

SEARCHED

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MAILROOM

Terracon

LETTER OF TRANSMITTAL

TO: ADEQ – Solid Waste Division

DATE: 11/25/2015

5301 Northshore Drive

JOB NO: 35157094

North Little Rock, AR 72118

JOB TITLE: IESI Cell B2 CQA

ATTN: Clark McWilliams, P.E.

Mrs. Barbara Mathews

We are sending you the following items: via Hand Delivery

☐ originals

☐ specifications

☒ reproductions

☐ samples

☐ copy of letter

other CD

Copies

Description

Date

'2 CD – Cherokee Village Landfill Class 1 Cell B2 CQA Report

AFIN: 25-00028
PMT#: 0299-51 REC'D SCAN

These are transmitted:

NOV 30 2015

☐ for your approval

☐ as requested

DOC ID: 68637
TO: CMCZ file SWMD

☒ for review and comment

☐ after loan to us

☐ for your records

other _____

Remarks:

If you have any questions, please call me at 501-847-9292, Ext. 312

Written by: David McCormick, P.E. Terracon – Little Rock

Construction Quality Assurance Certification Report

Cherokee Sanitary Landfill, Class 1
Cell B2 Construction
Cherokee Village, Arkansas

Permit No. 0299-S1
AFIN: 25-00028

November 2015
Project No. 35157094



Prepared for:

IESI – AR Landfill Corporation
Cherokee Sanitary Landfill
300 Landfill Road
Cherokee Village, AR 72529
(870) 994-7717

Prepared by:

Terracon Consultants, Inc.
25809 Interstate 30 South
Bryant, Arkansas 72022
(501) 847-9292



terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

Cell B2 CQA Certification Report

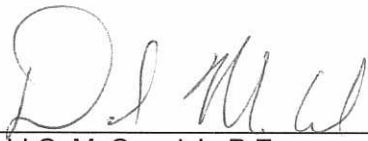
Cherokee Sanitary Landfill ■ Fulton County, Arkansas

November 2015 ■ Terracon Project No. 35157094

Terracon

PROFESSIONAL ENGINEER'S CERTIFICATION

"I certify to the best of my professional judgment that the bottom liner system and leachate collection system for Cell B2 of the IESI Cherokee Village Class 1 Landfill (Permit No. 0299-S1) was constructed in accordance with the project specifications, plans, and applicable Arkansas Department of Environmental Quality regulations. This certification is contingent on the fact that all information supplied to the signatory authority, at the time of this certification is unquestionably accurate and was provided in good faith."



David C. McCormick, P.E.

Arkansas Professional Engineer Registration No. 9199



11/25/15
Certification Date

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1.0 INTRODUCTION

This construction quality assurance (CQA) report summarizes testing and documentation activities performed by Terracon Consultants, Inc (Terracon) during the construction of the bottom composite liner system, leachate collection system, and related work associated with Cell B2 at the IESI - Cherokee Sanitary Landfill located near Cherokee Village, Arkansas. On September 1, 2015, Terracon notified the ADEQ, on behalf of IESI - AR, that Cell B2 would be constructed in 2015 (see ADEQ Doc. ID 68057). **FIGURE 1** illustrates the geographic location of the facility.

This document summarizes the earthwork, construction of the subgrade, installation of the geosynthetic clay liner (GCL), geomembrane liner, geosynthetics, leachate collection system, and the protective cover system. Correspondence, details, quality control test results, and certification associated with the construction are also provided. This document, in conjunction with the project record drawings, is intended to satisfy the requirements of Arkansas Regulation 22, Section 22.428 and of Permit No. 0299-S1.

1.1 General

The construction of Cell B2 was conducted in accordance with the following documents:

- *"Construction Bid and Contract Documents – Cell B2 Construction"*, Terracon Consultants, Inc., December, 2014.
- *"Bottom Liner and Final Cover System, Construction Quality Assurance Plan"*, Cherokee Sanitary Landfill", Edwards Engineering, PA, December 1999 (Revised February 2006).
- *"Regulation Number 22, Solid Waste Management Rules"*, Arkansas Pollution Control and Ecology Commission.
- *"Permit for the Construction and Operation of a Solid Waste Disposal Facility"*, Permit No. 0299-S1, AFIN: 25-00028, State of Arkansas Department of Environmental Quality, Solid Waste Management Division.

1.2 Site Description

IESI owns and operates a Class 1 Solid Waste Landfill (Landfill) located near Cherokee Village in Fulton County, Arkansas. The Landfill address is 300 Landfill Road, Cherokee Village, Arkansas. The Landfill has been designed, constructed, and is permitted (Permit No. 0299-S1) by the Arkansas Department of Environmental Quality (ADEQ) to accept all types of Class 1 materials as defined in *Arkansas Regulation 22 (Solid Waste Management)*. **FIGURE 2** illustrates the location and orientation of Cell B2 in relation to the rest of the site.

1.3 Project Description

This project involved the construction and quality assurance/quality control testing of approximately 4.1 acres of composite bottom liner system and tying in to the existing leachate collection system. The following information summarizes the construction sequence associated with the construction of Cell B2.

- Site preparation, excavation to subgrade, and grading of cell area;
- Installation of a geosynthetic clay liner;
- Installation of a 60-mil HDPE textured geomembrane liner;
- Installation of a leachate collection system consisting of double-sided geocomposite drainage layer and chimney drains.
- Installation of a protective cover layer with chimney drains.

The CQA Report is organized using tables, figures, and appendices to provide documentation of the observations and material testing during the construction of Cell B2. Daily project field records are presented in **APPENDIX B**.

As required by Reg.22.428(i) the CQA Report includes record drawings of Cell B2, and the appendices and figures identify the following:

Reg.22.428(i)(1) - The limits of liner or final cover barrier construction;

FIGURE 2 & 3 and the record drawings in **APPENDIX A** depict the limits of the constructed bottom liner system for Cell B2.

Reg.22.428(i)(2) - The top and bottom liner or final cover barrier elevations at 50' intervals referenced to the site grid coordinate system;

APPENDIX A provides the top and bottom elevations of the constructed bottom liner system at 50' intervals referenced to the site grid coordinate system. The top and bottom elevations of the thin (<0.1') GCL/Geomembrane bottom liner system and drainage geocomposite are assumed to be at the elevation of the subgrade.

Reg.22.428(i)(3) - If a granular drainage blanket is utilized in the design, top of blanket elevation should be identified at 50' elevations;

APPENDIX A provides the top and bottom elevations of the constructed drainage layer and protective cover system. A double-sided geocomposite was utilized in place of a granular drainage layer. However, a 12-inch thick protective cover layer with chimney drains was placed on top of the geocomposite layer and was surveyed at 50-foot intervals.

Reg.22.428(i)(4) - The location and elevation of slope breaks, leachate piping, leachate sumps and trenches, berms, and any other features which are material to the disposal area construction;

APPENDIX A provides the required location and elevation information and other features of Cell B2 construction.

Reg.22.428(i)(5) - A key map showing the location of the construction in relation to the permitted design, along with an identification of areas previously constructed and areas yet to be constructed;

FIGURE 2 depicts the limits of the constructed bottom liner system for Cell B2 in relation to the permitted design, along with an identification of areas previously constructed and areas yet to be constructed.

Reg.22.428(i)(6) - Compaction and permeability testing locations;

Field logs in **APPENDIX B and D**, and **FIGURE 3** provide compaction test locations and results for the subgrade of Cell B2. No field permeability testing is required with the use of the geosynthetic clay liner.

Reg.22.428(i)(7) - If necessary to document leachate head level compliance (subsections (a)(2) and (g)(6) of this section), the report should also indicate the lowest point of the liner constructed not including leachate trenches and sumps.

APPENDIX A provides the lowest point of the liner constructed not including leachate trenches and sumps.

Reg.22.428(i)(8) - In addition, the certifying professional shall make a statement that the cell was constructed in accordance with the permit drawings and narrative. The report should also include a list of any deviations from the permitted drawings, if they exist, and reasons for the deviations.

Cell B2 was constructed as close as possible and in accordance with the permit drawings and narrative and the plans and specifications. Construction variances and/or deviations are documented in Section 5.0

1.4 Key Personnel

Twehous was contracted to perform the earthwork for the project including excavation and/or fill to subgrade, installation of the leachate collection system, placement of protective cover, and the other improvements at the site. Installation of the Geosynthetic clay liner, HDPE liner, and the geocomposite was contracted to Comanco. The key personnel for each participating firm and suppliers in the project are listed below.

- **Owner:**
IESI - AR
 - Brady Stewart, Regional Engineer
 - Ronnie Black, Sr., Landfill Manager

- **CQA Consultant:**
Terracon Consultants, Inc.
 - Certifying Engineer: David C. McCormick, P.E.
 - CQA Monitors: Chris Brimhall, Adam Zimmerman, Paul Gramling & Wes Williams

- **Soils Contractor:**
Twehous
 - General Manager: Jim Dallas
 - Site Superintendent: Sam Wekenborg

- **Soil Testing Laboratory:**
Terracon (Cincinnati, Ohio)
 - Laboratory Manager: Tim Goodall
Terracon (Little Rock, Arkansas)
 - Laboratory Manager: Jennifer Harmon

- **Survey Control:**
Dodd Harmon Surveying
 - Project Manager: Dodd Harmon, RLS

- **Geosynthetic Testing Laboratory:**
TRI Environmental
 - Project Manager: Jennifer Tenney

- **Geosynthetics Contractor:**
Comanco.
 - Project Manager: Matt Remmert
 - Site Superintendent: Thomas Terry

2.0 SUBGRADE PREPARATION

This section summarizes the excavation and establishment of the subgrade surface corresponding to the permitted design for Cell B2. The bottom grading plan conforms to the approved permit plans.

