daily Notations:

06:45 I Arrived on Site. SEC personnel are on Site.

07:15 SEC personnel started placing protective cover sand in Cell-5 At the south west side. They Are using foam rubber stakes for the sand thickness, Trucks are kept on a minimum of 3 ft. of sand. I am observing the sand placement for wrinkles, I am checking the geo Composite in front of sand placements.

11:00 SEC continues to place And grade protective cover sand At the South west side of Cell-5. I continue to observe the sand placement. Trucks are kept on A minimum of 3 ft. of sand.

Signature: Gary L Byrd

(56)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 28 FRI

Date: 5-26-17 Page: 2 of 2

14:00 Peter Walls is on site. Peter will take my place tomorrow.

SEC personnel continues to place protective cover sand in cell-5. I continue to check geocomposite in front of protective cover SAND placement.

16:45 Peter Wall is on site to monitor protective cover SAND placement. I departed the site.

Signature

(57)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 28 FRT

Page 1 of

Project: CELL- 5

Date: 5/26/2017

Project: No.: 101.07.41

Weather: A.M. partlycloudy P.M. partlycloudy

Temp.(EF): High Low Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	8+1

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozer	Komatsu	61 PX	2	2
Offroad truck	Volvo	A30	3	3
Excavator mini	Volvo	ERC58D	1	1
Excavator	Komatsu	RC390	1	1
Water Truck	Volvo	G 5000	1	1

Visitors

Representing

Daily Notations:

5:30 Stopped work placing protective cover in southeast corner and up slope. Finish welding solid cleanout up slope SE corner.

Signature:

(58)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 29 SAT

Page 1 of

Project: CELL- 5

Date: 5/27/2017

Project: No.: 101.07.41

Weather: A.M. Sunny P.M. Sunny

Temp.(EF): High Low Rain NA

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	8+1

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozer	Komatsu	61 PY	2	2
Offroad truck	Volvo	A30	3	2
Excavator mini	volvo	ERC 58D	1	1
Excavator	Komatsu	RC 390	1	1
Water Truck	Volvo	6 5000	1	0

Visitors

Representing

Daily Notations: SEC on site around 7am. They push sand on the corner and up the slope. They cover the cleanout on the slope. Stop about 5 feet from the top. Other group welds perforated pipe at base of slope parallel to Cell 1 runout. done to where it turns down to the sump. Geotextile is placed around the perforated pipe.

11am SEC makes an access half way along the intercell berm continues pushing protective cover from center until 2:40 pm when they halt.

Other group works at removing metal dewatering pipe that runs parallel intercell berm.

Signature:

(59)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 30 Tue

Page 1 of 2

Project: CELL- 5

Date: 5-30-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 92 Low 75 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
Trucks	Volvo	A-30	3	3
Excavator Mini	Volvo	ERC58D	1	1
Excavator	Komatsu	PC-390	1	1
Water Truck	Volvo	G5000	1	1
Compactor	Ingersoll Rand	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deere	324F	1	1

Visitors

Representing

Daily Notations:

06:55 I Arrived on site At Vista LF. SEC personnel Are on Site.

07:15 SEC personnel started placing protective cover sand in Cell-5. They are placing At the south east side. Foam rubber stakes Are used to control the 2 ft. of sand. Trucks Are kept on 3 ft. of Sand.

08:00 SEC used the GPS to locate the location for the 6" perforated leachate collection pipe And the solid clean out pipe on the south east side.

09:30 SEC continues placing protective cover sand. They also started

Signature: Tony C Boyle

(60)

Daily Field Report

CEC

Project No.: 10.07.41 Report No.: 30 Tue

Date: 5-30-17 Page: 2 of 2

installing the 8 oz geotextile, 6" SDR-11 perforated pipe and the 6" SDR-11 solid clean out pipe at the south east slope and along the east tie in. I am observing the leachate collection installations.

13:00 SEC continues placing protective cover sand. They continue to install the leachate collection system. I am observing and checking measurements.

16:00 SEC continues with protective cover SAND. They are placing #57 stone 1.5 ft Thick and 2 ft. wide, above and around the 6" SDR-11 perforated leachate collection pipe. They are placing PVC survey markers on the pipe every 50 ft. They are sewing the geotextile.

17:30 SEC stopped work for the day. I departed the sit.

Signature

(61)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 31 Wed

Page 1 of 2

Project: CELL- 5

Date: 5-31-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 75 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF ROAD Trucks	VOLVO	A-30	3	2
EXCAVATOR MINI	VOLVO	ERC 58D	1	1
EXCAVATOR	Komatsu	RC390	1	1
WATER Truck	VOLVO	6500D	1	0
COMPACTOR	HAMM	3410	1	0
Loader	VOLVO	A40G	1	1
Skid Steer	Deer	329F	1	1

Visitors

Representing

Daily Notations:

06:55 I Arrived on Site. SEC personnel Are on Site. There was .34 inches of rain Last night. SEC personnel Are pumping water from Cell-5 Sump.

07:15 SEC started placing protective cover SAND in Cell 5 At the South Side. They Are grading Along the Leachate collection trench Area. Rubber grade stakes Are used And trucks Are kept on A minimum of 3 ft. of SAND.

10:00 SEC continues to place protective cover SAND. They Also continue to install the 6" SDR-11 Leachate collection pipe through the Center of Cell-5. Pipe locations Are Located with the GPS rover. I Am observing the placement of the

Signature: Gary C Boyd

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 31 Wed

Date: 5-31-17 Page: 2 of 2

& 02 geotextile, pipe placement, fusing of the pipes, checking perforation to insure they are in line, #57 stone placement over and around the pipe and sewing of geotextile. They are installing survey pipes every 50 ft.

13:00 I had a lunch meeting with Sheree Grant and discussed the Leachate pipe installation and the schedule.

SEC personnel continues placing and grading protective cover sand in cell-5. They continue to install the Leachate collection system. I am observing both operations & I also am performing density test on the Anchor trench.

15:30 SEC continues placing protective cover sand and installing the leachate collection system.

17:25 SEC stopped work for the day I departed the site.

Signature

(63)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 32 Thurs

Page 1 of 2

Project: CELL- 5

Date: 6-1-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. mc

Temp.(EF): High 93 Low 72 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A-30	3	2
Excavator mini	Volvo	ERC58D	1	1
Excavator	Komatsu	RE390	1	1
Water Truck	Volvo	G5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H60i	1	1
Skid Steer	Deere	329F	1	1

Representing

Daily Notations:

06:50 I Arrived on site. SEC personnel are on site. There was 1/4" of rain last night. SEC personnel are pumping rain water from the sump.

07:15 SEC personnel started protective cover sand placement in Cell-5. They are also fusing 6" SDR-11 leachate collection pipe.

10:00 SEC personnel are placing protective cover sand in Cell-5. The have 2 trucks operating. One truck is down. They are using foam rubber stakes for the 2 ft. sand elevation. Trucks are kept on a minimum of 3 ft. of sand. They are installing the 8 oz geotextile, 6" SDR-11 Leachate

Signature: Tony C Bazzo

(64)

Daily Field Report

CEC

Project No.: 101.07-41 Report No.: 32 Thurs

Date: 6-1-17 Page: 2 of 2

collection pipe, #57 stone and sewing the geotextile. Survey pipes are installed every 50 ft. I am checking geocomposite in front of sand placement, checking the pipe location, #57 stone elevation and 4' width. I am checking sewing of the geotextile.

I am performing moisture density on the anchor trench.

13:00 SEC continues protective cover sand placement and leachate collection system installation. I am observing the work as it is performed. I continue moisture density test.

15:30 SEC continues placing protective cover sand and installing the leachate collection system. I am observing the work performed by SEC.

17:30 SEC stopped work for the day. I departed the site.

Signature

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 33 FRI

Page 1 of 2

Project: CELL- 5

Date: 6-2-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. MC

Temp.(EF): High 84 Low 74 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	1
Off Road Trucks	Volvo	A30	3	2
Excavator Mini	Volvo	ERC58D	1	1
Excavator	Komatsu	RE390	1	1
Water Truck	Volvo	G5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deere	329F	1	1

Visitors

Representing

Daily Notations:

06:40 I Arrived on site. SEC personnel are on site. The Cell-5 Sump is full of rain water.

07:00 SEC personnel are pumping water from the cell-5 Sump. They started placing protective cover sand in Cell-5. They Are placing sand at the North east side of Cell-5. Trucks are kept on a minimum of 3 ft. of sand.

08:00 SEC personnel are installing the leachate collection system At the center of Cell-5. I am observing the geotextile placement, marking pipe locations with the GPS rover, fusing pipe, Aligning pipe and perforations. Installing the #57 Stone and Sewing. They are installing survey

Signature: Tony C Bell

(66)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 33 FRI

Date: 6-2-17 Page: 2 of 2

markers every 50 ft.

11:00 SEC personnel continues placement of protective cover sand, and Leachate collection system. I am checking the geocomposite in front of sand placement. I am checking the leachate pipe and stone system as it is installed.

13:30 I had A lunch meeting with Shaver Grant. Discussed the sand placement and pipe welding.

16:30 SEC completed the leachate collection system to Less than 40 ft from Cell-5-Sump. They fused the flange on the clean out pipe at the South East slope. They continue to place protective cover sand.

16:35 Light Rain started. SEC personnel stopped work for the day.

16:45 I departed the site.

Note! I completed the density test in the anchor trench today. Only the pipe trench remains.

Signature

(67)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 34 SAT

Page 1 of 2

Project: CELL- 5

Date: 6-3-17

Project: No.: 101.07.41

Weather: A.M. mc P.M. mc

Temp.(EF): High 82 Low 71 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	D1 PX	2	1
OFF ROAD TRUCKS	VOLVO	A30	3	2
EXCAVATOR MINI	VOLVO	ERC58D	1	1
EXCAVATOR	DOOSAN	DX350	1	1
WATER TRUCK	VOLVO	G5000	1	0
COMPACTOR	HAMM	3410	1	0
LOADER	VOLVO	H06I	1	1
SKID STEER	DEERE	329F	1	1

Visitors

Representing

Daily Notations:

06:45 I Arrived on site at Vista Landfill. SEC personnel are on site. There was a little rain last night.

07:15 SEC personnel are pumping rain water from Cell-5 sump. They started placing protective cover sand in Cell 5. They are keeping trucks on a minimum of 3 ft. of sand, and are using foam rubber grade stakes to control the 2 ft. sand elevation. I am checking the geocomposite in front of sand placement.

08:30 SEC extended the Cell-1 clean out pipe near the Cell-5 clean out pipe by 8 ft. If it was not extended it will be buried in the slope.

Signature:

Daily Field Report

CEC

Project No.: 101-07-41

Report No.: 34 SAT

Date: 6-3-17

Page: 2 of 2

10:30 SEC started fusing the 6" SDR-11 Solid clean out pipe for the west slope. They continue to place and grade protective cover SAND in Cell-5.

13:00 SEC personnel continues placing protective cover SAND in Cell-5. They completed fusing the 6" SDR-11 solid clean out pipe for the west slope, but it was not installed.

14:30 I departed the site. SEC personnel has stopped work for the day. I am working on the As-built drawing and daily.

Signature

(69)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 35 MSN

Page 1 of 2

Project: CELL- 5

Date: 6-5-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. mc

Temp.(EF): High 84 Low 73 Rain 2.5"

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	1
OFF Road Trucks	Volvo	A-30	3	2
Excavator mini	Volvo	ERC58D	1	1
Excavator	DooSan	DX350	1	1
Water Truck	Volvo	C5004	1	0
Compactor	114mm	3410	1	0
Loader	Volvo	1706	1	1
Skid Steer	Deer	329F	1	1

Representing

Daily Notations:

06:40 I Arrived on site At Vista Landfill. There was rain yesterday and Last night. The West end of Cell-5 is full of rain water. There was 2.5" of rain yesterday & Last night.

06:45 SEC personnel are on site.

07:30 SEC started protective sand placement, North floor of Cell-5. They are also pumping rain water from Cell-5 Sump Area. I installed foam Rubber stakes on Vacuum pipe At the west floor of Cell-5.

10:30 SEC continues to place protective cover sand in Cell-5 At the North floor. They are keeping trucks on a minimum of 3 ft. of sand.

Signature: Johnny C. Bryant

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 35 MON

Date: 6-5-17 Page: 2 of 2

I installed foam rubber markers at the vacuum pipe locations at the North West floor. They are only 1 ft tall.

12:30 SEC continues placing and grading protective cover sand at the North West floor. They started fusing the 18 inch SDR-17 sump riser pipe.

There is a sprinkle of rain off and on.

15:00 SEC continues to place protective cover sand. They are starting on the North East slope. They built a ramp 3 ft. thick across the east side of COM-5 to operate trucks on.

17:25 SEC personnel stopped work for the day. I departed the site.

Signature

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 36 Tue

Page 1 of 2

Project: CELL- 5

Date: 6-6-17

Project: No.: 101.07.41

Weather: A.M. _____ P.M. _____

Temp.(EF): High 81 Low 72 Rain Trace

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	8

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	1
OFF Road trucks	Volvo	A30	3	3
EXCAVATOR mini	VOLVO	ERC58D	1	1
EXCAVATOR	DOOSAN	DX350	1	1
Water Truck	Volvo	65000	1	0
COMPACTOR	Hamm	3410	1	0
loader	Volvo	H061	1	1
Skid Steer	Deer	329F	1	1

Representing

Daily Notations:

0645 I Arrived on Site At Vista Landfill. SEC personnel are on site.

There was a small amount of rain last Night.

07:15 SEC personnel started protective cover sand placement on the North berm, east side. They built a 3 ft. thick road across Cell-5 from the south. They are keeping trucks on 3 ft. of sand.

10:00 SEC continues placing and grading protective cover sand on the North slope. They started to fuse more sections of the 18" sump riser pipe but had problems with the welder. They will get it repaired.

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 36 Tue

Date: 6-6-17 Page: 2 of 2

13:00 SEC continues to place and grade protective cover sand. They constructed another 3 ft. thick road across cell-5 at the center. They continue to place protective cover sand on the North Slope.
They have a 6" pump operating at this time. They are pumping water from cell-5 Sump, over the road South of Cell-5 to the large open Area.

15:00 SEC continues placing and grading protective cover Sand and pumping water from cell-5. A Light to moderate rain has started.

15:30 Rain is hard. SEC personnel stopped work for the day. I departed the site to have drawing made from my As-built of Liner in Cell-5.

16:55 I made drawings and stopped work for the day.

Signature Gregory C Bryant

(73)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 37 Wed

Page 1 of 2

Project: CELL-5

Date: 6-7-17

Project: No.: 101.07.41

Weather: A.M. mc P.M. mc

Temp.(EF): High 81 Low 73 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A30	3	3
EXCAVATOR MINI	VOLVO	ERC58D	1	1
EXCAVATOR	DOOSAN	DX350	1	1
WATER TRUCK	VOLVO	C-5002	1	0
COMPACTOR	HAMM	3410	1	0
LOADER	VOLVO	H061	1	1
SKID STEER	DEERE	329F	1	1

Visitors

Representing

Daily Notations:

06:45 I ARRIVED ON SITE AT VISTA LANDFILL. SEC PERSONNEL ARRIVING ON SITE. THERE WAS RAIN YESTERDAY AFTERNOON AND LAST NIGHT. SEC HAS A HOSE BUSTED ON THE 6" PUMP.

07:45 SEC STARTED PLACING PROTECTIVE COVER SAND IN CELL-5. THEY ARE BUILDING UP THE ROADS ACROSS THE CELL.

08:00 SEC HAS THE HOSE REPAIRED AND STARTED PUMPING RAIN WATER FROM CELL-5 SUMP AREA.

10:00 SEC PERSONNEL ARE PLACING PROTECTIVE COVER SAND ON THE NORTH SLOPE OF CELL-5. THEY CONTINUE TO PUMP RAIN WATER FROM THE SUMP.

12:00 RAIN STARTED. SEC PERSONNEL ARE STANDING BY.

Signature:

(74)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 37 Wed

Date: 6-7-17 Page: 2 of 2

13:30 SEC personnel stopped work because of the rain. They continue to pump rain water from Cell-5 Sump.

I Am checking the AS-built drawings for seaming.

15:30 I departed the Site.

Note! I worked on the seaming checks on the field drawings for 2 hours.