2.1 Project Specifications

The project specifications called for the subgrade to be established to the lines and grades shown on the project construction plans. Following excavation, the subgrade surface was smooth graded and rolled, to ensure that a suitable foundation was established.

2.2 Construction Procedures

The subgrade preparation and excavation and/or fill for placement of the geosynthetic clay liner associated with the bottom liner system occurred during September of 2015. During this period the construction consisted of excavation of the native clays and silts to the new sub-grade surface and density testing of the top of subgrade. The elevations associated with the subgrade surface established are provided in **APPENDIX A**.

2.3 Subgrade Testing

The subgrade was compacted to a minimum 95% of the Standard Proctor maximum dry density as verified by a Terracon soils technician. **FIGURE 3** illustrates the locations of the field moisture and density tests for the subgrade. **APPENDIX C** provides pre-construction and construction test results, respectively, for the subgrade material. **APPENDIX D** includes the field logs for the moisture/density testing performed in association with the Cell B2 subgrade construction.

3.0 GEOSYNTHETIC LINER INSTALLATION

Installation of the geosynthetics for the bottom liner system of Cell B2 occurred during November of 2015. Approximately 185,250 square feet of GCL, 60-mil textured HDPE geomembrane liner, and 6-ounce double-sided geocomposite were placed in Cell B2. The geosynthetics installer information for Comanco is provided in **APPENDIX F**.

3.1 Manufacturer's Quality Control Certificates

Manufacturer's Quality Control Certificates were submitted for comparison of the delivered material properties with the project specifications. Copies of the Manufacturer's certificates for the GCL are provided in **APPENDIX G**. The manufacturer's certificates for the geomembrane are provided in **APPENDIX I**. The manufacturer's certificates for the geocomposite are provided in **APPENDIX S**. An inventory of the geomembrane, geocomposite, and geotextile used at the site is included in **APPENDIX K**. Based upon the manufacturer's quality control certificates, the supplied materials comply with the project specifications.

3.2 Material Conformance Testing

A copy of the laboratory conformance test results on the GCL is included in **APPENDIX H**, the laboratory conformance test results on the geomembrane is included in **APPENDIX J**, and a copy of the laboratory conformance test results on the geocomposite is included in **APPENDIX T**. Based upon the results of the conformance testing by TRI, the GCL, geomembrane, and geocomposite supplied comply with the project specifications. **APPENDIX E** includes interface friction test reports between the GCL and 60 mil textured geomembrane. The material exceeded the necessary friction angle requirements.

3.3 Deployment of Geosynthetics

Prior to the deployment of the GCL and geomembrane, the Comanco field manager and the CQA monitor accepted the subgrade. A copies of the subgrade acceptance forms are included in **APPENDIX M**.

Deployment of the GCL and geomembrane panels was accomplished by use of an ATV, Sky Track, and manual labor to transport each panel into place. A Terracon field representative monitored the deployment of panels. GCL placement was observed for the correct overlap and placement of bentonite powder between all seams. The GCL was covered by geomembrane each day. The daily deployment logs for the geomembrane can be found in **APPENDIX N**. A panel layout of the bottom liner system for Cell B2 is illustrated on the record drawing located in **APPENDIX A**.

Terracon field representatives reviewed each panel and noted any manufacturing and deployment defects for repair. The panels were anchored temporarily with sandbags to prevent wind damage. The panels were permanently anchored at the top of the slopes by anchor trenches filled with compacted clay. An overbuild area with a 40-mil HDPE rain flap was constructed on the south and west side of Cell B2 to allow for future cell expansion. Also, a temporary rain flap was installed in the middle of the cell (**APPENDIX A, SHEET 1**).

3.4 Geomembrane Trial Seam Monitoring

Prior to startup of each seaming period (in the morning and after lunch), the fusion and extrusion welder operators were required to prepare a trial seam. The seams were tested in the field on a gauged tensiometer to check for machine failures or operator errors. **APPENDIX L** contains the calibration certificate for the geosynthetic installation field tensiometer. If the tests passed (in peel and in shear), the operator was then allowed to begin seaming. Trial seam logs are presented in **APPENDIX O**. The seams were checked for peel and shear. The coupons were required to exhibit a film tear bond (FTB) and to meet the project specifications for peel and shear strength in order to be acceptable.

3.5 Geomembrane Seam Monitoring

The primary seaming method used for joining geomembrane panels was through an automated double track fusion welder. Extrusion welding was used for patches, repairs, intersections of fusion seams, and seam reconstruction. Monitoring of the seaming methods consisted of periodic visual observation of the seaming process, visual examination of the completed seam, and verification that the seam was welded for its entire length. **APPENDIX P** presents a summary of the panel seaming. Seaming imperfections were marked and subsequently repaired in accordance with the project CQA plan. The geomembrane panel layouts showing seam locations are presented on the record drawing **SHEET 2** in **APPENDIX A**.

3.6 Non-Destructive Seam Testing and Repair Monitoring

Seams, seam repairs, and patches were non-destructively tested by the installer using an air pressure test for fusion welds or vacuum box techniques for extrusion welds. Terracon field CQA personnel monitored and documented field testing of the seams to ensure that the tests were performed in accordance with the project CQA plan. Summaries of the geomembrane integrity testing are presented in **APPENDIX P**. The location, size, and testing results of seam repairs and patches were documented. Copies of this documentation can be found in **APPENDIX R**.

3.7 DESTRUCTIVE SEAM STRENGTH TESTING

Each destructive sample was divided into three sections: a sample for field testing, a sample for laboratory testing, and an archive sample. Prior to sending the samples to TRI Environmental, Inc. (TRI), they were tested in the field for peel and shear by Comanco using a gauged tensiometer. Summaries for the field destructive sampling and laboratory testing for peel and shear are located in **APPENDIX Q**. Destructive samples were obtained at a minimum frequency of one sample per 500 linear feet of production seam length. The destructive test locations are noted on the record drawing **SHEET 2** located in **APPENDIX A**. Based on the results of the seam peel and shear testing performed by Comanco and TRI, each seam complies with the project specifications.

4.0 LEACHATE COLLECTION SYSTEM AND PROTECTIVE COVER

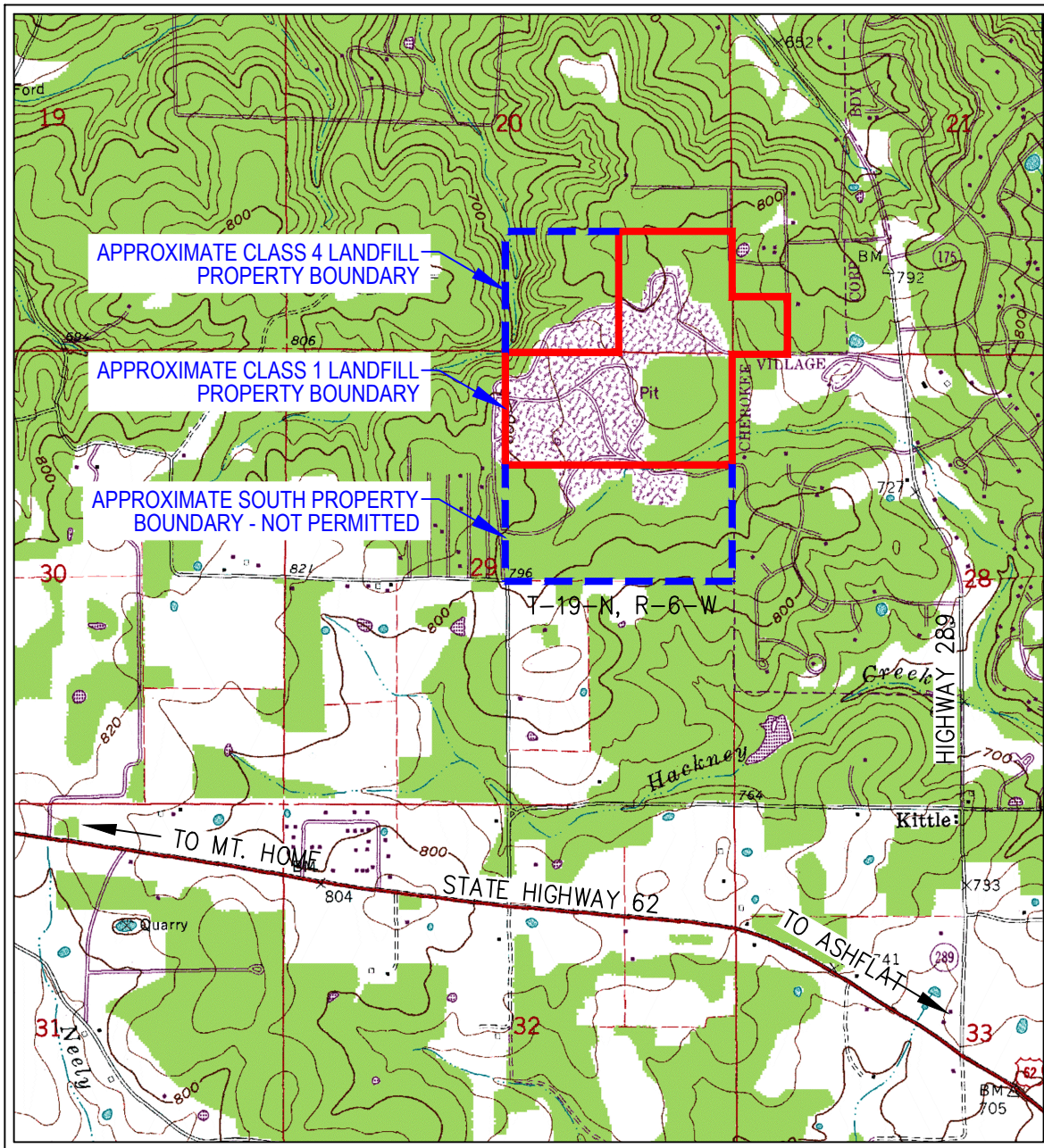
The leachate collection system consists of a geocomposite drainage layer overlying the HDPE liner and gravel chimney drains spaced 200-ft apart with a minimum of a two-percent slope to a leachate collection trench in the center of the cell.

4.1 Protective Cover Soil

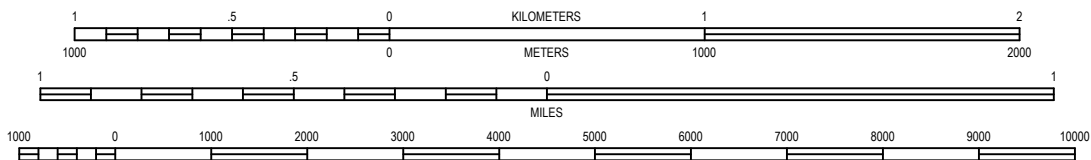
A 12-inch (min) thick protective cover layer was placed on top of the geocomposite on the bottom and side slope of Cell B2. Chimney drains were placed in the protective cover (See Record drawings in **APPENDIX A**). Material test results of the gravel and geotextile used in the chimney drains are in **APPENDIX U**. The survey record drawing provided in **APPENDIX A** illustrates the top of the protective cover layer and location of the chimney drains. The layer was placed using low ground pressure dozers while maintaining a 12-inch thick minimum working surface to ensure protection of the underlying geosynthetic liner.

5.0 CONSTRUCTION VARIANCES

The geomembrane meets the current specifications with the exception of tensile strength at break, and elongation at break. As per Table 4 of the CQA Plan, these parameters are to be tested in accordance with ASTM D638. However, current industry standards no longer rely on this method. The manufacturers and testing laboratories use the currently accepted ASTM 6693, Type 4 and GRI-GM13 method to evaluate the tensile strength and elongation. The CQA Certifying Engineer compared the quality control data provided with the currently accepted industry standards and found the results to be acceptable. Conformance testing of the geomembrane was performed in this same manner and found to be acceptable.



SCALE 1:24 000



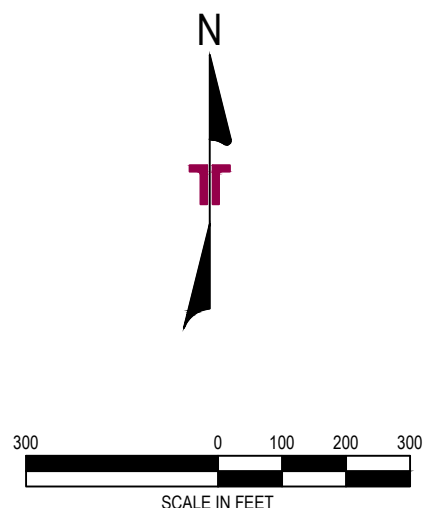
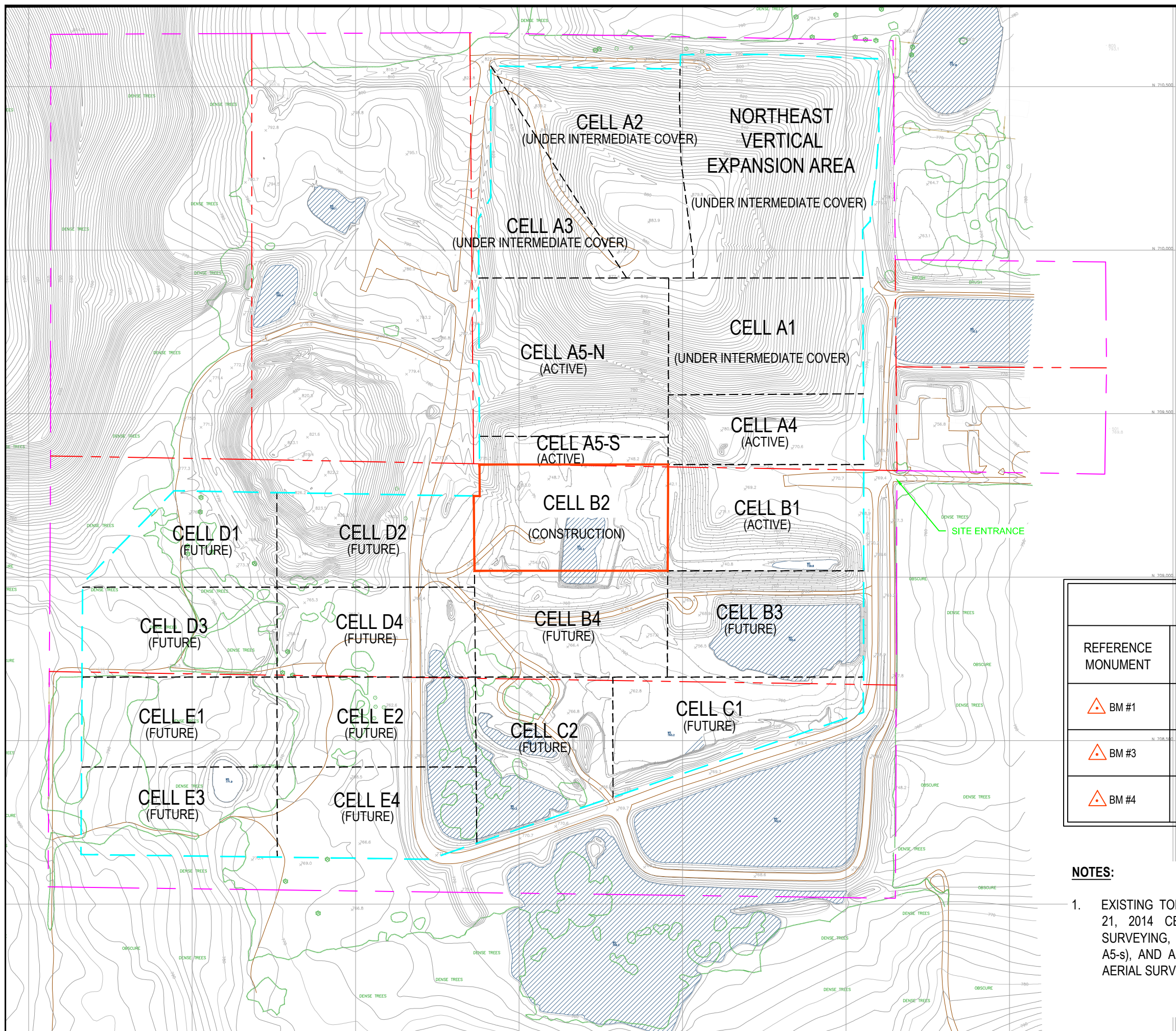
CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

AGNOS, AR
QUADRANGLE
1981

7.5 MINUTE SERIES (TOPOGRAPHIC)



Project Mngr: DCM Drawn By: TLB Checked By: DCM Approved By: FOC	Project No. 065-001-35157094 Scale: AS SHOWN File No. 003 Date: 11/18/2015	Terracon Consulting Engineers and Scientists 25809 I-30 SOUTH BRYANT, AR 72022 PH. (501) 847-9292 FAX. (501) 847-9210	SITE LOCATION MAP CONSTRUCTION QUALITY ASSURANCE - CELL B2 IESI-AR LANDFILL CORPORATION 300 LANDFILL ROAD CHEROKEE VILLAGE ARKANSAS	FIG. No. 1
--	--	--	---	--------------------------



REFERENCE MONUMENT	COORDINATE NORTHING & EASTING	ELEVATION (FMSL)
 BM #1	N 710629.728 E 1419132.414	781.92
 BM #3	N 710633.672 E 1417363.579	807.42
 BM #4	N 709325.938 E 1419155.807	762.97