(10 HRS)

Signature Tony C Bush

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 38 Thurs

Page 1 of 2

Project: CELL- 5

Date: 6-8-17

Project: No.: 101.07.41

Weather: A.M. ML P.M. ML / Trace

Temp.(EF): High 82 Low 71 Rain Trace

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
Off Road Trucks	Volvo	A 30	3	3
Excavator Mini	Volvo	ERC58D	1	1
Excavator	Doosan	DX350	1	1
Water Truck	Volvo	G 5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deere	329F	1	1

Representing

Daily Notations:

06:45 I arrived on site at Vista Landfill. SEC personnel are on site. There was rain last night. The sump area is full of water.

07:15 SEC started pumping rain water from the cell-5 sump area.

07:30 SEC repaired the 3 ft thick sand road across cell-5 and started placing protective cover sand on the north slope.

08:00 SEC personnel are fusing the last section of 18" sump riser pipe section.

10:00 SEC personnel continues placing and grading protective

Signature: [signature]

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 38 Thurs

Date: 6-8-17 Page: 2 of 2

cover sand on the North Slope. They Are Also fusing the dual contain force main pipe into 120 ft. Sections. They continue to pump water from the sump.

13:00 I had a meeting with Sheree Grant, Discussed schedule for grouting sock pipes. There was a rain shower for ½ hour. SEC continues placing protective cover sand on the North slope.

15:00 SEC continues placing protective cover sand on the north slope of G11-5. They Are Also placing some sand At The North west floor Area. They continue fusing force main pipe.

17:25 SEC stopped work for the day. I departed the site.

Signature

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 34 FRI

Page 1 of 2

Project: CELL-5

Date: 6-9-17

Project No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 85 Low 69 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	61 PX	1	2
OFFROAD TRUCK	VOLVO	A30	3	3
EXCAVATOR MINI	VOLVO	ERC58D	1	1
EXCAVATOR	DOOSAN	DX350	1	1
WATER TRUCK	VOLVO	G5000	1	0
COMPACTOR	HAMM	3410	1	0
LOADER	VOLVO	L70G1	1	1
SKIDSTEER	BOBCAT	329F	1	1

Visitors

Representing

Daily Notations:

06:45 I Arrived on site at Vista Landfill. SEC personnel are on site. There was no rain last night but the sump is full of water draining out of the sand.

07:00 SEC pumping water from Cell-5.

07:30 SEC started protective cover sand placement at the North west floor Area. They are also hauling soil from the pond Area, west of Cell-5.

10:00 SEC continues placing and grading protective cover sand at the North West floor Area of Cell-5. They are also excavating and hauling soil from the pond west of Cell-5. Soil is hauled to the south stockpile.

Signature:

Daily Field Report

SEC

Project No.: 101.07.41 Report No.: 39 FRI

Date: 6-9-17 Page: 2 of 2

National Lining is on site to fill sand bags. SEC hauled sand for sand bags.

13:30 SEC continues placing and grading protective cover sand in Cell-5. They continue to remove soil from the pond west of Cell-5. National Lining personnel are filling sand bags.

16:30 SEC personnel are placing protective cover sand on the North Slope. They continue removing soil from the pond west of Cell-5. National Lining personnel continues filling sand bags.

17:25 SEC and National Lining personnel stopped work for the day. I departed the site.

Signature

(79)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 40 SAT

Page 1 of 2

Project: CELL- 5

Date: 6-10-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 88 Low 71 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	6
NLS	

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	61 PX	2	1
OFF ROAD TRUCKS	VOLVO	A30	3	2
EXCAVATOR MIAS	VOLVO	ERC58D	1	1
EXCAVATOR	DOOSAN	DX 350	1	1
WATER TRUCK	VOLVO	G5000	1	0
COMPACTOR	HAMM	3410	1	0
LOADER	VOLVO	H06	1	1
SKIDSTEER	DEERE	324F	1	1

Visitors

Representing

Daily Notations:

06:50 I Arrived on site At Vista Landfill. SEC personnel And National Lining personnel Are on site. SEC has 6 personnel on site today. One of thier trucks is down,

07:20 SEC personnel Are placing And grading protective cover sand on the North west slope corner. National Lining personnel Are filling sand bags.

10:30 SEC personnel continues placing And grading protective cover sand At the North west corner Slope. They have the water pumped down in the sump. SEC personnel Are keeping trucks on A minimum of 3 ft. of sand. They Are using foam rubber stakes to control the

Signature:

80

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 40 SAT

Date: 6-10-17 Page: 2 of 2

SAND elevation,

14:25 SEC personnel stopped work for the day. I departed the site.

Signature

(81)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 41 MON

Page 1 of 2

Project: CELL-5

Date: 6-12-17

Project No.: 101.07.41

Weather: A.M. MC P.M. MC RAIN

Temp.(EF): High 84 Low 71 Rain .8 inch

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
NLS	8

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	D1 PX	2	2
Off Road Trucks	Volvo	A30	3	3
Excavator Mini	Volvo	ERC58D	1	1
Excavator	Doosan	DX350	1	1
Water Truck	Volvo	B5??	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skidsteer	Deere	329F	1	1

Visitors

Representing

Daily Notations:

06:45 I Arrived on site at Vista Landfill. There was only a small amount of rain over the weekend.

06:50 SEC and American Lining personnel are on site.

07:15 SEC personnel are pumping rain water from Cell 5 Sump. National Lining personnel are filling sand bags.

07:25 SEC personnel are placing and grading protective cover sand at the North west corner slope. Trucks are kept on a minimum of 3 ft. of sand. Foam rubber stakes are used to control the 2 ft. sand elevation. SEC personnel are using 1 truck to haul soil from the pond west of Cell 5 to the South stockpile.

10:00 SEC continues placing and grading protective cover sand

Signature:

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 41 MON

Date: 6-12-17 Page: 2 of 2

At the north west corner slope. They continue to excavate and haul soil from the pond west of Cell-5, National Lining personnel filling sand bags.

12:30 SEC continues placing and grading protective cover sand hauling soil from the pond west of Cell-5. National Linning did not return after lunch.

14:30 SEC stopped placing protective cover sand. They are fine grading the surface of protective cover sand on the north slope, preparing the slope for the survey crew tomorrow. They are using all 3 trucks to haul soil from the pond, west of Cell-5.

16:10 Rain started. SEC continues work.

16:30 SEC stopped work except for the dozer fine grading the surface of protective cover sand. Rain continues.

16:50 I departed the site. Very hard rain.

Signature Tony C Bradley

(83)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 42 TVC

Page 1 of 2

Project: CELL-5

Date: 6-13-17

Project: No.: 101.07.41

Weather: A.M. MC P.M. MC / RAIN

Temp.(EF): High 85 Low 72 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A30	3	3
Excavator MINI	Volvo	ERC58D	1	1
Excavator	Doosan	DX350	1	1
Water Truck	Volvo	G5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skiel Sker	Deere	329F	1	1

Visitors

Representing

Daily Notations:

06:40 I Arrived on site At Vista LANDfill. The cell-5 Sump is full of rain water.

06:45 SEC personnel Are on Site And started pumping rain water from cell-5 sump.

07:20 SEC started hauling, placing and grading protective cover sand on the west Slope of cell 5. Trucks Are kept on 3 ft. minimum of sand. They are also using 1 truck to haul soil from the pond west of Cell-5 to the Stock pile.

10:00 The surveyor is on Site At As-built protective cover sand on the North slope. SEC continues placing and grading protective cover sand on the west slope. They continue to haul soil

Signature: Jay C Byrd

(54)

Daily Field Report

SEC

Project No.: 160707.41 Report No.: 42 TUE

Date: 6-13-17 Page: 2 of 2

from the pond west of Cell-5 to the stockpile.

13:00 SEC personnel continues to place protective cover sand on the west slope. They continue to haul soil from the pond west of cell-5. The surveyor continues as-built of the north slope.

14:10 Rain started. SEC continues work.

14:30 SEC stopped work except for the dozer grading protective cover sand on the west slope and pumping water from cell-5.

14:50 The surveyor as-built the leachate collection pipe. The only work SEC personnel are performing is pumping water. Rain is hard.

I discussed drainage around cell-5 with Sherce Grant. May add cover material over protective cover sand at the center of the east floor and east slope.

15:45 I departed the site.

Signature Gary C Burgess

(85)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 43 Wed

Page 1 of 2

Project: CELL-5

Date: 6-14-17

Project: No.: 101.07.41

Weather: A.M. MC P.M. MC

Temp.(EF): High 82 Low 72 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A30	3	3
Excavator mini	Volvo	ERC 58D	1	1
Excavator	Doosan	DX350	1	1
Water Truck	Volvo	G5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deere	329F	1	1

Visitors

Representing

Daily Notations:

06:45 I Arrived on site at Vista Landfill. SEC personnel arriving on site. Cell-5 sump area is full of water.

06:55 SEC started pumping rain water from Cell-5 sump area.

07:15 SEC personnel are using all 3 off road trucks to haul soil from the pond west of Cell-5. They will not place any protective cover sand until they get the water pumped out of Cell-5.

10:00 SEC continues to fine grade the floor of Cell-5. They continue to pump rain water from Cell-5 sump area. They are hauling soil from the pond west of Cell-5. Soil is hauled to the south stockpile.

Signature: Tony C Bradford

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 43 Wed

Date: 6-14-17 Page: 2 of 2

13:00 I had a meeting with Sheree Grant. We discussed placing the sump riser pipe and stone. Discussed the Mid State pump personnel will grout the vacuum pipes tomorrow.
SEC continues to pump rain water from Cell-5 sump area, and fine grade the surface of the floor. They continue to haul soil from the pond west of Cell-5 to the stock-pile area.

14:00 SEC excavated a trench at the north west side of Cell-5 anchor trench to divert rain water away from Cell-5.

15:00 SEC continues to pump water from Cell-5 sump area, fine grade the floor of Cell-5 and haul soil from the pond west of Cell-5.

17:30 SEC stopped work for the day. I departed the site.

Signature Tony C Bartlett

(87)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 44 Thurs

Page 1 of 3

Project: CELL-5

Date: 6-15-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC/RAIN

Temp.(EF): High 86 Low 72 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	8
NLS	8
Mid State	7

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFFRoad Trucks	VOLVO	A-30	3	3
Excavator mini	VOLVO	ERC58D	1	1
Excavator	DOOSAN	DX350	1	1
Water Truck	VOLVO	G5000	1	1
Compactor	Hamm	3410	1	0
Loader	VOLVO	HL61	1	1
Skid Steer	Deer	329F	1	1

Visitors

Representing

Daily Notations:

06:40 I arrived on site. SEC personnel are arriving on site.

07:00 SEC personnel started pumping rain water from Cell 5 sump. Most of the water was pumped down. They had one person start the pump at 04:00 this morning.

07:30 SEC started hauling soil from the pond west of Cell-5 to the south stockpile and they are fine grading the floor of Cell-5.

National Lining is on site and started placing the rain cover at the east side of the North Slope.

10:00 Mid State is on site and pumping grout in vacuum pipes

Signature: Jeffrey C Bradley

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 44 Thurs

Date: 6-15-17 Page: 2 of 3

inside of Cell-5.

SEC continues fine grading the floor of Cell-5 and they are hauling soil from the pond west of Cell-5 to the south stockpile.

Note: SEC used a grinder to round off all sharp edges on the sump plate welded to the sump rise pipe, perforated section.

National Lining installing rain cover on the north slope and mid State personnel are pumping grout in vacuum pipes.

13:00 I had a meeting with Sheree Grant. Discussed the vacuum pipe grout, Repairs to the Liner when all grout is complete. There are 8 repair location in Cell-5.

15:00 SEC continues to haul soil from the pond west of Cell-5. They continue to fine grade the floor of Cell-5 protective cover sand. They installed the sump riser pipe and started # 4 Stone placement. They fused the last section of leachate collection pipe (perforated) to the 11° turn at the back of the sump.

15:30 Rain started, SEC personnel continues to haul soil from the pond west of Cell-5. National Lining

Signature Gary L Burgess

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 44 Thurs

Date: 6-15-17 Page: 3 of 3

personnel stopped work. Mid state completed pumping grout through vacuum pipes under all-S.

16:30 SEC stopped work for the day. They covered the stone in the sump. They did not set the pump up. Very hard rain at this time. I departed the site,

Note! I worked 1 hour of logs, making copies of forms,

Signature Greg L. Bell

90

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 45 FRI

Page 1 of 3

Project: CELL- 5

Date: 6-16-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC / RAIN

Temp.(EF): High 86 Low 71 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	8
NL	8

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	Komatsu	61 PX	2	2
OFF Road Truck	Volvo	A30	3	3
Excavator mini	Volvo	ERC58D	1	1
Excavator	DOOSAN	DX350	1	1
Water Truck	Volvo	G5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deere	329E	1	1

Visitors

Representing

Daily Notations:

06:40 I arrived on site at Vista Landfill. SEC personnel are Arriving on site. The Cell-5 Sump is full of rain water.

07:15 SEC started pumping water from Cell-5. They Are fine grading the floor of Cell-5 AND they Are removing survey pipe from the leachate stone. Geotextile patches Are placed over the small holes AND sealed. They are hauling soil from the pond west of Cell-5 to the South stock pile. National Lining personnel are installing rain cover on the North Slope.

10:00 SEC continues pumping rain water from Cell-5 sump Area, fine grading the floor protective cover in Cell-5 AND

Signature:

Daily Field Report

SEC

Project No.: 101.27.41 Report No.: 45 FRI

Date: 6-16-17 Page: 3 of 3

There was a light sprinkle of rain off and on in the afternoon.

18:00 SEC continues to pump rain water from cell 5 sump. They are sewing geotextile around stove in the sump and completing sewing at the #57 Leachate collection system.

18:40 SEC completed sewing geotextile and departed the site. I departed the site.

Signature Tony C Burkett

Daily Field Report

CEC

Project No.: 191.07.41 Report No.: 45 FRI

Date: 6-16-17 Page: 2 of 3

they continue to haul soil from the pond west of Cell-5. National Lining continues work on rain cover on the North slope.

12:30 SEC has the water pumped down at Cell-5 sump. They fused the 6" solid clean out pipe to the 6" perforated Leachate collection pipe at the toe of slope in the sump. They completed the #57 Stone to the sump.

SEC continues to fine grade protective cover sand on the floor of Cell-5. They continue to haul soil from the Pond west of Cell-5.

National Lining continues work on the Rain cover, North slope.

13:45 Hard rain started. They continue to fine grade the floor and haul soil from the west pond. National Lining personnel standing by.

14:05 Rain stopped. SEC personnel pumping rain water from Cell-5 sump. National Lining personnel departed the site for the day.

16:00 SEC continues fine grading protective cover soil on the floor of Cell-5. They are placing #4 stone in Cell-5 Sump. They continue to pump water from the sump during placement of the sump stone. Rain water continues to drain out of the protective cover sand.

Signature Tony C Bush

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 46 SAT

Page 1 of 2

Project: CELL-5

Date: 6-17-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 88 Low 71 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A30	3	3
Excavator Mini	Volvo	ERC58D	1	1
Excavator	DOOSAN	DX350	1	1
Water Truck	Volvo	C-5000	1	0
COMPACTOR	HAMM	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deer	329F	1	1

Representing

Daily Notations:

06:50 I Arrived ON site At Vista Landfill, SEC personnel Are ON site. The sump AreA is full of rAIN wAter.

07:15 SEC started pumping water from the sump. They Are AlSo removing the tree iN front of the site office, North west side of Cell-5.

08:15 SEC started excAvating the drAiNAge ditch At the North side of Cell-5. They continue to pump water from the sump.

10:00 SEC continues to haul soil from the pond west of Cell-5 AND they started excAvating the drAiNAge ditch At the North west side of Cell-5. All soil excAvated is hAuled to the south stockpile. They continue to pump

Signature:

94

Daily Field Report

CEC

Project No.: 101.07-41 Report No.: 46 SAT

Date: 6-17-17 Page: 2 of 2

rain water from the Cell-5 Sump Area. They Are also grading the Area South of Cell-5 to divert rain water Away from Cell-5.

12:00 Had a meeting with Steve Grant, Site engineer And discussed repairs At Vacuum pipes And As-built of protective cover on the floor of Cell-5.

13:05 S&L will only haul fill from the west pond. I departed the site.

Signature

(95)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 47 MON

Page 1 of 2

Project: CELL-5

Date: 6-19-17

Project No.: 101.07.41

Weather: A.M. PC P.M. RAIN

Temp.(EF): High 85 Low 72 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61PX	2	2
OFF Road Trucks	Volvo	A-30	3	3
Excavator Mini	Volvo	ERC58D	1	1
Excavator	Doosan	DX350	1	1
Water Truck	Volvo	G5000	1	D
Compactor	Hamm	3410	1	D
Loader	Volvo	H061	1	1
Skid steer	Deer	329F	1	1

Visitors

Representing

Daily Notations:

06:50 I departed Palm City for Vista Landfill.