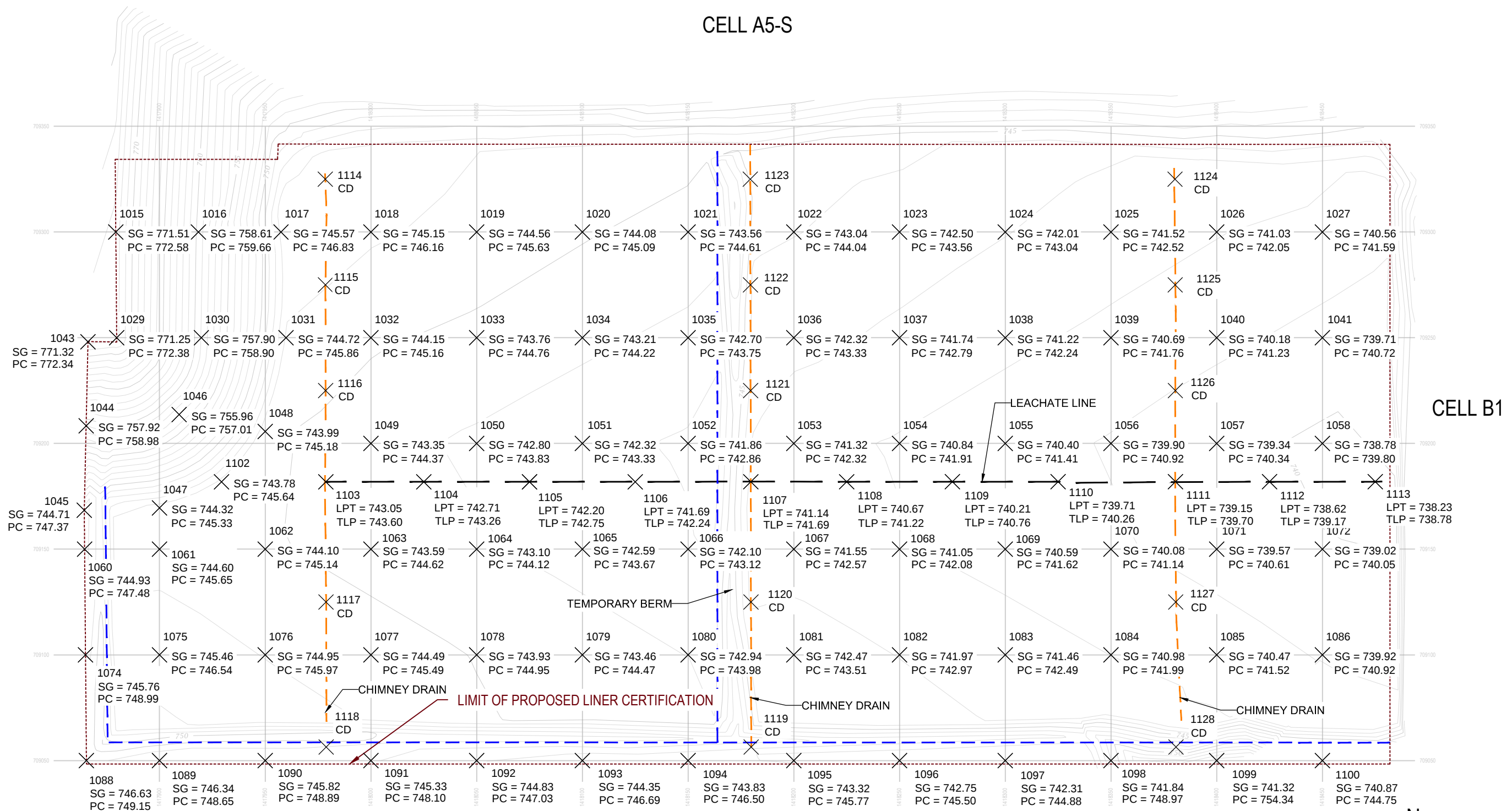
NOTES:

1. EXISTING TOPOGRAPHY IS COMPRISED OF A NOVEMBER 21, 2014 CELL A5-s AS-BUILT SURVEY BY HARMON SURVEYING, INC. (IN THE IMMEDIATE VICINITY OF CELL A5-s), AND A JUNE 19, 2014 AERIAL SURVEY BY DALLAS AERIAL SURVEYS, INC (THE REMAINDER OF THE SITE).

[illegible]

APPENDIX A RECORD DRAWINGS

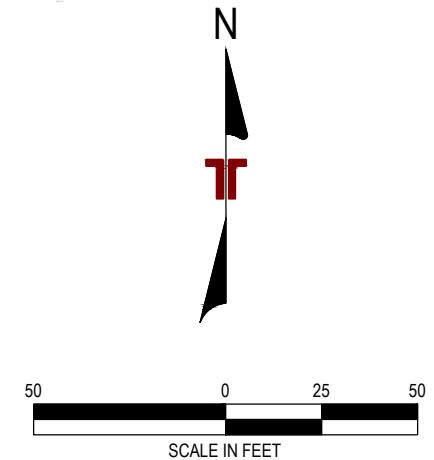
CELL A5-S



LEGEND:

SG = TOP OF SUBGRADE
 PC = TOP OF PROTECTIVE COVER
 CD = CHIMNEY DRAIN
 LPT = LEACHATE PIPE TRENCH
 TLP = TOP OF LEACHATE PIPE
 — — — RAINFLAP

NOTES:
AS-BUILT SURVEY WAS PROVIDED BY HARMON
SURVEYING, INC.



SHEET 1	DESIGNED BY:	TLB
	DRAWN BY:	TLB
	APPVD. BY:	DOM
	SCALE:	1" = 50'
	DATE:	11/20/2015
	JOB NO.	065-001-35157/094
ACAD NO.	005	
SHEET NO.:	1	OF 2

AS-BUILT SURVEY
CELL B2 IESI - AR LANDFILL CORPORATION CHEROKEE CLASS 1 SANITARY LANDFILL CHEROKEE VILLAGE ARKANSAS

Terracon
Consulting Engineers and Scientists

25809 I-30 SOUTH
PH. (501) 847-9292

BRYANT, AR 72022
FAX. (501) 847-9210

[illegible]

APPENDIX B

DAILY PROJECT FIELD RECORDS

Daily Project Construction Summary

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Project No: 35157094
Date of Report: 9/17/2015
Client Name: IESI AR Landfill Cooperation
Contractor: Twehouse
Project Name: Cell B2
Location: Cherokee Village, AR 72529
Representative: David McCormick, P.E.
Technician: Chris Brimhall
Test Location: Cell B2

WEATHER:

☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>67</u> Low Temp. (°F)
☐ Foggy / Misty	<u>89</u> High Temp. (°F)

REPORTING TIMES:

Depart Lab: <u>7:00 AM</u>	Depart Site: <u>2:00 PM</u>
Arrive Site: <u>10:00 AM</u>	Arrive Lab: <u>5:30 PM</u>

FIELD TESTING PERFORMED:

☐ Moisture/Density	☒ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

EQUIPMENT ONSITE:

<u>1</u> Dozer(s)	_____ Tractor & Pans
_____ Excavator(s)	_____ Skidsteer
_____ Backhoe(s)	_____ Water Truck
_____ Haul Truck(s)	_____ Sheeps Foot Compactor
_____ Motor Grader(s)	<u>1</u> Smooth Drum Compactor

PERSONNEL ONSITE:

_____ Client	_____ Liner Crew
<u>6</u> Contractor	_____ Liner Installer
<u>1</u> CQA Consultant	_____ Concrete Crew
_____ Design Engineer	_____ Pipe Installer
_____ Surveyor	_____ Gas Line Inst.

SUMMARY OF ACTIVITIES OBSERVED:

CQA Technician performed 29 Moisture/Density tests on the top of subgrade.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>47</u> Low Temp. (°F)
☐ Foggy / Misty	<u>78</u> High Temp. (°F)

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

Client	Liner Crew
6 Contractor	Liner Installer
1 CQA Consultant	Concrete Crew
Design Engineer	Pipe Installer
Surveyor	Gas Line Inst.

Twehous exposed the geomembrant tie in to cell A5-S. Prepared subgrade for deployment of geomembrane.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Daily Project Construction Summary

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Project No: 35157094
Date of Report: 10/14/2015
Client Name: IESI AR Landfill Cooperation
Contractor: Twehouse
Project Name: Cell B2
Location: Cherokee Village, AR 72529
Representative: David McCormick, P.E.
Technician: Adam Zimmerman
Test Location: Cell B2

WEATHER:

☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>48</u> Low Temp. (°F)
☐ Foggy / Misty	<u>88</u> High Temp. (°F)

REPORTING TIMES:

Depart Lab: <u>6:30 AM</u>	Depart Site: <u>5:30 PM</u>
Arrive Site: <u>7:00 AM</u>	Arrive Lab: <u>6:00 PM</u>

FIELD TESTING PERFORMED:

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

EQUIPMENT ONSITE:

<u> </u> Dozer(s)	<u> </u> Tractor & Pans
<u> </u> Excavator(s)	<u> 1 </u> Skidsteer
<u> </u> Backhoe(s)	<u> </u> Water Truck
<u> </u> Haul Truck(s)	<u> </u> Sheeps Foot Compactor
<u> </u> Motor Grader(s)	<u> </u> Smooth Drum Compactor

PERSONNEL ONSITE:

<u> </u> Client	<u> 10 </u> Liner Crew
<u> </u> Contractor	<u> </u> Liner Installer
<u> 1 </u> CQA Consultant	<u> </u> Concrete Crew
<u> </u> Design Engineer	<u> </u> Pipe Installer
<u> </u> Surveyor	<u> </u> Gas Line Inst.