08:15 I Arrived on Site at Vista Landfill, SEC personnel Are on Site. They are hauling soil from the pond west of Cell-5 and pumping rain water from cell-5 sump.

09:30 The excavator is down, They Are fine grading protective cover sand at the North West corner and on the floor of Cell-5.

12:00 I had a meating with Sheree Grant and discussed completing repairs to the liner at vacuum pipe locations in cell-5, She will let me know when

Signature:

Daily Field Report

CEC

Project No.: 161.07.41 Report No.: 47 MAN

Date: 6-19-17 Page: 2 of 2

ESI will have personnel on site to make repairs.

13:00 SEC has the excavator operating again and they are hauling protective cover sand for a road to the south west slope.

13:45 Rain started. SEC continues placing protective cover sand on the west slope. They also aligned the 18" sump riser pipe and the 6" cleanout pipe up the west pipe trench.

15:10 SEC will only grade sand the remainder of the day and pump rain water. Rain continues. I departed the site for Palm City.

17:45 I Arrived in Palm City.

Signature

97

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 48 Tue

Page 1 of 3

Project: CELL- 5

Date: 6-20-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC/RAIN

Temp.(EF): High 87 Low 73 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9
ESI	2

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
Off Road Trucks	Volvo	A 30	3	3
Excavator Mini	Volvo	ERC58D	1	
Excavator	Doosan	DX350	1	1
Water Truck	Volvo	G-5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deer	329F	1	1

Representing

Daily Notations:

05:50 I departed Palm City for Vista Landfill.

08:30 I arrived on site at Vista Landfill. SEC personnel are on site. They are placing and grading protective cover sand on the west slope of Cell-5.

10:00 The surveyor is on site to as-built the floor of Cell-5's protective cover.

10:15 ESI has 2 personnel on site to make repairs at vacuum pipe locations.

11:30 SEC used the mini excavator to clean around the vacuum pipes. ESI personnel are making repairs to the liner at vacuum pipe locations.

Signature: [signature]

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 48 Tue

Date: 6-20-17 Page: 2 of 3

14:00 SEC personnel are placing and grading protective cover sand on the west slope of Cell-5. The surveyor continues to As-built the protective cover on the floor of Cell-5. ESI personnel continues making repairs at vacuum pipe locations.

16:30 There was a rain shower that only lasted 20 minutes, ESI stopped work during the rain. SEC personnel continued to place and grade protective cover sand on the west slope.

17:30 SEC personnel stopped work for the day, except for the dozer grading protective cover sand on the west slope. They have enough sand in Cell-5 to complete the west slope.
There was another rain shower that only lasted 10 minutes. ESI had to stop work.

18:30 ESI completed all 8 repairs at vacuum pipe locations. They performed Trial weld test, welded patches at vacuum pipe locations, SEC personnel cut the vacuum pipes an average of 3 ft. below the Liner and compacted soil in the hole. After ESI completed the welding all patches were vacuum tested, geocomposite placed over the repair, plastic ties used to secure geocomposite and

Signature

CEC

Daily Field Report

Project No.: 101.07.44 Report No.: 48 Tue

Date: 6-20-17 Page: 3 of 3

geotextile heat sealed over the geocomposite edges.

18:55 ESI cleaned up the work area and departed the site. I also departed the site.

21:20 I Arrived back in Palm City.

Signature

100

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 49 Wed

Page 1 of 2

Project: CELL-5

Date: 6-21-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 75 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	9

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF Road Trucks	Volvo	A-30	3	3
EXCAVATOR mini	Volvo	ERC58D	1	1
EXCAVATOR	Doosan	DX350	1	1
Water Truck	Volvo	G5003	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deer	329F	1	1

Visitors

Representing

Daily Notations:

06:00 I departed Palm City for Vista Landfill.

08:25 I Arrived on site at Vista Landfill. SEC personnel are on site hauling soil from the pond west of Cell-5. They are also grading protective cover sand on the south west floor where roads were located and the west slope. They are covering vacuum pipe repair locations.

10:00 SEC has all the repair locations covered and are fine grading the floor of Cell-5. The Surveyor will not be on site until tomorrow. They are excavating the drainage ditch at the west side of Cell-5.

Signature: Tony C Bell

(101)

Daily Field Report

CEC

Project No.: 10107-41 Report No.: 49 wed

Date: 6-21-17 Page: 2 of 2

12:00 SEC will not perform any work in Grid 5, except for fine grading. I departed the site.

14:30 I Arrived in Palm City. I worked ½ hour making copies of the repair log for the surveyor.

15:00 I Stopped work.

Signature

(102)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 50 Thurs

Page 1 of 2

Project: CELL-5

Date: 6-22-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 77 Rain

Contractor(s) SEC

Contractor Super(s) John Helms

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	8

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	1
Off Road Trucks	Volvo	A30	3	3
Excavator Mini	Volvo	ERC58D	1	1
Excavator	Doosan	DX350	1	1
Water Truck	Volvo	G5000	1	0
Compactor	Hamm	3410	1	0
Loader	Volvo	H061	1	1
Skid Steer	Deer	329F	1	1

Visitors

Representing

Daily Notations:

06:00 I departed Palm City, for Vista Landfill.

08:35 I Arrived on site at Vista Landfill. SEC personnel are on site excavating the drainage ditch, west side of Cell-5. They have completed the fine grading of protective cover sand in Cell-5. The surveyor will as-built the protective cover sand today.

09:30 I Left A copy of the repair logs for the surveyor. I departed the site.

12:00 Arrived back in Palm City, I Am making out the summary for moisture density test performed during the construction of Cell-5.

Signature: Joey C Bell

103

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 50 Thur

Date: 6-22-17 Page: 2 of 2

15:00 I worked 3 hours on the summary AND checking logs, Numbering pages ect.

Signature

104

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 51 MON

Page 1 of 2

Project: CELL- 5

Date: 6-26-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 88 Low 75 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	7
NLS	8

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	2
OFF ROAD TRUCKS	Volvo	A-30	3	2
EXCAVATOR MINI	Volvo	ERC 55D		1
EXCAVATOR	DOOSAN	DX 350	1	0
WATER TRUCK	Volvo	C-5000	1	0
COMPACTOR	Hamm	3410	1	0
Loader Skid Steer	Volvo Deer	HOG 1 329 E	1 1	0
EXCAVATOR	Deere		1	1

Visitors

Representing

Daily Notations:

04:55 I departed Palm City.

07:50 I Arrived on site at Vista Landfill. SEC personnel are on site. They are grading roads around the soil stockpiles.

National Lining personnel are on site installing the rain cover.

10:00 SEC has the force main fused into 1 pice, 720 Ft. Long. They are excavating the west side of the manhole to locate the force main tie-in.

SEC replaced the Doosan excavator with A Deere excavator and started hauling soil from the pond west of

Signature: Tony C Brown

(105)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 51 MoN

Date: 6-26-17 Page: 2 of 2

Cell-5 to the South Stockpile.

National Lining continues work on the rain cover.

13:00 SEC located the Force main tie in, 30 ft. west of the manhole. They are excavating the force main trench at the North and west side of Cell-5.

National Lining continues work on the rain Cover.

15:55 SEC personnel will only haul soil from the pond west of Cell-5. National Lining continues work on the rain cover. I departed the site.

Signature

106

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 52 TUE

Page 1 of 2

Project: CELL-5

Date: 6-27-17

Project No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 78 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	7
National Lining	8

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	61 PX	2	2
OFF ROAD TRUCKS	VOLVO	A30	2	0
EXCAVATOR - MINI	VOLVO	ERC58D	1	1
EXCAVATOR	Deer	380	1	0
WATER TRUCK	VOLVO	6-5000	1	1
LOADER	VOLVO	H061	1	0
SKID STEER	Deer	328F	1	1

Visitors

Representing

Daily Notations:

06:00 I departed Palm City.

07:35 I Arrived on site At Vista Landfill. SEC and National Lining personnel are on site. SEC personnel are excavating the force main trench and hauling soil from the pond west of Cell-5.
National Lining personnel are installing rain covers on the floor area of Cell-5.

09:30 I met with the electrician. He can install the 2" conduit or SEC can install the conduit if they do not want to be waiting on the electrician to install it. The excavator is down.

Signature:

107

CEC

Daily Field Report

Project No.: 101.07.41

Report No.: 52 Tue

Date: 6-27-17

Page: 2 of 2

National Living Continues rain cover installation.
11:35 I departed the site for the day.

Signature

108

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 53 Thurs

Page 1 of 2

Project: CELL- 5

Date: 6-29-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 75 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	7

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	1
Off Road Trucks	Volvo	A30	2	0
Excavator mini	Volvo	ERC58D	1	1
Excavator	Deere	380	1	0
Water Truck	Volvo	6-5000	1	0
Skid Steer	Deere	329F	1	1

Representing

Daily Notations:

05:00 I departed Palm City.

07:25 I Arrived on Site At Vista Landfill. SEC personnel Are on site And placed the force main in the trench.

10:00 Sheree Grant gave John Holems A drawing for the pipe that will be inside the concrete structure. The distance between the Riser pipe And the force main throug the conduit must be 8 ft.

The Deere 380 excavator is down Again.

12:30 I had A meeting with sheree Grant And discussed the schedule to complete work At Cell-5.

14:30 SEC personnel Are fusing the 90°'s At the Force

Signature: [signature]

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 53 Thurs

Date: 6-29-17 Page: 2 of 2

main that will turn into the concrete structure. They are also grading the pond west of cell-5. 16:05 I departed the site for the day.

Signature

110

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 54 FRI

Page 1 of 2

Project: CELL- 5

Date: 6-30-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 91 Low 74 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	7

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX	2	1
Off Road Trucks	Volvo	A30	2	0
Excavator mini	Volvo	ERC58D	1	1
Excavator	Deere	380	1	0
Water Truck	Volvo	G5000	1	0
Skid Steer	Deere	329F	1	1

Representing

Daily Notations:

05:55 I departed Palm City.

09:00 I arrived on site at Vista Landfill. SEC personnel are on site. They are working on pipe fittings at the concrete structure.

11:00 SEC fused the flange on the 6" clean out pipe and they are measuring the location of the pipes for the construction of the concrete structure.

12:30 I had a meeting with Sheree Grant and discussed pipe locations inside the concrete structure before the concrete is placed.

SEC still has problems with the excavator and

Signature: [signature]

(111)

CEC

Daily Field Report

Project No.: 161.07.17

Report No.: 54 FRI

Date: 6-30-17

Page: 2 of 2

did Not load ANy soil today. The dozer graded the slopes South of Cell-5 for drainage.

14:05 I departed the site.

Signature

(112)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 55 Wed

Page 1 of 1

Project: CELL-5

Date: 7-5-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 92 Low 73 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	5

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61-PX / 39-PX	2	1
OFF Road Trucks	Volvo	A-30	2	0
Excavator Mini	Volvo	ERC 58 D	1	1
Excavator	Deere	350	1	0
Water Truck	Volvo	CE 5000	1	0
Skid Steer	Deere	329 F		1

Visitors

Representing

Daily Notations:

06:00 I departed Palm City.

08:30 I Arrived on site At Vista Landfill. SEC personnel A/r on on site working on water Lines and electric Lines.

10:00 They sent the wrong parts for the Hydro test on the force main. They can not test until tomorrow.

11:00 I departed the Site.

Signature: Jay C Byrd

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 56 Wed

Page 1 of 2

Project: CELL- 5

Date: 7-6-17

Project: No.: 101.07.41

Weather: A.M. Clear P.M. PC

Temp.(EF): High 94 Low 76 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	6

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61 PX / 39 PX	2	1
OFF Road Trucks	Volvo	A-30	2	0
Excavator mini	Volvo	ERC58D	1	1
Excavator	Deere	380	1	0
Water Truck	Volvo	G5000	1	0
Skid Steer	Deere	329F	1	1

Representing

Daily Notations:

05:30 I departed Palm City.

07:50 I Arrived on site At Vista Landfill. SEC personnel Are on site fusing end flanges on the force main for Hydro testing.

09:30 SEC completed fusing the pipes And Are moving the pipe into place to insure the 'T' section to the concrete structure is in the correct place.

11:30 SEC broke one of the 90° fittings that go to the concrete structure. It was the 3x6 dual contain 90°.

I had A meeting with Sheree Grant And informed her.

Signature: [signature]

(114)

Daily Field Report

CEC

Project No.: 101.57.41 Report No.: 56 Wed

Date: 7-6-17 Page: 2 of 2

SEC will have another 90° shipped over night and will start the hydro test tomorrow.

13:00 I departed the site.

Signature

(115)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 57 FRI

Page 1 of 2

Project: CELL-5

Date: 7-7-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 95 Low 75 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	5

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	KOMATSU	D-PX / 39.PX	2	1
OFF ROAD TRUCK	VOLVO	A-30	2	0
EXCAVATOR MINI	VOLVO	ERC58D	1	1
EXCAVATOR	Deere	380	1	1
WATER TRUCK	VOLVO	G5000	1	0
SKID STEER	Deere	329F	1	0

Visitors

Representing

Daily Notations:

05:00 I departed Palm City.

07:35 I arrived on site at Vista Landfill. SEC personnel are on site installing electrical conduit in the force main trench.

09:30 SEC continues work on the conduit for Cell-5 sump. The conduit will start at a location the electricians located 14 ft. South of the tree at the south west corner of the office and will end at the concrete structure.

12:30 I had a meeting with Shevee Grant and discuss the pipe testing and why it is taking so long.

Signature:

(11)

CEC

Daily Field Report

Project No.: 191.07.41

Report No.: 57 FRI

Date: 7-7-17

Page: 2 of 2

14:35 The pipe fitting arrived and was the wrong one. John will go to ISCO tonight and get the correct one.

15:05 I informed Shawn Grant and departed the site.

Signature

(117)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 58 SAT

Page 1 of

Project: CELL- 5

Date: 7-8-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 91 Low 76 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	5

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	D1-PX / D3-PX	2	0
OFF ROAD TRUCKS	VOLVO	A30	2	0
EXCAVATOR MINI	VOLVO	ERC58D	1	1
EXCAVATOR	Deere	380	1	0
WATER TRUCK	VOLVO	G5003	1	1
SKID STEER	Deere	329F	1	1

Visitors

Representing

Daily Notations:

05:30 I departed Palm City.

08:00 I Arrived on Site At VISTA Landfill. SEC personnel Are on Site. They Are fusing the New 90° fitting in place.

10:30 SEC personnel Are pumping water into the force main pipe. They Are having problems getting pressure. They Are using the water truck AND water from the Site water hose to fill the pipe.

12:30 I had A meeting with Sheree Grand AND discussed the pressure testing, CAN NOT build enough pressure.

13:30 found A Leak in the Force main pipe At the connect

Signature:

(118)

CEC

Daily Field Report

Project No.: 101.07.44

Report No.: 58 SAT

Date: 7-8-17

Page: 2 of 2

structure. One of the welds has a leak in the 3" pipe.

14:00 I informed Shuree Grant. SEC said that they will not make repairs until Monday.

I departed the site.

Signature

(119)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 59 Mon

Page 1 of 2

Project: CELL-5

Date: 7-10-17

Project No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 92 Low 75 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	5

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	KOMATSU	D1-PX / D9-PX	2	0
OFF ROAD TRUCKS	VOLVO	A30	2	0
EXCAVATOR MINI	VOLVO	ERC 58D	1	1
EXCAVATOR	Deere	350	1	0
WATER TRUCK	VOLVO	G5000	1	1
SKID STEER	Deere	329F	1	1

Representing

Daily Notations:

05:55 I departed Palm City.

08:35 I Arrived on site At Vista Landfill. SEC personnel Are on site.

SEC cut All of the welds for the force main And Are rewelding them.

10:30 SEC continues to fuse sections of force main pipe. Randy Bradshaw with SEC is on site to monitor the welding.

12:00 I discussed the force main And rewelding with Sheree Grant.

15:00 SEC completed fusing the force main pipe. They will

Signature: Gary C Burkett

(120)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 59 Mon

Date: 7-10-17 Page: 2 of 2

only Add 15 lbs of pressure to the pipe and let it set over-night. They will test the pipe tomorrow.

15:00 I departed the site.