SUMMARY OF ACTIVITIES OBSERVED:

Comanco deployed Panels P1 - P6

Performed trial welds

Non destructively tested seams

Marked Destructs 1-4

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☐ Warm
☐ Raining	☒ Hot
☐ Windy	<u>52</u> Low Temp. (°F)
☐ Foggy / Misty	<u>90</u> High Temp. (°F)

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

Client	10	Liner Crew
Contractor		Liner Installer
1 CQA Consultant		Concrete Crew
Design Engineer		Pipe Installer
Surveyor		Gas Line Inst.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>45</u> Low Temp. (°F)
☐ Foggy / Misty	<u>69</u> High Temp. (°F)

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

Client	10	Liner Crew
Contractor		Liner Installer
1 CQA Consultant		Concrete Crew
Design Engineer		Pipe Installer
Surveyor		Gas Line Inst.

Comanco deployed Panels P12 - P24
Performed trial welds
Non destructively tested seams
Marked Destructs 6 - 10

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☐ Clear	☐ Cold
☐ Cloudy	☐ Cool
☒ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>40</u> Low Temp. (°F)
☐ Foggy / Misty	<u>65</u> High Temp. (°F)

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

_____	Client	<u>10</u>	Liner Crew
_____	Contractor	_____	Liner Installer
<u>1</u>	CQA Consultant	_____	Concrete Crew
_____	Design Engineer	_____	Pipe Installer
_____	Surveyor	_____	Gas Line Inst.

Comanco deployed Panels P25 - P36
Performed trial welds
Non destructively tested seams
Marked Destructs 11-13
Made repairs to liner

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>45</u> Low Temp. (°F)
☐ Foggy / Misty	<u>74</u> High Temp. (°F)

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

Client	10	Liner Crew
Contractor		Liner Installer
1 CQA Consultant		Concrete Crew
Design Engineer		Pipe Installer
Surveyor		Gas Line Inst.

Comanco deployed Panels P37 - P38
Performed trial welds
Non destructively tested seams
Made repairs to liner

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>47</u> Low Temp. (°F)
☐ Foggy / Misty	<u>78</u> High Temp. (°F)

FIELD TESTING PERFORMED:

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

PERSONNEL ONSITE:

Client	<u>10</u>	Liner Crew
Contractor		Liner Installer
<u>1</u> CQA Consultant		Concrete Crew
Design Engineer		Pipe Installer
Surveyor		Gas Line Inst.

[illegible]

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☐ Clear	☐ Cold
☐ Cloudy	☐ Cool
☒ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>51</u> Low Temp. (°F)
☐ Foggy / Misty	<u>83</u> High Temp. (°F)

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

_____ Client	<u>10</u> Liner Crew
_____ Contractor	_____ Liner Installer
<u>1</u> CQA Consultant	_____ Concrete Crew
_____ Design Engineer	_____ Pipe Installer
_____ Surveyor	_____ Gas Line Inst.

Comanco deployed Panels P64 - P68
Performed trial welds
Non destructively tested seams
Marked Destruct 21
Made repairs to liner

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Daily Project Construction Summary

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Project No: 35157094
Date of Report: 10/22/2015
Client Name: IESI AR Landfill Cooperation
Contractor: Twehouse
Project Name: Cell B2
Location: Cherokee Village, AR 72529
Representative: David McCormick, P.E.
Technician: Adam Zimmerman
Test Location: Cell B2

WEATHER:

☐ Clear	☐ Cold
☐ Cloudy	☐ Cool
☒ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>54</u> Low Temp. (°F)
☐ Foggy / Misty	<u>80</u> High Temp. (°F)

REPORTING TIMES:

Depart Lab: <u>6:30 AM</u>	Depart Site: <u>5:30 PM</u>
Arrive Site: <u>7:00 AM</u>	Arrive Lab: <u>6:00 PM</u>

FIELD TESTING PERFORMED:

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

EQUIPMENT ONSITE:

<u> </u> Dozer(s)	<u> </u> Tractor & Pans
<u> </u> Excavator(s)	<u> 1 </u> Skidsteer
<u> </u> Backhoe(s)	<u> </u> Water Truck
<u> </u> Haul Truck(s)	<u> </u> Sheeps Foot Compactor
<u> </u> Motor Grader(s)	<u> </u> Smooth Drum Compactor

PERSONNEL ONSITE:

<u> </u> Client	<u> 10 </u> Liner Crew
<u> </u> Contractor	<u> </u> Liner Installer
<u> 1 </u> CQA Consultant	<u> </u> Concrete Crew
<u> </u> Design Engineer	<u> </u> Pipe Installer
<u> </u> Surveyor	<u> </u> Gas Line Inst.

SUMMARY OF ACTIVITIES OBSERVED:

Comanco deployed Panels P69 - P72
Performed trial welds
Non destructively tested seams
Marked Destructs 22 - 23
Made repairs to liner

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Daily Project Construction Summary

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Project No: 35157094
Date of Report: 10/24/2015
Client Name: IESI AR Landfill Cooperation
Contractor: Twehouse
Project Name: Cell B2
Location: Cherokee Village, AR 72529
Representative: David McCormick, P.E.
Technician: Wes Williams
Test Location: Cell B2

WEATHER:

☐ Clear	☐ Cold
☒ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>55</u> Low Temp. (°F)
☐ Foggy / Misty	<u>67</u> High Temp. (°F)

REPORTING TIMES:

Depart Lab: <u>6:30 AM</u>	Depart Site: <u>5:30 PM</u>
Arrive Site: <u>7:00 AM</u>	Arrive Lab: <u>6:00 PM</u>

FIELD TESTING PERFORMED:

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

EQUIPMENT ONSITE:

<u> </u> Dozer(s)	<u> </u> Tractor & Pans
<u> </u> Excavator(s)	<u> 1 </u> Skidsteer
<u> </u> Backhoe(s)	<u> </u> Water Truck
<u> </u> Haul Truck(s)	<u> </u> Sheeps Foot Compactor
<u> </u> Motor Grader(s)	<u> </u> Smooth Drum Compactor

PERSONNEL ONSITE:

<u> </u> Client	<u> 10 </u> Liner Crew
<u> </u> Contractor	<u> </u> Liner Installer
<u> 1 </u> CQA Consultant	<u> </u> Concrete Crew
<u> </u> Design Engineer	<u> </u> Pipe Installer
<u> </u> Surveyor	<u> </u> Gas Line Inst.

SUMMARY OF ACTIVITIES OBSERVED:

Performed trial welds
Nondestructively tested repairs
Installed double-sided geocomposite

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☐ Clear	☐ Cold
☒ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>51</u> Low Temp. (°F)
☐ Foggy / Misty	<u>65</u> High Temp. (°F)

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

_____ Client	<u>10</u> Liner Crew
_____ Contractor	_____ Liner Installer
<u>1</u> CQA Consultant	_____ Concrete Crew
_____ Design Engineer	_____ Pipe Installer
_____ Surveyor	_____ Gas Line Inst.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☐ Clear	☐ Cold
☒ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>50</u> Low Temp. (°F)
☐ Foggy / Misty	<u>67</u> High Temp. (°F)

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

_____ Client	<u>10</u> Liner Crew
_____ Contractor	_____ Liner Installer
<u>1</u> CQA Consultant	_____ Concrete Crew
_____ Design Engineer	_____ Pipe Installer
_____ Surveyor	_____ Gas Line Inst.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>43</u> Low Temp. (°F)
☐ Foggy / Misty	<u>64</u> High Temp. (°F)

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

Client	10	Liner Crew
Contractor		Liner Installer
1 CQA Consultant		Concrete Crew
Design Engineer		Pipe Installer
Surveyor		Gas Line Inst.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>52</u> Low Temp. (°F)
☐ Foggy / Misty	<u>66</u> High Temp. (°F)

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

Client	Liner Crew
6 Contractor	Liner Installer
1 CQA Consultant	Concrete Crew
Design Engineer	Pipe Installer
Surveyor	Gas Line Inst.

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Daily Project Construction Summary

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Project No: 35157094
Date of Report: 11/3/2015
Client Name: IESI AR Landfill Cooperation
Contractor: Twehouse
Project Name: Cell B2
Location: Cherokee Village, AR 72529
Representative: David McCormick, P.E.
Technician: Paul Gramling
Test Location: Cell B2

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>52</u> Low Temp. (°F)
☐ Foggy / Misty	<u>63</u> High Temp. (°F)

REPORTING TIMES:	
Depart Lab: <u>6:30 AM</u>	Depart Site: <u>5:30 PM</u>
Arrive Site: <u>7:00 AM</u>	Arrive Lab: <u>6:00 PM</u>

FIELD TESTING PERFORMED:	
☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

EQUIPMENT ONSITE:	
<u>1</u> Dozer(s)	<u> </u> Tractor & Pans
<u>1</u> Excavator(s)	<u>1</u> Skidsteer
<u> </u> Backhoe(s)	<u> </u> Water Truck
<u>1</u> Haul Truck(s)	<u> </u> Sheeps Foot Compactor
<u> </u> Motor Grader(s)	<u> </u> Smooth Drum Compactor

PERSONNEL ONSITE:	
<u> </u> Client	<u> </u> Liner Crew
<u>6</u> Contractor	<u> </u> Liner Installer
<u>1</u> CQA Consultant	<u> </u> Concrete Crew
<u> </u> Design Engineer	<u> </u> Pipe Installer
<u> </u> Surveyor	<u> </u> Gas Line Inst.