Signature

121

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 60 Tue

Page 1 of 2

Project: CELL- 5

Date: 7-11-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 97 Low 73 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	1

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
DOZERS	Komatsu	D1-PX / 39-PX	2	0
OFF Road trucks	Volvo	A30	2	0
EXCAVATOR MINI	Volvo	ERL 58D	1	1
EXCAVATOR	Deere	380	1	1
WATER TRUCK	Volvo	C-3003	1	1
SKID STEER	Deere	329F	1	1

Visitors

Representing

Daily Notations:

04:40 I departed Palm City for Vista.

07:05 I Arrived on site At Vista Landfill. The Force main pipe held 14 lbs of pressure overnight. They will Pressure test the pipe.

They are fusing the cap with the Gauge on the end of the pipe.

09:30 They Are Adding pressure to the pipe. The pressure has Not built up.

11:30 I had a meeting with Sheree Grant and discussed the pipe testing. There still may be a problem.

13:30 SEC continues to continue to pump water into the

Signature: Tony C Bell

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 60 Tue

Date: 7-11-17 Page: 2 of 2

the force main pipe.

15:00 Located A leak At the cap (3 inch) At the concrete structure.

16:30 SEC will not retest the force main pipe until tomorrow. I departed the site.

Signature [signature]

123

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 61 Wed

Page 1 of 2

Project: CELL-5

Date: 7-12-17

Project No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 75 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	7

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	Komatsu	61-PX / 39-PX	2	1
OFF Road Trucks	Volvo	A30	2	0
Excavator mini	Volvo	ERC55D	1	1
Excavator	Deere	330	1	0
Water Truck	Volvo	G-5000	1	1
Skid Steer	Deere	329F	1	1

Visitors

Representing

Daily Notations:

05:00 I departed Palm City

07:20 I Arrived ON Site AT Vista LANDfill. SEC personnel Are ON Site.

09:50 SEC pressurized the 6" SDR-11 Force main from the North tie in to the South end with 130 PSI water test and it Passed for 1 hour. There were 2 gauges on the test, one on the pipe And one on the Hydro pump. Both Gauges READ the Same.

11:00 I had A meeting with Steve GRANT And informed her. The Force main pressure test passed.

13:30 SEC working on the casing pipe test.

Signature: Jay L Brug

124

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 61 Wed

Date: 7-12-17 Page: 2 of 2

15:15 SEC completed the Air pressure test of the cassius pipe for the force main. I held 10 psi for 1 hour.

17:30 SEC fused the force main connection to the existing force main At the North side, 40' from the manhole.

I departed the site.

Signature

(125)

Daily Field Report

SEC

Owner: VISTA LANDFILL

Report No.: 62 Thurs

Page 1 of 2

Project: CELL- 5

Date: 7-13-17

Project: No.: 101.07.41

Weather: A.M. PC P.M. PC

Temp.(EF): High 90 Low 73 Rain

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People
SEC	7

Visitors

Major Constr. Equip. Description		Size/Capacity	No.	No. in Use
Dozers	KOMATSU	61-PX / 39-PX	2	1
OFF ROAD TRUCK	VOLVO	A-30	2	0
EXCAVATOR MINI	VOLVO	ERC 58D	1	1
EXCAVATOR	Deere	350	1	1
WATER TRUCK	VOLVO	G 5000	1	1
SKID STEER	Deere	329 F	1	1

Representing

Daily Notations:

06:10 I departed Palm City.

09:00 I Arrived on site At Vista landfill. SEC personnel Are on Site.

10:00 SEC used the PAN compactor to compact soil Around the force main pipe and the roller After the soil was high enough. They used the water Truck to Add moisture to the soil.

Note! Metal caution tape was placed 1 foot Above the force main pipe.

11:30 I performed Moisture density test After compaction was completed on each lift. I had A meeting with

Signature:

(126)

Daily Field Report

CEC

Project No.: 101.07.41 Report No.: 62 Thurs

Date: 7-13-14 Page: 2 of 2

Sheree Grant and informed her that CEC has completed thier CQA At visit for Cell-5.

14:00 I cleaned the Pod, loaded All the equipment and took it to Damon At Orange County, He has the scales And generator.

I departed the site.

Signature

(127)

Daily Field Report

CEC

Owner: VISTA LANDFILL

Report No.: 63 FRI

Page 1 of 1

Project: CELL- 5

Date: 12-14-17

Project: No.: 101.07.41

Weather: A.M. _____ P.M. _____

Temp.(EF): High _____ Low _____ Rain _____

Contractor(s) SEC

Contractor Super(s) John Holmes

Number and Function of Contractors' Personnel, Hours Worked (Identify Subcontractors Separately)

Contractor	No. of People

Visitors

Major Constr. Equip. Description	Size/Capacity	No.	No. in Use

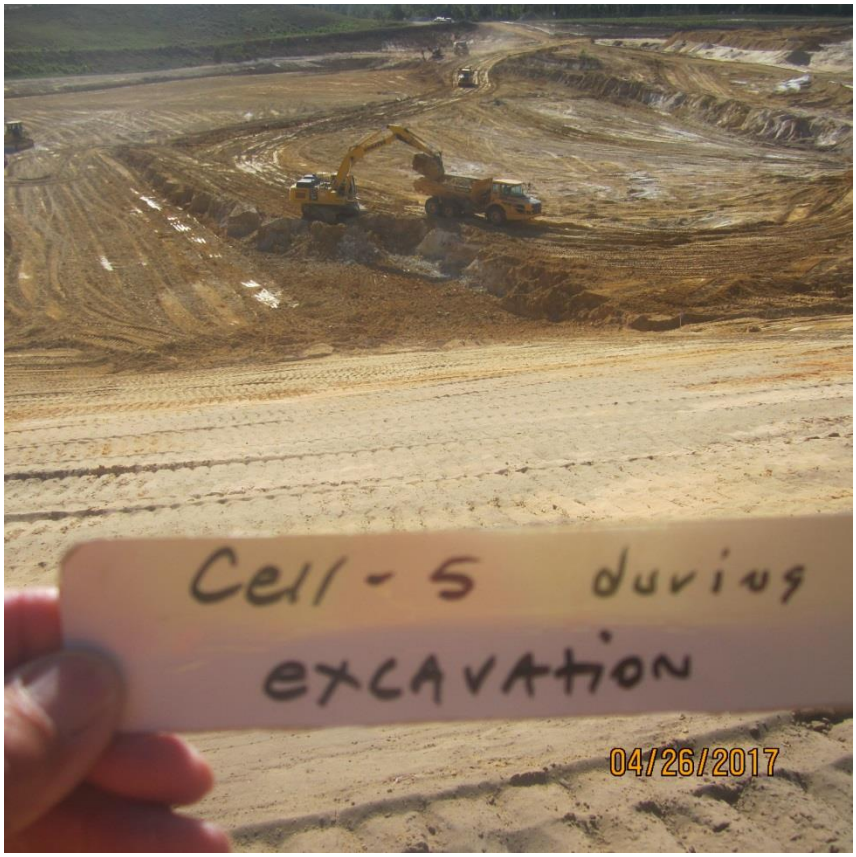
Representing

Daily Notations:

I worked on the logs, checking logs and dailers, Numbering pages, to insure they are complete.
I took the logs and had them copied and shipped the logs to Peter Walls in Greenville.
Total Hours today 4.0

Signature: [signature]

E. PHOTOGRAPHIC RECORD


Cell - 5 during
EXCAVATION
04/26/2017

Seeping water
from White SAND
04/26/2017

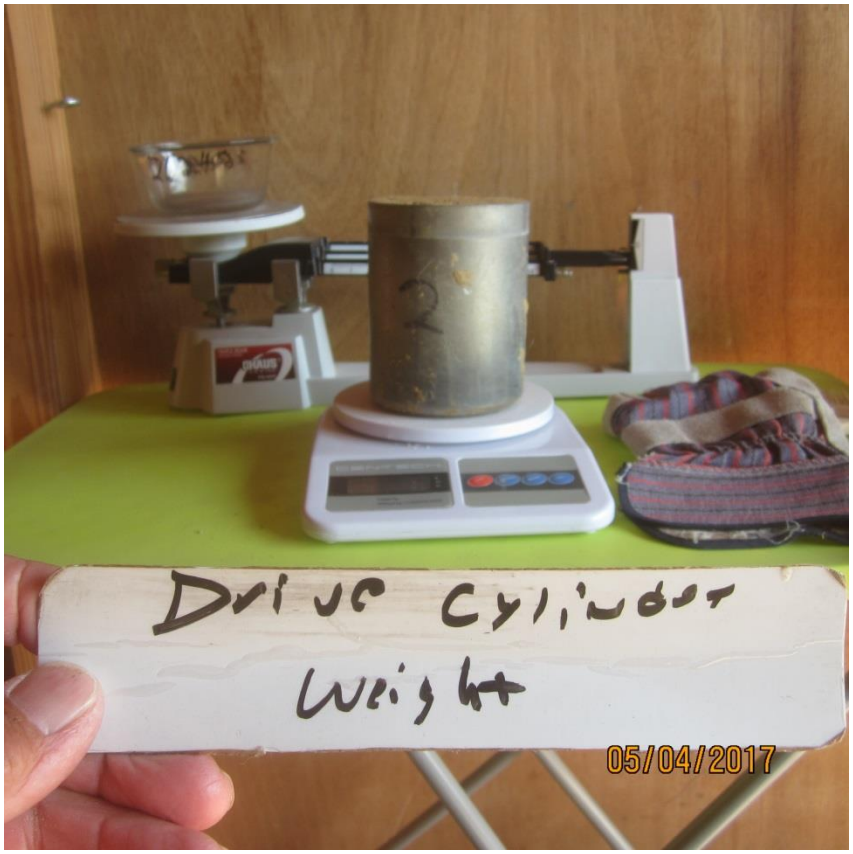
GCL Stockpile
Covered
04/26/2017

EXCAVATING SOIL
FROM CELL 5
05/01/2017

SEC Compaction
Soil in Cell-5
05/01/2017

KOMATSU
VOLVO
South East Corner
Excavation
05/03/2017

South Intercell
Berm
05/03/2017


Drive Cylinder
Weight
05/04/2017

Moisture
Test
05/04/2017
TRIPLE BEAM
OHAUS
CENTECH

South Intercell
Berm
05/03/2017

HAMM
Compacting
Sub base
05/04/2017

Pipe Trench
west Slope
05/05/2017

Cleaning Line
Tie in East Side
05/09/2017

KOMATSU
South East Corner
Excavation
05/09/2017

Cell-5
Sump and Trench
05/10/2017

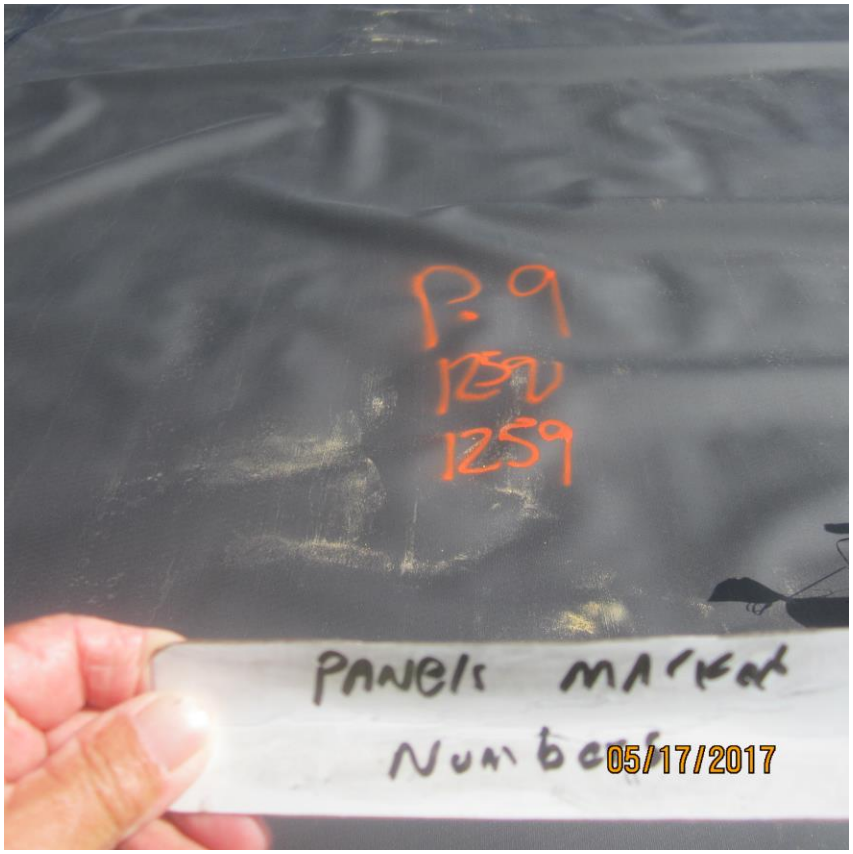
Proof Rolling
Cell-5 Floor
05/11/2017

Geocomposite
UNLOADED BY SEC
05/12/2017

ANCHOR TRENCH
EXCAVATION
05/16/2017

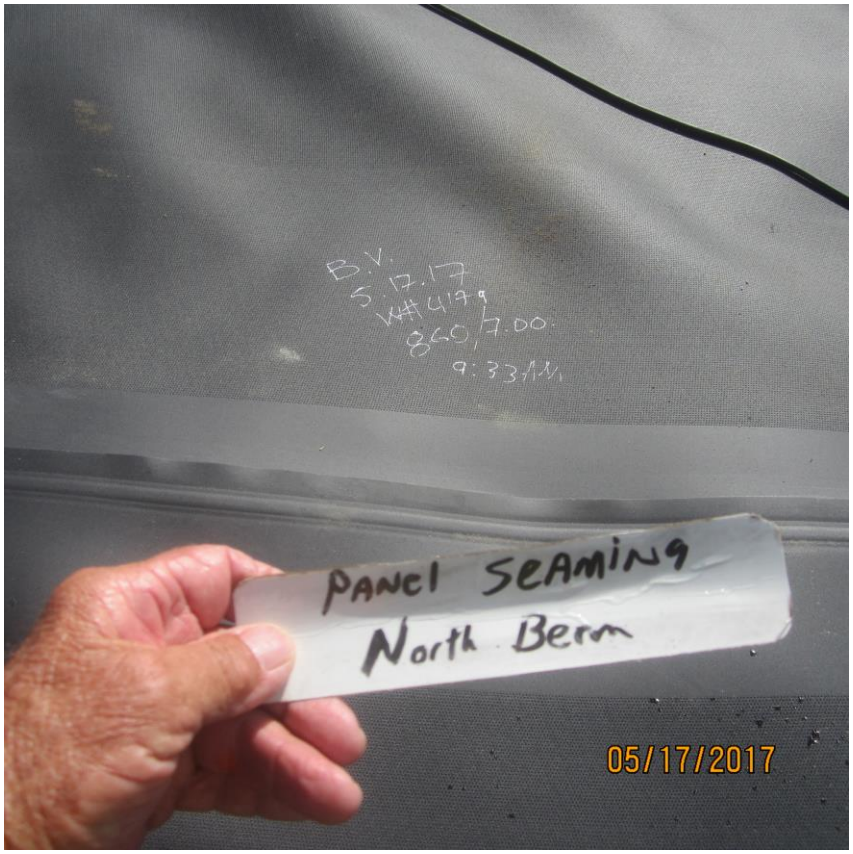
PANEL PLACEMENT
North Berm
05/17/2017

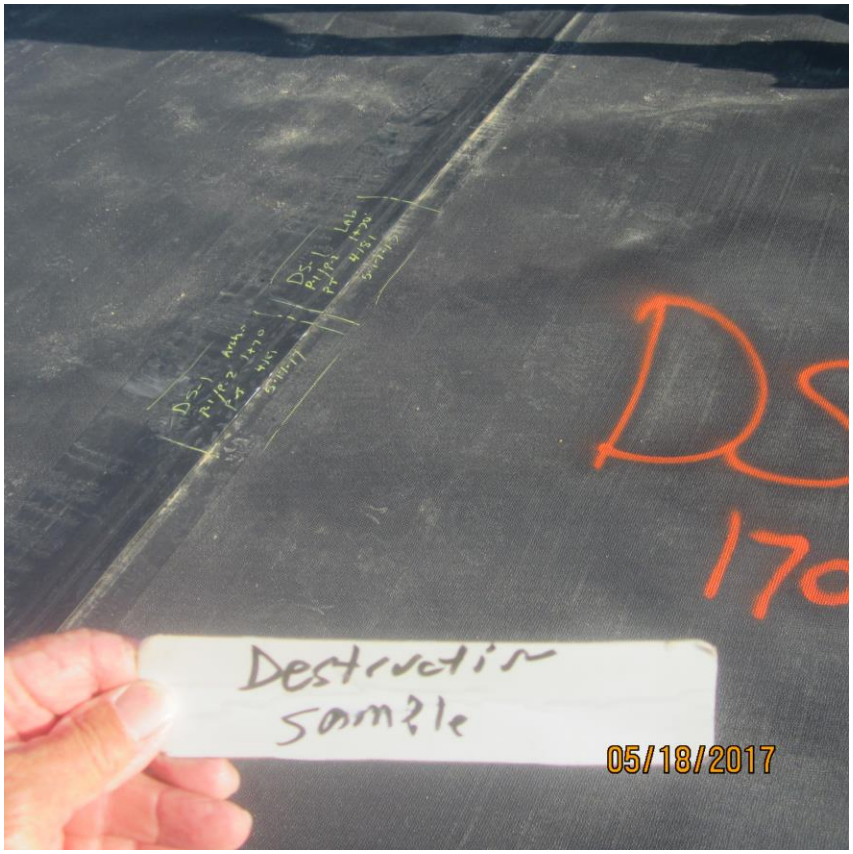
PANEL SEAMING
North Berm
05/17/2017


P.9
1259
1259
PANELS MARKET
Numbers
05/17/2017

GCL South
EAST Side
05/18/2017

Covering GCL
Sump & Treach
05/19/2017


B.V.
5.12.17
Panel Seaming
North Berm
05/17/2017


Destructive
sample
05/18/2017

Destructive
sample
05/18/2017

Completed
repAir
05/23/2017

Completed
repAir
05/23/2017

Geocomposite
INSTALLATION
05/22/2017

Geocomposite
05/20/2017

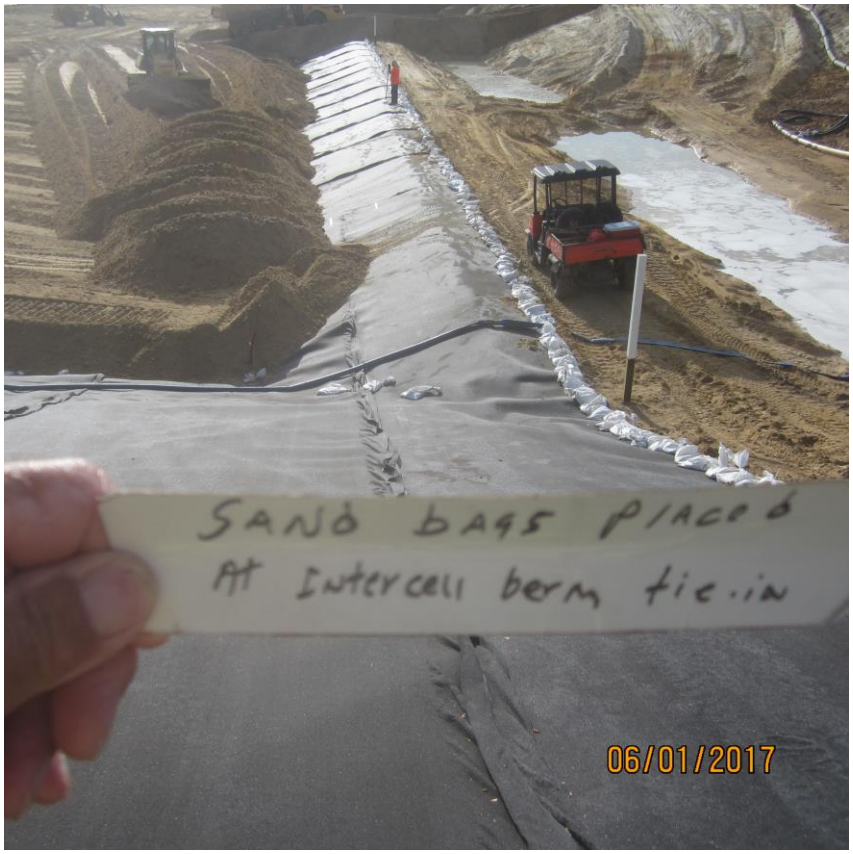
GeoComposite
05/20/2017

Cell-5 After
Completing Composite
05/23/2017

Placing Protective Cover
Sand in Cell-5
05/31/2017

Installation Leachate
Pipe, Stone, Geotextile
05/30/2017

Fusing Leachate
Collection Pipe
05/30/2017


SAND BAGS PLACED
AT Intercell berm tie-in
06/01/2017

FOAM Rubber
MARKERS for VACUUM PIPES
06/05/2017

No. 18
FUSING the 18"
SUMP RISER PIPE
06/05/2017

3 Pt. Sand Road
Accross Cell-5
06/06/2017

Starting Protective Cover
Sand on the North Slope
06/05/2017

Fine grading, SAND
North Slope
06/12/2017

Rounding Edge
of HDPE Plate
06/15/2017

INSTALLing SUMP
Riser PiPe
06/15/2017

INSTALLing SUMP
STONE
06/15/2017

VOLVO
Fusing Last Section of
6" Perforated Pipe
06/15/2017

Sewing Geotextile
Sump Stone
06/16/2017

Installing Rain
cover, North Slope
06/15/2017

DOOSAN
Excavating Drainage Ditch
North West Side, Near office
06/17/2017

VACUUM PIPE
Repair R-108
06/20/2017

R-108
06/20/2017

VACUUM PIPE
REPAIRS
06/20/2017

GEOCOMPOSITE
REPAIR
06/20/2017

R-241
LOWE'S
06/20/2017

Cell - 5
Rain cover
06/27/2017

Force main Trench
West Side, Cell-5
06/29/2017

Installing
Force main Pipe
06/29/2017

Welding Centrolizer
to Pipe
06/30/2017

Fusing 'T' in Force
Main At Sump
06/30/2017

Pumping Water into
the Force main
07/08/2017

Hydro Pressure Test
6" SDR-11 Force main
07/12/2017

Air Pressure test
10" Cassing for Force main
07/12/2017

VOLVO
Fusing the tie
in for Force main
07/12/2017

FUSING Force Main
Tie in
07/12/2017

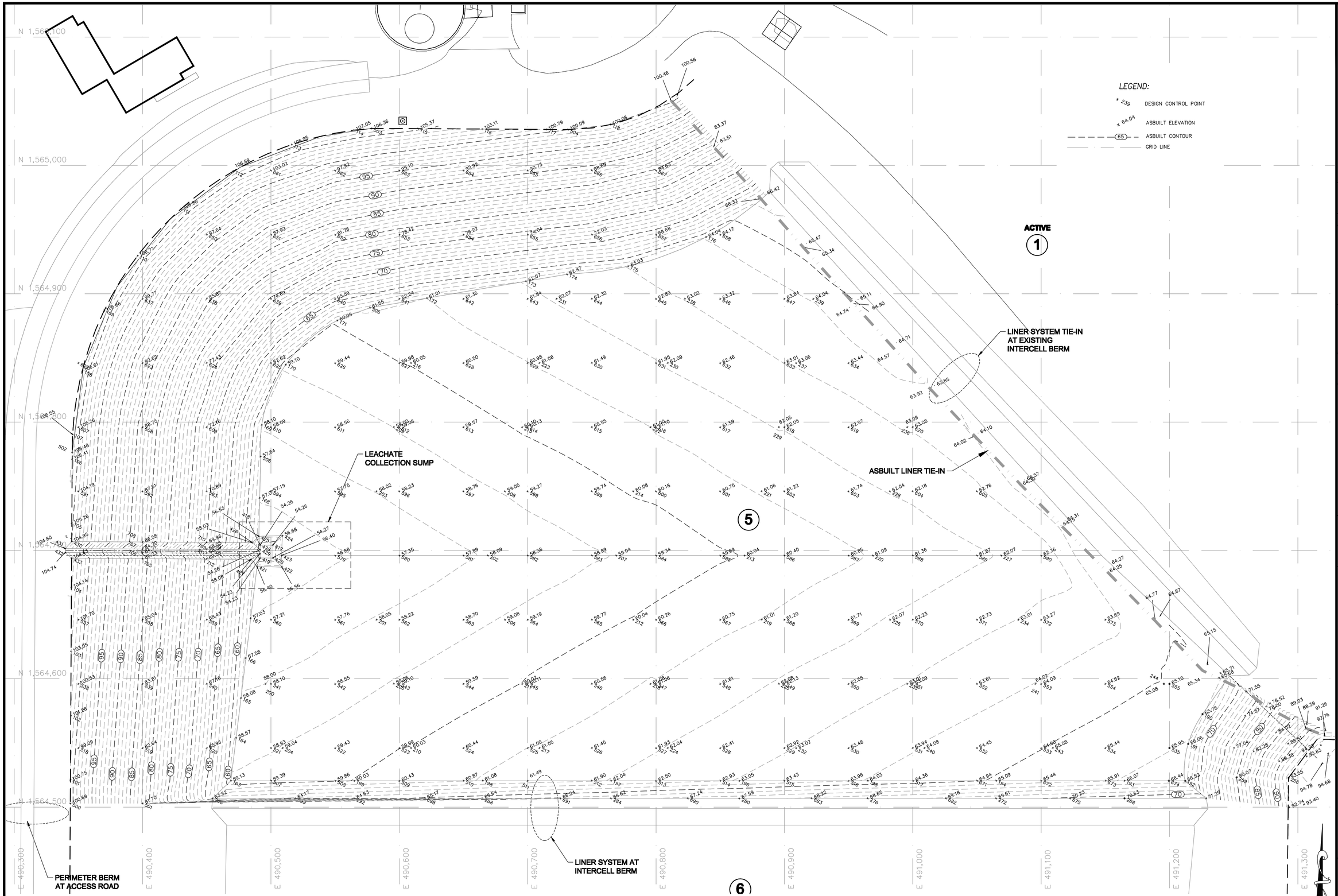
COMPACTION
1' Above Force MAIN
07/13/2017

HAND Compactions
Around & over PIPE
07/13/2017

INSTALLING Sod in Rolls
Vertical
07/11/2017

F. RECORD DRAWINGS

1 Asbuilt Liner Grade
2 Asbuilt Survey Control Table
3 Asbuilt 60-mil Textured Liner
4 Leachate System Asbuilt Survey
5 Asbuilt Protective Cover
6 Asbuilt Final Improvements



SURVEYOR's NOTES:

1.) North, the grid, and the coordinates shown hereon are referenced to the East Zone of the Florida State Plane Coordinate System, NAD 83, 1990

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

3.) See sheet 6 for survey control and see sheet 2 for asbuilt/design control point table.

NO.	DATE	REVISION

DEBORAH L. PEAVEY
LICENSE NUMBER
No. 6345
STATE OF FLORIDA
PROFESSIONAL SURVEYOR & MAPPER

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: WM1
FILE NAME: 315 wm vista cell 5 ASB PIPE.dwg

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

CLIENT:
WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FL 32703

ASBUILT LINER GRADE
VISTA CELL 5
VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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

5/15/2017
SURVEY DATE

SCALE	DRAWING NO.
1"=30'	347
PROJECT NO.	SHEET
315	1

DESIGN CONTROL POINT TABLE & ELEVATIONS

CONTROL POINT NUMBER	DESIGN NORTHING	DESIGN EASTING	DESIGN SUBGRADE (LINER GRADE) ELEVATION	ASBUILT LINER GRADE POINT NUMBER	ASBUILT LINER GRADE ELEVATION	ASBUILT PROTECTIVE COVER POINT NUMBER	ASBUILT PROTECTIVE COVER ELEVATION	ASBUILT PROTECTIVE COVER THICKNESS
101	1564521.23	490343.77	100.69	63382	100.75	81032	102.85	2.10
102	1564571.23	490344.05	101.83	63380	101.86	81030	103.96	2.10
103	1564621.23	490344.32	102.97	63378	103.05	81027	105.16	2.11
104	1564671.23	490344.59	104.11	63376	104.14	81025	106.31	2.16
105	1564721.23	490344.86	105.25	63371	105.26	81022	107.43	2.17
106	1564771.23	490345.13	106.38	63369	106.41	81019	108.56	2.15
107	1564790.41	490345.48	106.52	63367	106.55	81017	108.67	2.12
108	1564839.84	490353.03	106.58	63365	106.61	81014	108.83	2.22
109	1564886.83	490370.10	106.64	63364	106.66	81012	108.78	2.12
110	1564929.51	490396.15	106.71	1003	106.77	80783	108.89	2.12
111	1564966.22	490430.10	106.78	1004	106.86	80782	108.97	2.11
112	1564995.51	490470.63	106.85	63481	106.89	80781	109.01	2.12
113	1565016.17	490516.15	106.92	63480	106.95	80780	109.05	2.10
114	1565027.46	490564.67	106.98	63479	107.05	80779	109.31	2.26
115	1565028.65	490614.65	105.34	1006	105.37	80775	107.53	2.16
116	1565028.36	490664.65	103.05	1007	103.11	80773	105.23	2.13
117	1565028.07	490714.65	100.77	1008	100.79	80771	102.94	2.16
118	1565031.91	490764.50	100.00	63476	100.08	80768	102.48	2.40
163	1564520.55	490468.75	59.04	63331	59.13	81059	61.26	2.13
164	1564553.97	490472.83	58.50	63296	58.57	81060	60.70	2.13
165	1564585.03	490476.62	58.00	63294	58.08	81061	60.19	2.11
166	1564616.09	490480.41	57.50	63295	57.58	81062	59.69	2.11
167	1564647.14	490484.20	57.00	1099	57.03	81063	59.23	2.21
168	1564740.92	490491.21	57.00	1064	57.07	81076	59.18	2.11
169	1564797.69	490492.89	58.00	1024	58.10	81079	60.22	2.12
170	1564844.67	490511.50	59.00	1026	59.10	80801	61.26	2.16
171	1564879.17	490551.75	60.00	63350	60.09	80800	62.20	2.11
172	1564896.64	490621.50	61.00	63351	61.01	80799	63.20	2.19
173	1564909.77	490698.75	62.00	63484	62.07	80797	64.17	2.11
174	1564915.22	490730.77	62.41	63486	62.47	80796	64.58	2.11
175	1564921.51	490778.41	63.00	1021	63.03	80795	65.14	2.11
176	1564944.28	490838.98	64.00	1020	64.04	80792	66.29	2.25
190	1564572.42	491225.73	65.71	63432	65.78	80945	67.92	2.14
191	1564549.20	491214.56	66.00	63431	66.06	80944	68.21	2.15
192	1564520.55	491212.16	66.47	63425	66.52	80969	68.64	2.12
193	1564520.55	491164.93	66.00	63427	66.07	80971	68.19	2.13
194	1564520.55	491064.93	65.00	63417	65.09	80974	67.21	2.12
195	1564520.55	490964.93	64.00	63316	64.03	80977	66.21	2.18
196	1564520.55	490864.93	63.00	63319	63.05	80980	65.16	2.11
197	1564520.55	490764.93	62.00	63322	62.04	80983	64.16	2.12
198	1564520.55	490664.93	61.00	63325	61.08	81095	63.22	2.14
199	1564520.55	490564.93	60.00	63328	60.03	81095	63.12	3.09
200	1564596.05	490495.70	58.00	63293	58.00	81092	62.13	4.12
201	1564646.05	490582.32	58.00	1102	58.05	80729	60.19	2.13
202	1564696.05	490668.92	58.00	1095	58.09	80728	60.20	2.11
203	1564746.05	490582.32	58.00	1067	58.02	80737	60.14	2.12
204	1564546.05	490509.11	59.00	63298	59.04	5500	61.18	2.14
205	1564596.05	490595.71	59.00	63290	59.06	5501	61.18	2.12
206	1564646.05	490682.32	59.00	1105	59.08	80715	61.19	2.11
207	1564696.05	490768.92	59.00	1092	59.04	80727	61.15	2.11
208	1564746.05	490682.32	59.00	1070	59.05	80736	61.18	2.13
209	1564796.05	490595.71	59.00	1060	59.00	5502	61.13	2.13
210	1564546.05	490609.11	60.00	63301	60.03	5503	62.20	2.17
211	1564596.05	490695.71	60.00	63287	60.02	5504	62.12	2.10
212	1564646.05	490782.32	60.00	1108	60.04	80720	62.15	2.11
213	1564696.05	490868.92	60.00	1089	60.04	80726	62.15	2.11
214	1564746.05	490782.32	60.00	1073	60.08	80735	62.20	2.12
215	1564796.05	490695.71	60.00	1057	60.10	80746	62.21	2.11
216	1564846.05	490609.11	60.00	1029	60.05	80738	62.18	2.14
217	1564546.05	490709.11	61.00	63304	61.05	5005	63.16	2.11
218	1564596.05	490795.71	61.00	63284	61.08	80730	63.20	2.11
219	1564646.05	490882.32	61.00	63267	61.01	80721	63.16	2.15
220	1564696.05	490968.92	61.00	1086	61.09	80725	63.21	2.12
221	1564746.05	490882.32	61.00	1076	61.06	80734	63.21	2.14
222	1564796.05	490795.71	61.00	1054	61.00	5007	63.14	2.14
223	1564846.05	490709.11	61.00	1032	61.08	80739	63.21	2.13
224	1564546.05	490809.11	62.00	63307	62.04	5008	64.12	2.08
225	1564596.05	490895.71	62.00	63281	62.08	80731	64.20	2.12
226	1564646.05	490982.32	62.00	63270	62.07	80722	64.20	2.13
227	1564696.05	491068.92	62.00	1083	62.07	80724	64.19	2.12
228	1564746.05	490982.32	62.00	1079	62.04	80733	64.15	2.11
229	1564796.05	490895.71	62.00	1051	62.05	5009	64.14	2.09
230	1564846.05	490809.11	62.00	1035	62.09	80740	64.21	2.12
231	1564896.05	490722.51	62.00	63485	62.07	80745	64.20	2.13
232	1564546.05	490909.11	63.00	63310	63.02	80713	65.13	2.11
233	1564596.05	490995.71	63.00	63278	63.01	80717	65.15	2.14
234	1564646.05	491082.32	63.00	63273	63.01	80723	65.15	2.14
236	1564796.05	490995.71	63.00	1048	63.09	80743	65.21	2.12
237	1564846.05	490909.11	63.00	1038	63.06	80741	65.19	2.13
238	1564896.05	490822.51	63.00	1043	63.02	80744	65.16	2.14
239	1564896.05	490922.51	64.00	1040	64.04	80742	66.15	2.11
240	1564546.05	491009.11	64.00	63313	64.08	5010	66.18	2.10
241	1564596.05	491095.71	64.00	63275	64.02	80718	66.15	2.13
243	1564546.05	491109.11	65.00	63420	65.08	80719	67.19	2.11
244	1564596.05	491195.71	65.00	63439	65.08	80732	67.20	2.12
245	1564506.86	491228.64	71.20	63424	71.25	80996	73.81	2.56
256	1564522.78	491292.72	93.50	63589	93.55	80953	95.82	2.27
259	1564523.22	491252.22	80.00	63582	80.07	63582	82.11	2.04
268	1564506.86	491164.93	70.56	63423	70.63	80995	72.78	2.15
272	1564506.86	491064.93	69.56	63421	69.61	80992	71.74	2.13
276	1564506.86	490964.93	68.56	63342	68.65	80990	70.77	2.11
280	1564506.86	490864.93	67.56	63340	67.59	80988	69.72	2.13
284	1564506.86	490764.93	66.56	63338	66.62	80985	68.77	2.15
288	1564506.86	490664.68	65.56	63336	65.64	81098	67.79	2.15
292	1564506.86	490564.93	64.56	63334	64.63	81101	66.77	2.14
296	1564506.86	490454.47	63.46	63332	63.52	81057	65.64	2.12
417	1564704.12	490501.49	54.19	63403	54.26	81069	59.71	5.45
418	1564704.12	490491.49	54.19	63404	54.26	81068	59.76	5.50
419	1564694.12	490491.49	54.19	63407	54.23	81071	59.63	5.40
420	1564694.12	490501.49	54.19	63408	54.27	81070	59.64	5.37
421	1564687.64	490489.15	56.35	63409	56.40	81064	58.52	2.12
422	1564687.02	490508.59	56.55	63410	56.56	81065	58.69	2.13
423	1564696.05	490508.11	56.39	63411	56.40	81066	59.41	3.01
424	1564711.57	490508.94	56.67	63412	56.68	82001	58.80	2.12
425	1564710.99	490490.52	56.47	63413	56.53	81067	58.65	2.13
426	1564706.11	490485.57	58.00	63414	58.03	81075	60.15	2.12
427	1564693.14	490484.60	58.00	63415	58.08	81074	60.20	2.12
428	1564700.62	490491.49	54.19	63405	54.26	81073	59.74	5.48
429	1564697.62	490491.49	54.19	63406	54.22	81072	59.72	5.51