SUMMARY OF ACTIVITIES OBSERVED:

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Daily Project Construction Summary

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Project No: 35157094
Date of Report: 11/4/2015
Client Name: IESI AR Landfill Cooperation
Contractor: Twehouse
Project Name: Cell B2
Location: Cherokee Village, AR 72529
Representative: David McCormick, P.E.
Technician: Paul Gramling
Test Location: Cell B2

WEATHER:

☐ Clear	☐ Cold
☒ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>57</u> Low Temp. (°F)
☐ Foggy / Misty	<u>69</u> High Temp. (°F)

REPORTING TIMES:

Depart Lab: <u>6:30 AM</u>	Depart Site: <u>5:30 PM</u>
Arrive Site: <u>7:00 AM</u>	Arrive Lab: <u>6:00 PM</u>

FIELD TESTING PERFORMED:

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

EQUIPMENT ONSITE:

<u>1</u> Dozer(s)	<u> </u> Tractor & Pans
<u>1</u> Excavator(s)	<u>1</u> Skidsteer
<u> </u> Backhoe(s)	<u> </u> Water Truck
<u>1</u> Haul Truck(s)	<u> </u> Sheeps Foot Compactor
<u> </u> Motor Grader(s)	<u> </u> Smooth Drum Compactor

PERSONNEL ONSITE:

<u> </u> Client	<u> </u> Liner Crew
<u>6</u> Contractor	<u> </u> Liner Installer
<u>1</u> CQA Consultant	<u> </u> Concrete Crew
<u> </u> Design Engineer	<u> </u> Pipe Installer
<u> </u> Surveyor	<u> </u> Gas Line Inst.

SUMMARY OF ACTIVITIES OBSERVED:

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☐ Clear	☐ Cold
☒ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☒ Raining	☐ Hot
☐ Windy	<u>59</u> Low Temp. (°F)
☐ Foggy / Misty	<u>66</u> High Temp. (°F)

FIELD TESTING PERFORMED:

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

PERSONNEL ONSITE:

Client	Liner Crew
6 Contractor	Liner Installer
1 CQA Consultant	Concrete Crew
Design Engineer	Pipe Installer
Surveyor	Gas Line Inst.

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☐ Clear	☐ Cold
☒ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>51</u> Low Temp. (°F)
☐ Foggy / Misty	<u>65</u> High Temp. (°F)

FIELD TESTING PERFORMED:

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

PERSONNEL ONSITE:

Client	Liner Crew
6 Contractor	Liner Installer
1 CQA Consultant	Concrete Crew
Design Engineer	Pipe Installer
Surveyor	Gas Line Inst.

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>33</u> Low Temp. (°F)
☐ Foggy / Misty	<u>63</u> High Temp. (°F)

FIELD TESTING PERFORMED:

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

PERSONNEL ONSITE:

Client	Liner Crew
6 Contractor	Liner Installer
1 CQA Consultant	Concrete Crew
Design Engineer	Pipe Installer
Surveyor	Gas Line Inst.

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☐ Clear	☐ Cold
☐ Cloudy	☐ Cool
☒ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>37</u> Low Temp. (°F)
☐ Foggy / Misty	<u>70</u> High Temp. (°F)

FIELD TESTING PERFORMED:

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

PERSONNEL ONSITE:

Client	Liner Crew
6 Contractor	Liner Installer
1 CQA Consultant	Concrete Crew
Design Engineer	Pipe Installer
Surveyor	Gas Line Inst.

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Daily Project Construction Summary

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Project No: 35157094
Date of Report: 11/11/2015
Client Name: IESI AR Landfill Cooperation
Contractor: Twehouse
Project Name: Cell B2
Location: Cherokee Village, AR 72529
Representative: David McCormick, P.E.
Technician: Paul Gramling
Test Location: Cell B2

WEATHER:

☐ Clear	☐ Cold
☒ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>53</u> Low Temp. (°F)
☐ Foggy / Misty	<u>66</u> High Temp. (°F)

REPORTING TIMES:

Depart Lab: <u>6:30 AM</u>	Depart Site: <u>5:30 PM</u>
Arrive Site: <u>7:00 AM</u>	Arrive Lab: <u>6:00 PM</u>

FIELD TESTING PERFORMED:

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

EQUIPMENT ONSITE:

<u>1</u> Dozer(s)	<u> </u> Tractor & Pans
<u>1</u> Excavator(s)	<u>1</u> Skidsteer
<u> </u> Backhoe(s)	<u> </u> Water Truck
<u>1</u> Haul Truck(s)	<u> </u> Sheeps Foot Compactor
<u> </u> Motor Grader(s)	<u> </u> Smooth Drum Compactor

PERSONNEL ONSITE:

<u> </u> Client	<u> </u> Liner Crew
<u>6</u> Contractor	<u> </u> Liner Installer
<u>1</u> CQA Consultant	<u> </u> Concrete Crew
<u> </u> Design Engineer	<u> </u> Pipe Installer
<u> </u> Surveyor	<u> </u> Gas Line Inst.

SUMMARY OF ACTIVITIES OBSERVED:

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Daily Project Construction Summary

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Project No: 35157094
Date of Report: 11/12/2015
Client Name: IESI AR Landfill Cooperation
Contractor: Twehouse
Project Name: Cell B2
Location: Cherokee Village, AR 72529
Representative: David McCormick, P.E.
Technician: Paul Gramling
Test Location: Cell B2

WEATHER:

☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>41</u> Low Temp. (°F)
☐ Foggy / Misty	<u>63</u> High Temp. (°F)

REPORTING TIMES:

Depart Lab: <u>6:30 AM</u>	Depart Site: <u>5:30 PM</u>
Arrive Site: <u>7:00 AM</u>	Arrive Lab: <u>6:00 PM</u>

FIELD TESTING PERFORMED:

☐ Moisture/Density	☐ Subgrade
☐ Shelby Tube(s)	☐ Clay Liner

EQUIPMENT ONSITE:

<u>1</u> Dozer(s)	<u> </u> Tractor & Pans
<u>1</u> Excavator(s)	<u>1</u> Skidsteer
<u> </u> Backhoe(s)	<u> </u> Water Truck
<u>1</u> Haul Truck(s)	<u> </u> Sheeps Foot Compactor
<u> </u> Motor Grader(s)	<u> </u> Smooth Drum Compactor

PERSONNEL ONSITE:

<u> </u> Client	<u> </u> Liner Crew
<u>6</u> Contractor	<u> </u> Liner Installer
<u>1</u> CQA Consultant	<u> </u> Concrete Crew
<u> </u> Design Engineer	<u> </u> Pipe Installer
<u> </u> Surveyor	<u> </u> Gas Line Inst.

SUMMARY OF ACTIVITIES OBSERVED:

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

WEATHER:	
☒ Clear	☐ Cold
☐ Cloudy	☐ Cool
☐ Partly Cloudy	☒ Warm
☐ Raining	☐ Hot
☐ Windy	<u>35</u> Low Temp. (°F)
☐ Foggy / Misty	<u>64</u> High Temp. (°F)

FIELD TESTING PERFORMED:

☐	Moisture/Density	☐	Subgrade
☐	Shelby Tube(s)	☐	Clay Liner

PERSONNEL ONSITE:

Client	Liner Crew
6 Contractor	Liner Installer
1 CQA Consultant	Concrete Crew
Design Engineer	Pipe Installer
Surveyor	Gas Line Inst.

Twehous placed protective cover and installed chimney drains.

Note: Copies of all completed "Project Field Record Forms" are to be submitted to the Project Manager at the end of each day and should be maintained with the Project Records.

APPENDIX C

PRE-CONSTRUCTION & CONSTRUCTION TESTING

LABORATORY COMPACTION CHARACTERISTICS OF SOIL REPORT

Terracon

Report Number: 35157094.0001

Service Date: 09/02/15

Report Date: 09/11/15

25809 I-30 South

Bryant, AR 72022

501-847-9292

Client

IESI-AR Landfill Corporation
Attn: Brady Stewart
100 Landfill Rd
Cherokee Village, AR 72529

Project

Cherokee Village - Cell B2 CQA
Cherokee Village Landfill
Cherokee Village, AR

Project Number 35157094

Material Information

Source of Material: Cell B2 footprint
Proposed Use: subgrade

Sample Information

Sample Date: 08/31/15
Sampled By: McCormick, David
Sample Location: Cell B2

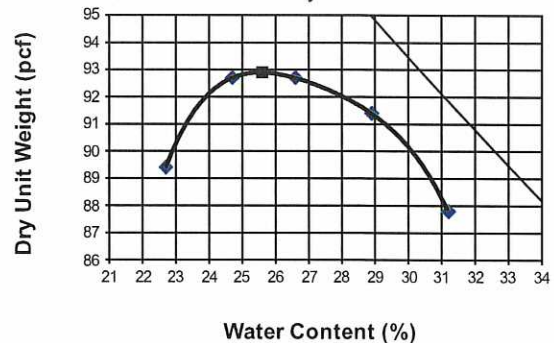
Sample Description: SG-1-Fat Clay with Sand