CONTROL POINT NUMBER	DESIGN NORTHING	DESIGN EASTING	DESIGN SUBGRADE (LINER GRADE) ELEVATION	ASBUILT LINER GRADE POINT NUMBER	ASBUILT LINER GRADE ELEVATION	ASBUILT PROTECTIVE COVER POINT NUMBER	ASBUILT PROTECTIVE COVER ELEVATION	ASBUILT PROTECTIVE COVER THICKNESS
430	1564706.88	490344.78	104.92	63372	104.95	81023	107.12	2.17
433	1564693.91	490344.71	104.62	63375	104.63	81024	106.74	2.11
500	1564502.86	490343.67	100.67	63383	100.69	81033	102.81	2.12
501	1564502.91	490400.00	81.66	63384	81.70	81035	83.86	2.16
502	1564776.32	490345.16	106.41	63368	106.48	81018	108.59	2.12
503	1565028.86	490578.31	106.31	63478	106.36	80777	108.99	2.63
504	1565027.97	490731.43	100.05	1009	100.09	80769	102.21	2.13
505	1564889.08	490577.06	61.51	63480	61.55	5012	63.70	2.15
506	1564773.04	490491.95	57.64	1063	57.64	81078	59.81	2.17
507	1564520.64	490500.00	59.35	63330	59.39	81090	61.53	2.13
508	1564520.55	490550.12	59.85	63329	59.86	81091	61.99	2.14
509	1564520.41	490600.00	60.40	63327	60.43	81093	62.56	2.13
510	1564520.55	490649.99	60.85	63326	60.87	81094	63.05	2.17
511	1564520.42	490700.00	61.39	63324	61.49	81096	63.63	2.14
512	1564520.55	490749.80	61.85	63323	61.90	80984	64.01	2.11
513	1564520.38	490800.00	62.41	63321	62.50	80982	64.62	2.12
514	1564520.53	490850.00	62.86	63320	62.93	80981	65.07	2.13
515	1564520.55	490899.83	63.35	63318	63.43	80979	65.55	2.12
516	1564520.40	490950.00	63.90	63317	63.96	80978	66.11	2.14
517	1564520.55	491000.27	64.35	63315	64.36	80976	66.48	2.12
518	1564546.00	490350.00	99.23	63381	99.29	81031	101.40	2.11
519	1564546.00	490400.00	82.57	63385	82.64	81036	84.75	2.11
520	1564546.00	490450.00	65.91	63398	65.96	81056	68.07	2.11
521	1564546.00	490500.00	58.91	63297	58.93	81089	61.10	2.17
522	1564546.00	490550.00	59.41	63299	59.43	81088	61.57	2.14
523	1564546.00	490600.00	59.91	63300	59.99	81087	62.12	2.13
524	1564546.00	490650.00	60.41	63302	60.44	81086	62.57	2.13
525	1564546.00	490700.00	60.91	63303	61.00	80934	63.13	2.12
526	1564546.00	490750.00	61.41	63305	61.45	80935	63.59	2.14
527	1564546.00	490800.00	61.91	63306	61.93	80936	64.03	2.11
528	1564546.00	490850.00	62.41	63308	62.41	80714	64.55	2.14
529	1564546.00	490900.00	62.91	63309	62.92	80937	65.08	2.17
530	1564546.00	490950.00	63.41	63311	63.48	80938	65.61	2.13
531	1564546.00	491000.00	63.91	63312	63.94	80939	66.09	2.15
532	1564546.00	491050.00	64.41	63314	64.45	80940	66.57	2.12
533	1564546.00	491100.00	64.91	63419	64.98	80941	67.10	2.12
534	1564546.00	491150.00	65.41	63429	65.44	80942	67.64	2.20
535	1564546.00	491200.00	65.91	63430	65.95	80943	68.06	2.11
538	1564596.00	490350.00	100.46	63379	100.53	81028	102.64	2.11
539	1564596.00	490400.00	83.80	63386	83.81	81037	85.95	2.14
540	1564596.00	490450.00	67.14	63397	67.16	81055	69.31	2.15
541	1564596.00	490500.00	58.04	63292	58.10	81082	60.22	2.12
542	1564596.00	490550.00	58.54	63291	58.55	81083	60.68	2.13
543	1564596.00	490600.00	59.04	63289	59.10	81084	61.23	2.12
544	1564596.00	490650.00	59.54	63288	59.59	81085	61.74	2.15
545	1564596.00	490700.00	60.04	63286	60.11	80933	62.24	2.13
546	1564596.00	490750.00	60.54	63285	60.56	80932	62.73	2.16
547	1564596.00	490800.00	61.04	63283	61.07	80931	63.23	2.17
548	1564596.00	490850.00	61.54	63282	61.61	80716	63.72	2.11
549	1564596.00	490900.00	62.04	63280	62.13	80930	64.25	2.12
550	1564596.00	490950.00	62.54	63279	62.55	80929	64.70	2.15
551	1564596.00	491000.00	63.04	63277	63.09	80928	65.23	2.14
552	1564596.00	491050.00	63.54	63276	63.61	80927	65.72	2.11
553	1564596.00	491100.00	64.04	63274	64.09	80926	66.21	2.12
554	1564596.00	491150.00	64.54	63445	64.62	80925	66.75	2.12
555	1564596.00	491200.00	65.04	63440	65.10	80924	67.21	2.11
557	1564646.00	490350.00	101.69	63377	101.70	81026	103.83	2.13
558	1564646.00	490400.00	85.03	63387	85.04	81038	87.19	2.15
559	1564646.00	490450.00	68.37	63396	68.43	81054	70.58	2.14
560	1564646.00	490500.00	57.18	1100	57.21	81081	59.35	2.15
561	1564646.00	490550.00	57.68	1101	57.76	80909	59.86	2.11
562	1564646.00	490600.00	58.18	1103	58.22	80910	60.37	2.15
563	1564646.00	490650.00	58.68	1104	58.70	80911	60.83	2.13
564	1564646.00	490700.00	59.18	1106	59.19	80912	61.30	2.11
565	1564646.00	490750.00	59.68	1107	59.77	80913	61.89	2.12
566	1564646.00	490800.00	60.18	63265	60.26	80914	62.37	2.11
567	1564646.00	490850.00	60.68	63266	60.75	80915	62.85	2.11
568	1564646.00	490900.00	61.18	63268	61.20	80916	63.31	2.11
569	1564646.00	490950.00	61.68	63269	61.71	80917	63.86	2.15
570	1564646.00	491000.00	62.18	63271	62.23	80918	64.35	2.12
571	1564646.00	491050.00	62.68	63272	62.73	80919	64.85	2.12
572	1564646.00	491100.00	63.18	63447	63.27	80920	65.38	2.11
573	1564646.00	491150.00	63.68	63446	63.69	80921	66.02	2.33
579	1564696.00	490550.00	56.81	1098	56.88	80908	59.13	2.25
580	1564696.00	490600.00	57.31	1097	57.35	80907	59.65	2.31
581	1564696.00	490650.00	57.81	1096	57.89	80906	60.10	2.21
582	1564696.00	490700.00	58.31	1094	58.38	80905	60.66	2.28
583	1564696.00	490750.00	58.81	1093	58.89	80904	61.00	2.11
584	1564696.00	490800.00	59.31	1091	59.34	80903	61.70	2.36
585	1564696.00	490850.00	59.81	1090	59.89	80902	62.04	2.15
586	1564696.00	490900.00	60.31	1088	60.40	80901	62.60	2.20
587	1564696.00	490950.00	60.81	1087	60.85	80900	63.00	2.14
588	1564696.00	491000.00	61.31	1085	61.36	80899	63.47	2.11
589	1564696.00	491050.00	61.81	1084	61.87	80898	64.10	2.23
590	1564696.00	491100.00	62.31	1082	62.36	80897	64.78	2.43
591	1564746.00	490350.00	104.14	63370	104.19	81021	106.34	2.15
592	1564746.00	490400.00	87.49	63357	87.51	81043	89.62	2.11
593	1564746.00	490450.00	70.85	63356	70.89	81049	73.02	2.13
594	1564746.00	490500.00	57.18	1065	57.19	81077	59.31	2.12
595	1564746.00	490550.00	57.68	1066	57.75	80884	59.86	2.11
596	1564746.00	490600.00	58.18	1068	58.23	80885	60.34	2.11
597	1564746.00	490650.00	58.68	1069	58.76	80886	60.90	2.14
598	1564746.00	490700.00	59.18	1071	59.27	80887	61.39	2.12
599	1564746.00	490750.00	59.68	1072	59.74	80888	61.86	2.12
600	1564746.00	490800.00	60.18	1074	60.18	80889	62.30	2.12
601	1564746.00	490850.00	60.68	1075	60.75	80890	62.87	2.12
602	1564746.00	490900.00	61.18	1077	61.22	80891	63.33	2.11
603	1564746.00	490950.00	61.68	1078	61.74	80892	63.85	2.11
604	1564746.00	491000.00	62.18	1080	62.18	80893	64.32	2.14
605	1564746.00	491050.00	62.68	1081	62.76	80894	64.89	2.13
607	1564796.00	490350.00	105.31	63366	105.36	81016	107.47	2.12
608	1564796.00	490400.00	88.73	63358	88.75	81044	90.88	2.12
609	1564796.00	490450.00	72.14	63355	72.16	81048	74.33	2.17
610	1564796.00	490500.00	58.04	1025	58.09	81080	60.20	2.11
611	1564796.00	490550.00	58.54	1061	58.56	80883	60.74	2.17
612	1564796.00	490600.00	59.04	1059	59.08	80882	61.20	2.12
613	1564796.00	490650.00	59.54	1058	59.57	80881	61.73	2.16
614	1564796.00	490700.00	60.04	1056	60.13	80880	62.26	2.13
615	1564796.00	490750.00	60.54	1055	60.55	80879	62.67	2.11

CONTROL POINT NUMBER	DESIGN NORTHING	DESIGN EASTING	DESIGN SUBGRADE (LINER GRADE) ELEVATION	ASBUILT LINER GRADE POINT NUMBER	ASBUILT LINER GRADE ELEVATION	ASBUILT PROTECTIVE COVER POINT NUMBER	ASBUILT PROTECTIVE COVER ELEVATION	ASBUILT PROTECTIVE COVER THICKNESS
616	1564796.00	490800.00	61.04	1053	61.10	80878	63.20	2.11
617	1564796.00	490850.00	61.54	1052	61.59	80877	63.70	2.11
618	1564796.00	490900.00	62.04	1050	62.05	80876	64.18	2.14
619	1564796.00	490950.00	62.54	1049	62.57	80875	64.73	2.16
620	1564796.00	491000.00	63.04	1047	63.08	80874	65.21	2.14
623	1564846.00	490400.00	92.60	63359	92.62	81045	94.78	2.16
624	1564846.00	490450.00	77.37	63354	77.43	81047	79.55	2.12
625	1564846.00	490500.00	62.58	63353	62.62	80802	64.75	2.13
626	1564846.00	490550.00	59.41	1027	59.44	80865	61.58	2.14
627	1564846.00	490600.00	59.91	1028	59.98	80864	62.10	2.11
628	1564846.00	490650.00	60.41	1030	60.50	80863	62.62	2.12
629	1564846.00	490700.00	60.91	1031	60.98	80862	63.12	2.14
630	1564846.00	490750.00	61.41	1033	61.49	80861	63.64	2.15
631	1564846.00	490800.00	61.91	1034	61.95	80860	64.08	2.12
632	1564846.00	490850.00	62.41	1036	62.46	80859	64.59	2.13
633	1564846.00	490900.00	62.91	1037	63.01	80858	65.13	2.13
634	1564846.00	490950.00	63.41	1039	63.44	80857	65.57	2.12
637	1564896.00	490400.00	99.74	63360	99.77	81046	101.92	2.15
638	1564896.00	490450.00	85.83	63361	85.87	80803	87.99	2.11
639	1564896.00	490500.00	74.64	63352	74.69	80804	76.81	2.11
640	1564896.00	490550.00	65.57	1023	65.59	80805	67.73	2.14
641	1564896.00	490600.00	62.22	63402	62.24	5015	64.39	2.15
642	1564896.00	490650.00	61.27	63482	61.36	80798	63.49	2.13
643	1564896.00	490700.00	61.77	63483	61.84	80866	63.99	2.15
644	1564896.00	490750.00	62.27	1045	62.32	80867	64.44	2.12
645	1564896.00	490800.00	62.77	1044	62.83	80868	64.96	2.12
646	1564896.00	490850.00	63.27	1042	63.32	80869	65.48	2.16
647	1564896.00	490900.00	63.77	1041	63.84	80870	65.97	2.12
650	1564946.00	490450.00	97.57	1015	97.64	80784	99.81	2.17
651	1564946.00	490500.00	87.90	63400	87.92	80785	90.02	2.11
652	1564946.00	490550.00	81.73	63401	81.76	80786	83.88	2.12
653	1564946.00	490600.00	78.35	1016	78.42	80787	80.60	2.17
654	1564946.00	490650.00	76.22	1017	76.22	80788	78.38	2.16
655	1564946.00	490700.00	74.03	1018	74.04	80789	76.21	2.17
656	1564946.00	490750.00	72.00	1019	72.03	80790	74.13	2.11
657	1564946.00	490800.00	68.63	63469	68.68	80791	70.82	2.14
658	1564946.00	490850.00	64.14	1046	64.17	80793	66.39	2.22
661	1564996.00	490500.00	102.96	1014	103.02	80806	105.17	2.15
662	1564996.00	490550.00	97.90	1013	97.92	80807	100.09	2.18
663	1564996.00	490600.00	95.04	1012	95.10	80808	97.22	2.12
664	1564996.00	490650.00	92.90	1011	92.92	80809	95.08	2.15
665	1564996.00	490700.00	90.71	1010	90.73	80810	92.89	2.16
666	1564996.00	490750.00	88.60	63470	88.69	80811	90.81	2.12
667	1564996.00	490800.00	84.60	63471	84.63	80812	86.75	2.12
671	1564520.55	491050.01	64.85	63416	64.94	80975	67.14	2.19
672	1564520.55	491099.94	65.35	63418	65.44	80973	67.58	2.15
673	1564520.55	491150.14	65.85	63428	65.91	80972	68.07	2.16
674	1564520.55	491199.51	66.35	63426	66.44	80970	68.57	2.13
675	1564506.86	491122.62	70.14	63422	70.23	80994	72.35	2.12
682	1564506.86	491025.89	69.17	63343	69.18	80991	71.36	2.18
683	1564506.86	490921.28	68.12	63341	68.22	80989	70.32	2.11
690	1564506.86	490824.84	67.16	63339	67.24	80986	69.38	2.15
691	1564506.86	490725.47	66.17	63337	66.24	81097	68.35	2.11
698	1564506.86	490619.88	65.11	63335	65.17	81100	67.29	2.13
699	1564506.86	490519.02	64.10	63333	64.17	81102	66.29	2.13
705	1564693.60	490399.99	86.20	63388	86.23	81039	88.34	2.11
706	1564698.15	490400.00	84.69	63389	84.71	81040	88.52	3.81
707	1564701.12	490399.99	84.69	63390	84.70	81041	88.54	3.85
708	1564706.60	490400.00	86.52	63391	86.58	81042	88.69	2.12
709	1564700.87	490450.00	68.03	63393	68.05	81051	71.98	3.92
710	1564706.31	490449.98	69.86	63392	69.96	81050	72.09	2.13
711	1564697.85	490449.98	68.03	63394	68.09	81052	72.00	3.90
712	1564693.33	490449.97	69.54	63395	69.56	81053	71.70	2.14

NO.	DATE	REVISION

DEBORAH L. PEAVEY
LICENSE NUMBER
No. 6345
STATE OF FLORIDA
PROFESSIONAL SURVEYOR & MAPPER

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: WM1
FILE NAME: 315 wm vista cell 5 TABLE.dwg

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

CLIENT:

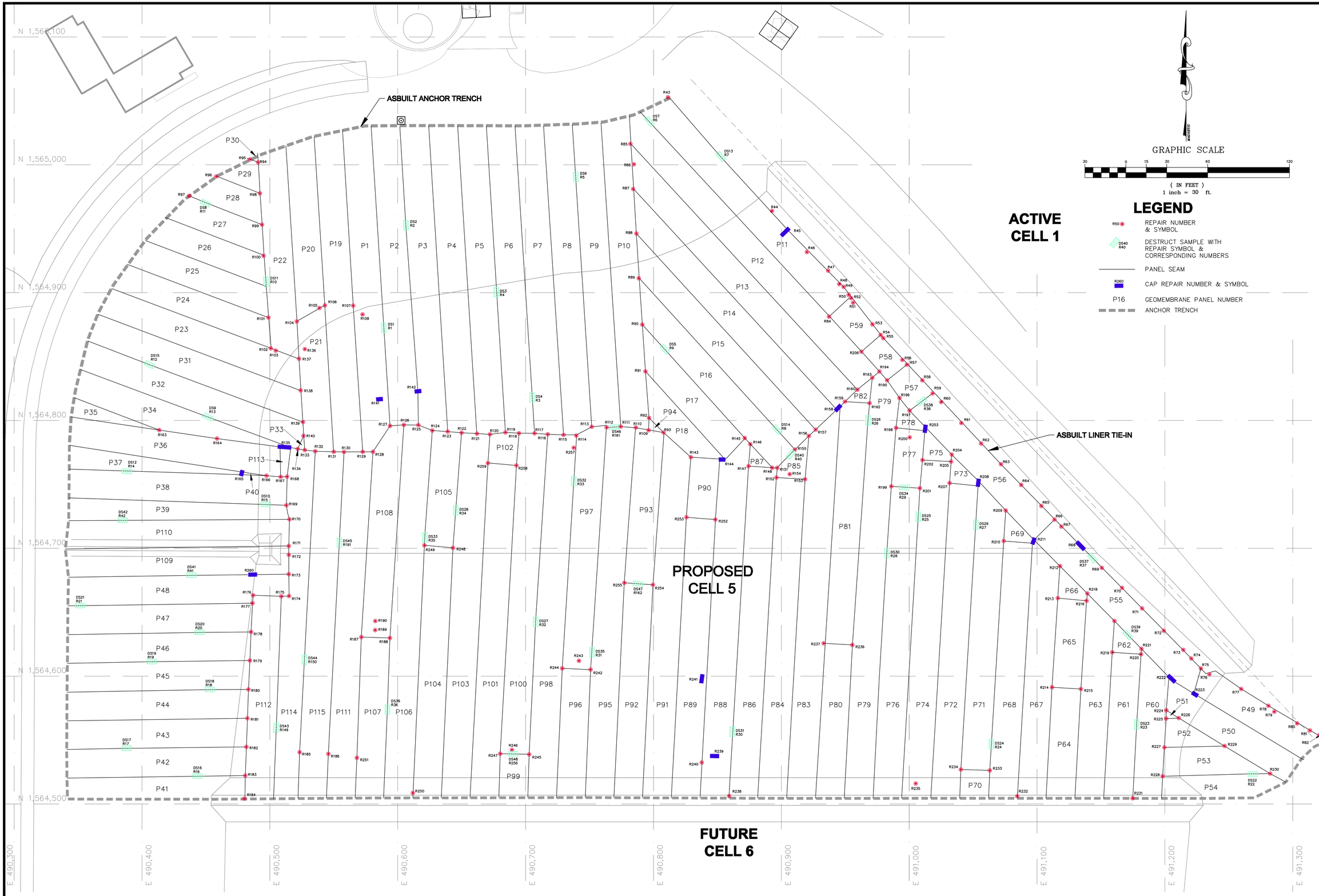
WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FL 32703

ASBUILT SURVEY CONTROL TABLE
VISTA CELL 5
VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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

8/2/2017
SURVEY DATE

SCALE	DRAWING NO.
1"=30'	347
PROJECT NO.	SHEET
315	2



SURVEYOR's NOTES:

1.) North, the grid, and the coordinates shown hereon are referenced to the East Zone of the Florida State Plane Coordinate System, NAD 83, 1990

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

LINER AREA = 8.73 ACRES

NO.	DATE	REVISION

DEBORAH L. PEAVEY
LICENSE NUMBER
No. 6345
STATE OF FLORIDA
PROFESSIONAL SURVEYOR & MAPPER

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: WM1
FILE NAME: 315 wm vista cell 5 ASB LINER asb

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

CLIENT:

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FL 32703

ASBUILT 60ml TEXTURED LINER
VISTA CELL 5
VISTA CLASS III LANDFILL
APOPKA, FLORIDA

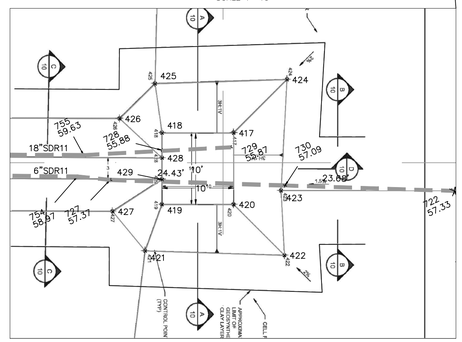
DEBORAH L. PEAVEY, P.S.M.
FLORIDA REGISTRATION NUMBER 6345
FLORIDA BUSINESS NUMBER 7779

5/15/2017
SURVEY DATE

SCALE	DRAWING NO.
1"=30'	347
PROJECT NO.	SHEET
315	3

DETAIL OF SUMP

SCALE 1"=10'



FORCEMAIN ELEVATIONS

DESCRIPTION	POINT NUMBER	NORTHING	EASTING	TOP OF PIPE ELEVATION
10"FORCEMAIN	81161	1565035.08	490558.44	109.10
10"FORCEMAIN	81162	1565023.04	490510.66	108.91
10"FORCEMAIN	81163	1565005.07	490465.61	109.43
10"FORCEMAIN	81164	1564978.29	490424.12	109.96
10"FORCEMAIN	81167	1564942.21	490390.27	109.73
10"FORCEMAIN	81168	1564900.12	490363.57	109.71
10"FORCEMAIN	81169	1564853.58	490345.22	108.96
10"FORCEMAIN	81170	1564805.39	490334.92	108.81
10"FORCEMAIN	81171	1564756.64	490333.15	108.40
10"FORCEMAIN	81172	1564720.93	490333.61	103.23
10"FORCEMAIN	81173	1564694.77	490333.49	102.65
10"FORCEMAIN TEE	81174	1564710.18	490333.31	103.12
FORCEMAIN 10"x8" REDUCER	81175	1564709.98	490334.79	103.11
FORCEMAIN 8"x6" REDUCER	81176	1564710.02	490335.84	102.97
6"FORCEMAIN 45BEND	81177	1564710.00	490336.55	102.86
6"FORCEMAIN	81178	1564709.71	490337.10	106.08
10"FORCEMAIN	81180	1564656.70	490333.84	101.18
10"FORCEMAIN	81181	1564606.45	490333.23	99.85
10"FORCEMAIN	81191	1564556.97	490333.86	98.91
10"FORCEMAIN	81192	1564507.02	490335.61	98.07
10"FORCEMAIN	81193	1564456.99	490338.90	96.61
10"FORCEMAIN	81194	1564441.02	490339.59	96.64
ELECTRIC LINE	81179	1564707.35	490333.31	102.32
ELECTRIC LINE	81165	1564963.19	490405.84	103.77
ELECTRIC LINE	81166	1565012.55	490369.79	107.32

SUMP ELEVATIONS

CONTROL POINT NUMBER	DESIGN NORTHING	DESIGN EASTING	DESIGN SUBGRADE (LINER GRADE) ELEVATION	ASBUILT LINER GRADE POINT NUMBER	ASBUILT LINER GRADE ELEVATION	DIFFERENCE BETWEEN LINER GRADE AND DESIGN	ASBUILT PROTECTIVE COVER POINT NUMBER	ASBUILT PROTECTIVE COVER ELEVATION	ASBUILT THICKNESS COVER LINER GRADE
417	1564704.12	490501.49	54.19	63403	54.26	0.07	81069	59.71	5.45
418	1564704.12	490491.49	54.19	63404	54.26	0.07	81068	59.76	5.50
419	1564694.12	490491.49	54.19	63407	54.23	0.04	81071	59.63	5.40
420	1564694.12	490501.49	54.19	63408	54.27	0.08	81070	59.64	5.37
421	1564687.64	490489.15	56.35	63409	56.40	0.05	81064	58.52	2.12
422	1564687.02	490508.59	56.55	63410	56.56	0.01	81065	58.69	2.13
423	1564696.05	490508.11	56.39	63411	56.40	0.01	81066	59.41	3.01
424	1564711.57	490508.94	56.67	63412	56.68	0.01	82001	58.80	2.12
425	1564710.99	490490.52	56.47	63413	56.53	0.06	81067	58.65	2.13
426	1564706.11	490485.57	58.00	63414	58.03	0.03	81075	60.15	2.12
427	1564693.14	490484.60	58.00	63415	58.08	0.08	81074	60.20	2.12
428	1564700.62	490491.49	54.19	63405	54.26	0.07	81073	59.74	5.48
429	1564697.62	490491.49	54.19	63406	54.22	0.03	81072	59.72	5.51

LEACHATE COLLECTION ELEVATIONS

DESCRIPTION	POINT NUMBER	NORTHING	EASTING	TOP OF PIPE ELEVATION	DISTANCE	POINT NUMBER	ELEVATION	SLOPE	TOP OF STONE ELEVATION	THICKNESS OF STONE
TOP 6" FLANGE	737	1564530.61	491312.58	98.77						
TOP 6" PIPE CLEANOUT	736	1564531.15	491312.15	98.36						
TOP 6" PIPE CLEANOUT	735	1564540.53	491301.45	92.99	41.20	734	79.63	32.43%		
TOP 6" PIPE CLEANOUT	734	1564567.61	491270.41	79.63	40.19	733	66.42	32.87%	80.62	0.99
TOP 6" PIPE CLEANOUT	733	1564593.77	491239.90	66.42	49.86	732	65.92	1.00%	67.43	1.01
TOP 6" PIPE CLEANOUT	732	1564627.94	491203.58	65.92	50.59	731	65.42	1.00%	66.91	0.99
TOP 6" PIPE CLEANOUT	731	1564664.23	491168.33	65.42	44.20	713	64.98	1.00%	66.43	1.01
TOP 6" BEND	713	1564695.23	491136.83	64.98	50.01	714	62.88	4.21%	66.00	1.02
TOP 6" PIPE PERF	714	1564696.18	491086.83	62.88	50.41	1981	62.37	1.00%	63.86	0.98
TOP 6" PIPE PERF	1981	1564696.03	491036.42	62.37	49.50	715	61.88	1.00%	63.36	0.99
TOP 6" PIPE PERF	715	1564695.88	490986.92	61.88	49.96	1980	61.38	1.00%	62.88	1.00
TOP 6" PIPE PERF	1980	1564695.80	490936.96	61.38	49.80	716	60.88	1.00%	62.36	0.98
TOP 6" PIPE PERF	716	1564695.73	490887.16	60.88	49.64	717	60.38	1.00%	61.88	1.01
TOP 6" PIPE PERF	717	1564696.04	490837.52	60.38	50.15	1979	59.88	1.00%	61.39	1.01
TOP 6" PIPE PERF	1979	1564696.09	490787.37	59.88	50.10	718	59.38	1.00%	60.91	1.03
TOP 6" PIPE PERF	718	1564696.14	490737.27	59.38	48.54	719	58.89	1.00%	60.40	1.02
TOP 6" PIPE PERF	719	1564696.13	490688.74	58.89	51.67	720	58.38	1.00%	59.90	1.01
TOP 6" PIPE PERF	720	1564696.30	490637.07	58.38	51.07	721	57.86	1.00%	59.37	0.99
TOP 6" PIPE PERF	721	1564695.95	490586.00	57.86	53.68	722	57.33	1.00%	58.85	0.99
TOP 6" PIPE PERF	722	1564696.05	490532.32	57.33	23.68	730	57.09	1.00%	58.31	0.98
TOP 6" PIPE PERF	730	1564696.80	490508.65	57.09	24.43					