Laboratory Test Data

Test Procedure: ASTM D698
Test Method: Method A
Sample Preparation: Wet
Rammer Type: Manual
Maximum Dry Unit Weight (pcf): 92.9
Optimum Water Content (%): 25.6

	Result	Specifications
Liquid Limit:	59	
Plastic Limit:	25	
Plasticity Index:	34	
In-Place Moisture (%):		
Passing #4 (%):	94.0	
Passing #200 (%):	83.0	
USCS:	CH	

Zero Air Voids Curve for Assumed Specific Gravity 2.70



Comments:

Services: Moisture-Density Relations

Terracon Rep.: Shawn Young

Reported To:

Contractor:

Report Distribution:

(1) Terracon Consultants, Inc., Emailed

Reviewed By:

David McCormick
McCormick, David

Test Methods: AASHTO T99

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL REPORT

Report Number: 35157094.0001
Service Date: 09/02/15
Report Date: 09/11/15

Terracon

25809 I-30 South
Bryant, AR 72022
501-847-9292

Client

IESI-AR Landfill Corporation
Attn: Brady Stewart
100 Landfill Rd
Cherokee Village, AR 72529

Project

Cherokee Village - Cell B2 CQA
Cherokee Village Landfill
Cherokee Village, AR

Project Number: 35157094

Sieve Analysis	
Sieve Size (Inches)	Percent Passing (%)
3"	100
1 1/2"	100
1"	100
3/4"	100
3/8"	97
#4	94
#10	91
#40	88
#200	83.3

Services: Moisture-Density Relations

Terracon Rep.: Shawn Young

Reported To:

Contractor:

Report Distribution:

(1) Terracon Consultants, Inc., Emailed

Started

Finished:

Reviewed By:


McCormick, David

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL REPORT

Terracon

Report Number: 35157094.0002

Service Date: 09/12/15

Report Date: 09/22/15

25809 I-30 South

Bryant, AR 72022

501-847-9292

Client

IESI-AR Landfill Corporation

Attn: Brady Stewart

100 Landfill Rd

Cherokee Village, AR 72529

Project

Cherokee Village - Cell B2 CQA

Cherokee Village Landfill

Cherokee Village, AR

Project Number 35157094

Material Information

Source of Material: Cell B2

Proposed Use: Subgrade

Sample Information

Sample Date: 09/04/15

Sampled By: McCormick, David

Sample Location: Cell B2

Sample Description: SG-2

Laboratory Test Data

Test Procedure: ASTM D698

Test Method: Method B

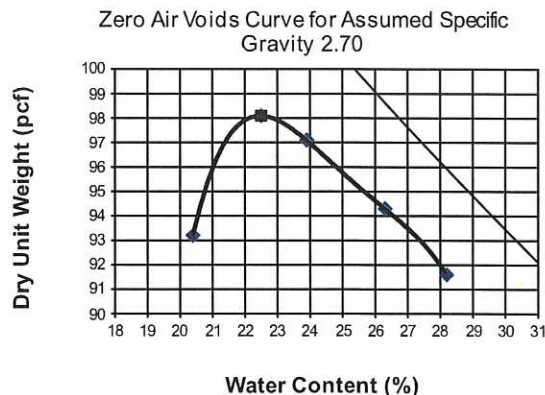
Sample Preparation: Wet

Rammer Type: Manual

Maximum Dry Unit Weight (pcf): 98.1

Optimum Water Content (%): 22.5

	Result	Specifications
Liquid Limit:	66	
Plastic Limit:	23	
Plasticity Index:	43	
In-Place Moisture (%):		
Passing #4 (%):	93.0	
Passing #200 (%):	79.0	
USCS:		



Comments:

Services: Moisture-Density Relations

Terracon Rep.: McCormick, David

Reported To:

Contractor:

Report Distribution:

(1) Terracon Consultants, Inc., Emailed

Reviewed By:

David McCormick
McCormick, David

Test Methods: AASHTO T99

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL REPORT

Report Number: 35157094.0002
Service Date: 09/12/15
Report Date: 09/22/15

Terracon

25809 I-30 South
Bryant, AR 72022
501-847-9292

Client

IESI-AR Landfill Corporation
Attn: Brady Stewart
100 Landfill Rd
Cherokee Village, AR 72529

Project

Cherokee Village - Cell B2 CQA
Cherokee Village Landfill
Cherokee Village, AR

Project Number: 35157094

Sieve Analysis	
Sieve Size (Inches)	Percent Passing (%)
3"	100
1 1/2"	100
1"	100
3/4"	99
3/8"	96
#4	93
#10	89
#40	85
#200	79.3

Services: Moisture-Density Relations

Terracon Rep.: McCormick, David

Reported To:

Contractor:

Report Distribution:

(1) Terracon Consultants, Inc., Emailed

Started

Finished:

Reviewed By:


McCormick, David

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

APPENDIX D

FIELD MOISTURE/DENSITY TEST RESULTS

Summary of Field Density Test Results ASTM D 2922

Project No: 35157094
Date of Report: 9/17/2015

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Client Name: IESI AR Landfill Corporation
Contractor: Twehous
Project Name: Cherokee Class 1 Sanitary Landfill
Location: Cell B2
Reviewed by: DCM
Technician: Chris Brimhall
Test Location: Cell B2

Depart Lab: 7:00 AM Depart Site: 2:00 PM
Arrive Site: 10:00 AM Arrive Lab: 5:30 PM

MATERIAL INFORMATION			
Mat'l. No.	Material Description	Maximum Dry Density (pcf)	Optimum Moisture (%)
SG-1	Fat Clay with Sand	92.9	25.6
SG-2	Fat Clay with Sand	98.1	22.5

Test No.	Lift or Elev.	Test Location		Shelby Tube Sample	Mat'l. No.	Wet Density, pcf	Dry Density, pcf	Lab Max. Dry Density, pcf	Percent Compaction %	Percent Compaction Required	Moisture Content %	Optimum Moisture %	PASS or FAIL
		Northing	Easting										
SG-1	SG	709300	1418015	-	SG-1	126.1	98.2	98.1	100.1	95.0	28.4	22.5	PASS
SG-2	SG	709300	1418085	-	SG-1	126.6	98.9	98.1	100.8	95.0	28.0	22.5	PASS
SG-3	SG	709300	1418155	-	SG-1	122.5	99.2	98.1	101.1	95.0	23.5	22.5	PASS
SG-4	SG	709300	1418225	-	SG-1	126.0	100.9	98.1	102.8	95.0	24.9	22.5	PASS
SG-5	SG	709300	1418295	-	SG-1	124.2	101.9	98.1	103.9	95.0	21.9	22.5	PASS
SG-6	SG	709300	1418365	-	SG-1	130.5	102.0	98.1	104.0	95.0	27.9	22.5	PASS
SG-7	SG	709300	1418435	-	SG-1	129.5	102.0	98.1	103.9	95.0	27.0	22.5	PASS
SG-8	SG	709240	1418435	-	SG-1	127.5	102.1	98.1	104.1	95.0	24.9	22.5	PASS
SG-9	SG	709240	1418365	-	SG-1	119.3	97.5	98.1	99.4	95.0	22.4	22.5	PASS
SG-10	SG	709240	1418295	-	SG-2	114.0	92.9	92.9	100.0	95.0	22.7	22.5	PASS

Summary of Field Density Test Results ASTM D 2922

Project No: 35157094
Date of Report: 9/17/2015

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Client Name: IESI AR Landfill Corporation
Contractor: Twehous
Project Name: Cherokee Class 1 Sanitary Landfill
Location: Cell B2
Reviewed by: DCM
Technician: Chris Brimhall
Test Location: Cell B2

Depart Lab: 7:00 AM Depart Site: 2:00 PM
Arrive Site: 10:00 AM Arrive Lab: 5:30 PM

MATERIAL INFORMATION			
Mat'l. No.	Material Description	Maximum Dry Density (pcf)	Optimum Moisture (%)
SG-1	Fat Clay with Sand	92.9	25.6
SG-2	Fat Clay with Sand	98.1	22.5

Test No.	Lift or Elev.	Test Location		Shelby Tube Sample	Mat'l. No.	Wet Density, pcf	Dry Density, pcf	Lab Max. Dry Density, pcf	Percent Compaction %	Percent Compaction Required	Moisture Content %	Optimum Moisture %	PASS or FAIL
		Northing	Easting										
SG-11	SG	709240	1418225	-	SG-1	120.2	97.9	98.1	99.8	95.0	22.8	22.5	PASS
SG-12	SG	709240	1418155	-	SG-1	127.1	104.2	98.1	106.2	95.0	22.0	22.5	PASS
SG-13	SG	709240	1418085	-	SG-1	122.8	98.2	98.1	100.1	95.0	25.0	22.5	PASS
SG-14	SG	709240	1418015	-	SG-1	119.8	99.2	98.1	101.1	95.0	20.8	22.5	PASS
SG-15	SG	709175	1418015	-	SG-1	121.0	100.1	98.1	102.0	95.0	20.9	22.5	PASS
SG-16	SG	709175	1418085	-	SG-1	121.8	100.2	98.1	102.1	95.0	21.6	22.5	PASS
SG-17	SG	709175	1418155	-	SG-1	141.0	115.1	98.1	117.3	95.0	22.5	22.5	PASS
SG-18	SG	709175	1418225	-	SG-1	126.8	102.6	98.1	104.6	95.0	23.6	22.5	PASS
SG-19	SG	709175	1418295	-	SG-1	124.8	101.9	98.1	103.9	95.0	22.5	22.5	PASS
SG-20	SG	709175	1418365	-	SG-1	136.3	110.9	98.1	113.0	95.0	22.9	22.5	PASS