DESCRIPTION	POINT NUMBER	NORTHING	EASTING	TOP OF PIPE ELEVATION
TOP 6" PIPE BEND	727	1564697.58	490484.23	57.37
TOP 6" PIPE CLEANOUT	754	1564698.06	490479.65	58.97
TOP 6" PIPE CLEANOUT	753	1564698.53	490437.84	77.95
TOP 6" PIPE CLEANOUT	723	1564699.68	490390.46	88.58
TOP 6" PIPE CLEANOUT	748	1564698.47	490341.47	104.94
TOP OF 6" FLANGE	81647	1564698.36	490339.05	105.54
TOP OF 18" FLANGE	81646	1564701.12	490339.28	106.65
TOP 18" PIPE	749	1564701.28	490348.45	103.49
TOP 18" PIPE	724	1564700.61	490396.52	87.52
TOP 18" PIPE	725	1564701.17	490443.30	71.99
TOP 18" PIPE	755	1564701.05	490480.53	59.63
TOP 18" PIPE BEND	728	1564701.75	490491.44	55.88
TOP 18" PIPE PERF	729	1564702.15	490501.09	55.87
EXTENSION OF CELL 1 CLEANOUT				
TOP 6" PIPE CLEANOUT	63573	1564565.64	491307.68	89.32
TOP 6" PIPE CLEANOUT	741	1564564.89	491308.13	89.50
TOP 6" PIPE CLEANOUT	740	1564560.54	491311.56	91.33
TOP 6" PIPE CLEANOUT	63572	1564550.16	491320.06	94.76
TOP 6" PIPE CLEANOUT	739	1564543.32	491327.02	98.29
TOP 6" FLANGE	738	1564542.31	491328.12	99.06

EXISTING WEATHER STATION

PERIMETER SWALE TIE-IN

MANHOLE

3:1

Electric Box 81166 112.32 ELECTRIC LINE

Electric Line

81165 103.77 ELECTRIC LINE

81162 108.91 — 81163 109.43 — 81164 109.96 — 81167 109.73 — 81168 109.71 — 81169 108.96 — 81170 108.81 — 81171 108.40

ELECTRIC BOX

81172 103.23 — 81173 102.65 — 81174 103.12 — 81175 103.11 — 81176 102.97 — 81177 102.86 — 81178 106.08 — 81646 106.65 — 81647 105.54 — 81179 102.32 ELECTRIC LINE — 81180 101.18 — 81181 99.85 — 81191 98.91 — 81192 98.07 — 81193 96.61 — 81194 96.64

LEACHATE COLLECTION SUMP

ASBUILT LINER TIE-IN

748 104.94 — 749 103.49 — 724 87.52 — 725 71.99 — 723 88.58 — 753 77.95 — 722 57.33

53.68' — 51.07' — 51.67' — 48.54' — 50.10' — 50.15' — 49.64' — 49.80' — 49.96' — 50.41' — 50.01' — 44.20' — 50.50' — 49.86' — 40.19' — 41.20' — 40.00'

719 58.89 — 718 59.38 — 1979 59.88 — 717 60.38 — 716 60.88 — 715 61.88 — 1981 62.37 — 1980 61.38 — 714 62.88 — 713 64.98 — 731 65.42 — 732 65.92 — 733 66.42 — 734 79.63 — 735 92.99 — 736 98.56 — 737 98.77 — 738 99.06 — 739 98.29 — 740 91.33 — 741 89.50 — 63572 94.76 — 63573 89.32

E 490,400 — E 490,500 — E 490,600 — E 490,700 — E 490,800 — E 490,900 — E 491,000 — E 491,100 — E 491,200 — E 491,300

N 1,564,700 — N 1,564,800 — N 1,564,900 — N 1,565,000 — N 1,565,100

1 — 5 — 6

FUTURE

LEGEND:

- 731 x 66.42 — ASBUILT ELEVATION TOP OF PIPE
- ASBUILT ANCHOR TRENCH
- ASBUILT LINER POST

SURVEYOR's NOTES:

1.) North, the grid, and the coordinates shown hereon are referenced to the East Zone of the Florida State Plane Coordinate System, NAD 83, 1990

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

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

REVISION | DATE | NO.

DEBORAH L. PEAVEY LICENSE NUMBER No. 6345 STATE OF FLORIDA PROFESSIONAL SURVEYOR & MAPPER

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: WM1 | FILE NAME: 315 wm vista cell 5 ASB PIPE.dwg

Peavey & Associates
SURVEYING & MAPPING PA
9399 N LAKE BUFFUM RD
FORT MEADE, FL 33841
PHONE 863-285-1570
FLORIDA BUSINESS NO:7779

CLIENT:

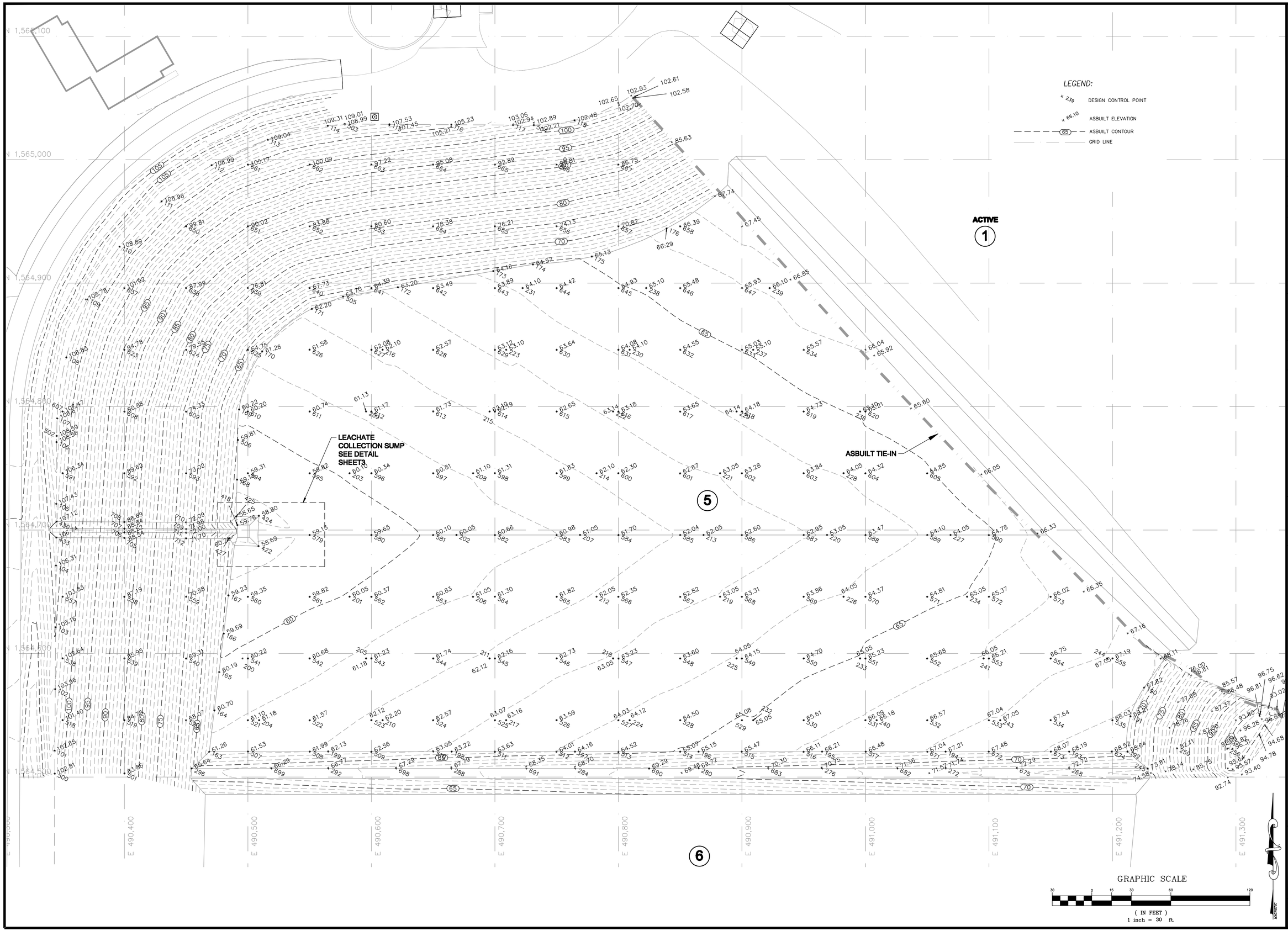
WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FL 32703

LEACHATE SYSTEM ASBUILT SURVEY
VISTA CELL 5
VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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

7/27/2017
SURVEY DATE

SCALE	DRAWING NO.
1"=30'	347
PROJECT NO.	SHEET
315	4



NO.	DATE	REVISION

DEBORAH L. PEAVEY
LICENSE NUMBER
No. 6345
STATE OF FLORIDA
PROFESSIONAL SURVEYOR & MAPPER

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Drawn By: DLP
Party Chief: SP
Field Book: WM1
FILE NAME: 315 wm vista cell 5 ASB final cover.dwg

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

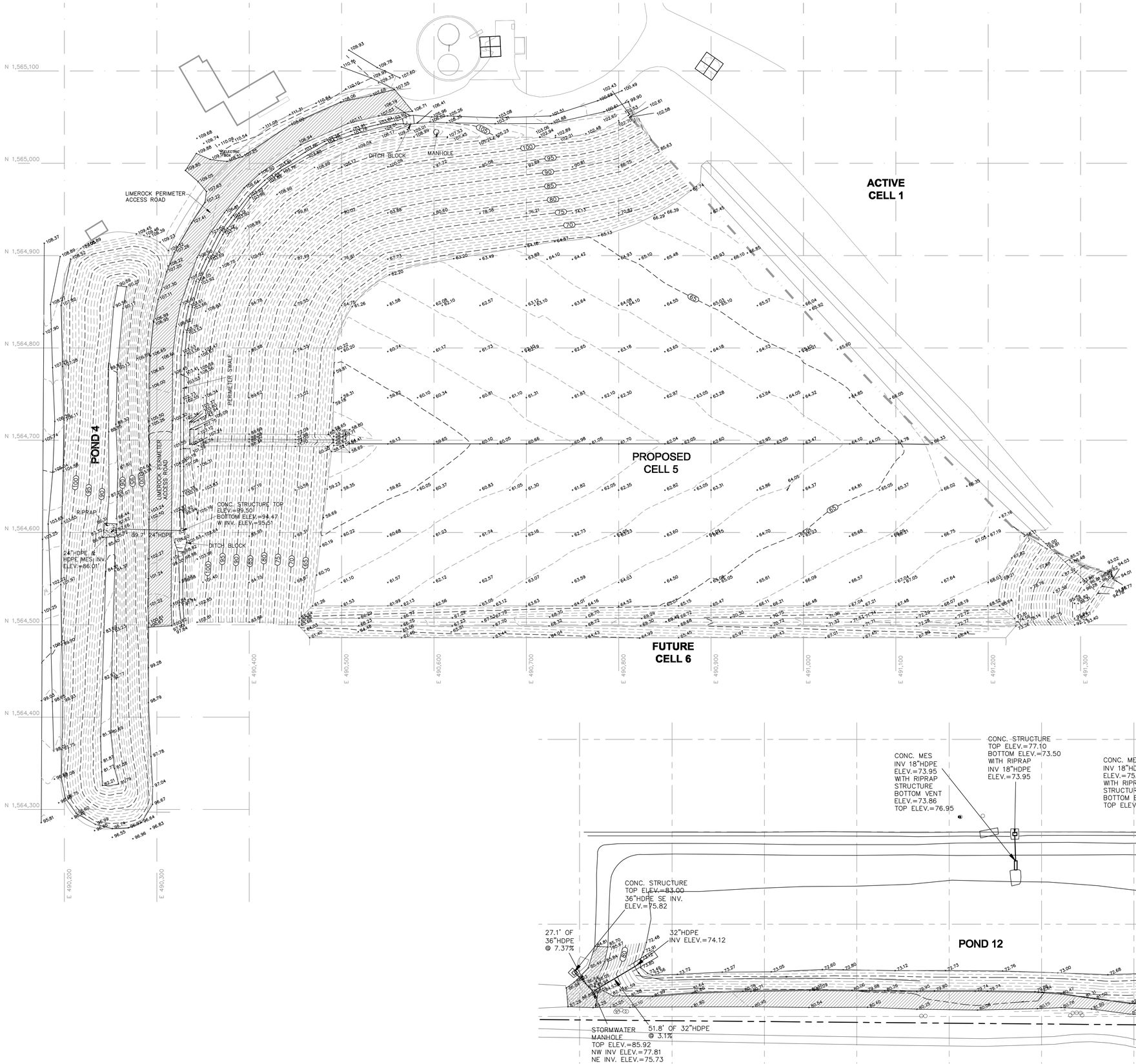
CLIENT:
WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FL 32703

ASBUILT PRO TECTIVE COVER
VISTA CELL 5
VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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

6/22/2017
SURVEY DATE

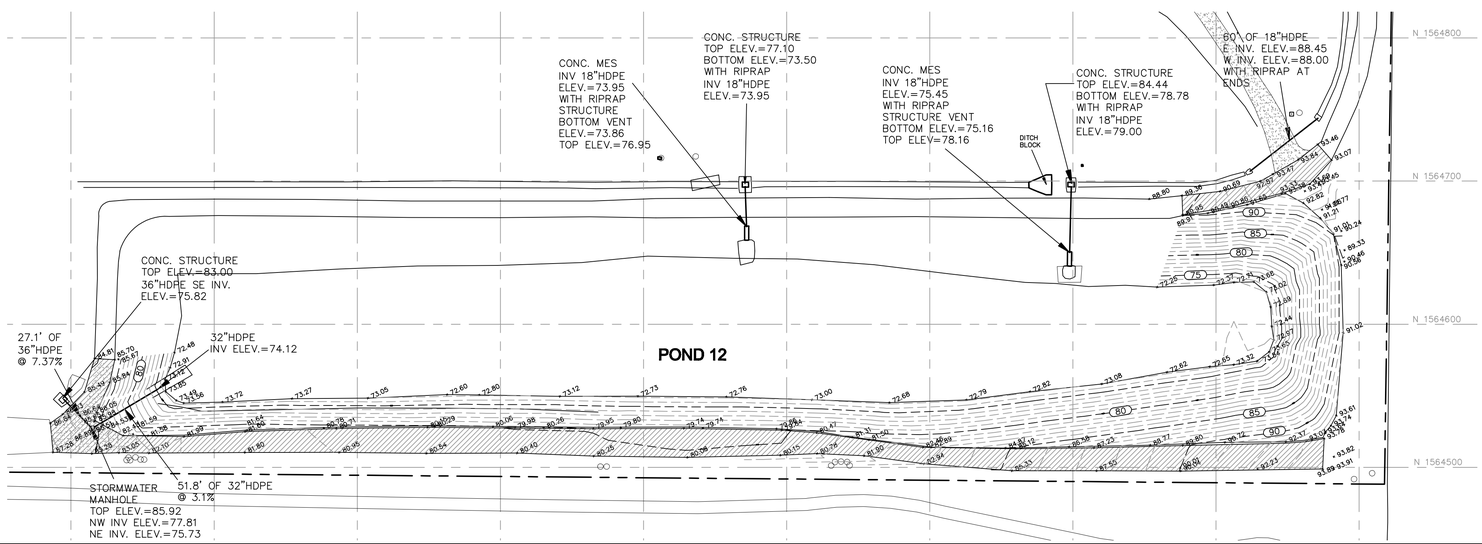
SCALE	DRAWING NO.
1"=30'	347
PROJECT NO.	SHEET
315	5



SURVEYOR's NOTES:

1.) North, the grid, and the coordinates shown hereon are referenced to the East Zone of the Florida State Plane Coordinate System, NAD 83, 1990

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



REVISION | DATE | NO.

DEBORAH L. PEAVEY
LICENSE NUMBER
No. 6345
STATE OF FLORIDA
PROFESSIONAL SURVEYOR & MAPPER

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Drawn By:	Party Chief:	Field Book:	FILE NAME:
DLP	SP	WM1	315 wm vista cell 5 ASB final FINAL

Peavey & Associates
SURVEYING & MAPPING PA
9399 N LAKE BUFFUM RD
PORT MEADE, FL 33841
PHONE: 863-773-4979
FLORIDA BUSINESS NO.7779

CLIENT:
WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FL 32703

ASBUILT FINAL IMPROVEMENTS
VISTA CELL 5
VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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

7/20/2017
SURVEY DATE

SCALE	DRAWING NO.
1"=30'	347
PROJECT NO.	SHEET
315	6