Summary of Field Density Test Results ASTM D 2922

Project No: 35157094
Date of Report: 9/17/2015

Terracon
25809 Interstate 30 South
Bryant, AR 72022
(501) 847-9292

Client Name:	IESI AR Landfill Corporation
Contractor:	Twehous
Project Name:	Cherokee Class 1 Sanitary Landfill
Location:	Cell B2
Reviewed by:	DCM
Technician:	Chris Brimhall
Test Location:	Cell B2

Depart Lab:	<u>7:00 AM</u>	Depart Site:	<u>2:00 PM</u>
Arrive Site:	<u>10:00 AM</u>	Arrive Lab:	<u>5:30 PM</u>

MATERIAL INFORMATION

MATERIAL INFORMATION			
Mat'l. No.	Material Description	Maximum Dry Density (pcf)	Optimum Moisture (%)
SG-1	Fat Clay with Sand	92.9	25.6
SG-2	Fat Clay with Sand	98.1	22.5

[illegible]

APPENDIX E

FRICTION ANGLE TESTING



Interface Friction Test Report

Client: Terracon Consultants

TRI Log#: E2388-63-08

John M. Allen, P.E., 06/25/2015

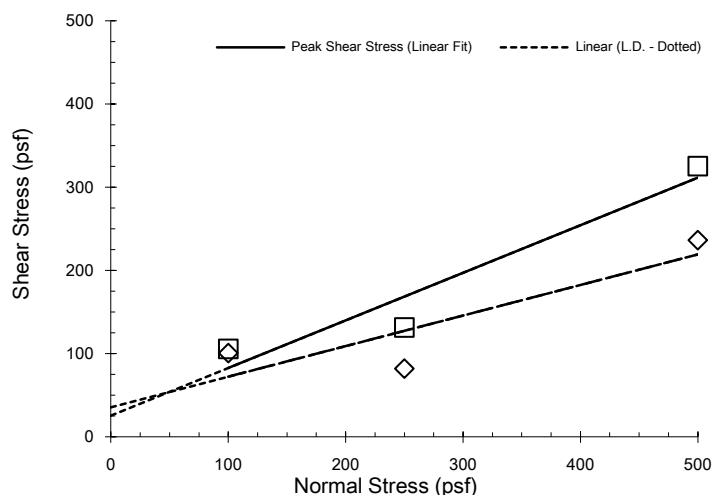
Project: Cherokee Village Landfill, Cell 2B

Test Method: ASTM D6243

Quality Review/Date

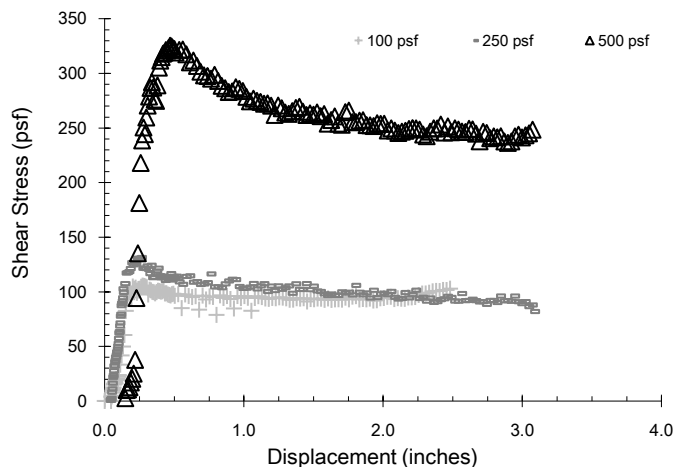
Date: 06-25-2015 to 06-25-2015

Tested Interface: BentoLiner NSL GCL (502250568) vs. GSE 60 mil HDPE Textured Geomembrane (104176039)



Test Results		
	Peak	Large Displacement (@ 3.0 in.)
Friction Angle (degrees):	29.8	20.2
Y-intercept or Adhesion (psf):	25	36

Shearing occurred at the interface.



Test Conditions	
Upper Box &	BentoLiner NSL GCL (non-woven side)
Lower Box	GSE 60 mil HDPE textured geomembrane
Box Dimensions:	12"x12"x4"
Interface Conditioning:	Interface soaked and loading applied for a minimum of 30 minutes prior to shear.
Test Condition:	Wet
Shearing Rate:	0.04 inches/minute

Test Data			
Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	9	10	13
Normal Stress (psf)	100	250	500
Corrected Peak Shear Stress (psf)	106	131	325
Corrected Large Displacement Shear Stress (psf)	101	82	236
Peak Secant Angle (degrees)	46.6	27.7	33.1
Large Displacement Secant Angle (degrees)	45.2	18.2	25.3
Asperity (mils)	15.4	15.4	16.4



Interface Friction Test Report

Client: Terracon Consultants

TRI Log#: E2388-63-08

John M. Allen, P.E., 06/25/2015

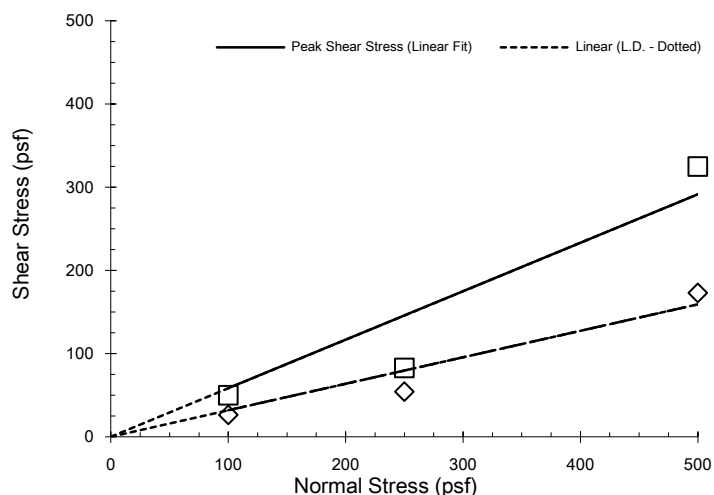
Project: Cherokee Village Landfill, Cell 2B

Test Method: ASTM D6243

Quality Review/Date

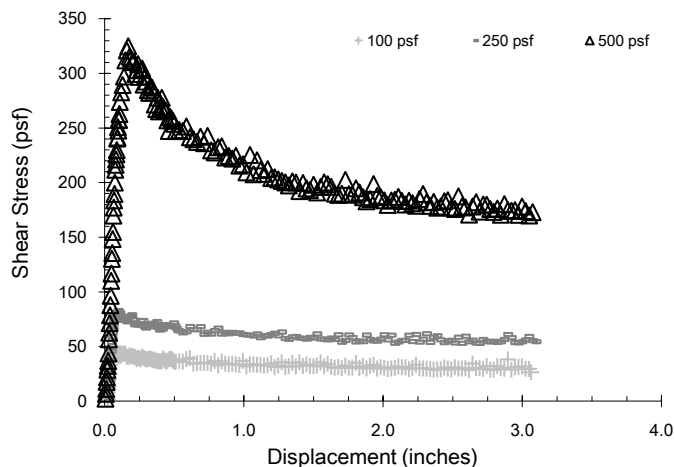
Date: 06-25-2015 to 06-25-2015

Tested Interface: BentoLiner EC GCL (502228990) vs. GSE 60 mil HDPE Textured Geomembrane (104176039)



Test Results		
	Peak	Large Displacement (@ 3.0 in.)
Friction Angle (degrees):	30.2	17.7
Y-intercept or Adhesion (psf):	0	0

Shearing occurred at the interface. Peak & large displacement friction angle regression analyses were adjusted to fit a zero y-intercept.



Test Conditions	
Upper Box &	BentoLiner EC GCL (non-woven side)
Lower Box	GSE 60 mil HDPE textured geomembrane
Box Dimensions:	12"x12"x4"
Interface Conditioning:	Interface soaked and loading applied for a minimum of 30 minutes prior to shear.
Test Condition:	Wet
Shearing Rate:	0.04 inches/minute

Test Data			
Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	3	10	13
Normal Stress (psf)	100	250	500
Corrected Peak Shear Stress (psf)	50	83	325
Corrected Large Displacement Shear Stress (psf)	26	54	173
Peak Secant Angle (degrees)	26.6	18.3	33.0
Large Displacement Secant Angle (degrees)	14.8	12.3	19.1
Asperity (mils)	16.0	16.8	14.6

APPENDIX F

GEOSYNTHETICS INSTALLER'S RESUMES

**SUBMITTAL TRANSMITTAL**Submittal Description: **Geomembrane**Submittal No: **02277-03A**Spec Section: **02277**

ENGINEER: BRADLEY STEWART	Routing	Sent	Received
OWNER: PROGRESSIVE WASTE SOLUTIONS	Contractor/CM		
PROJECT: 07157416 CHEROKEE SANITARY LANDFIL	CM/Engineer	11/6/2015	
	Engineer/CM		
CONTRACTOR: COMANCO Environmental Corp.	CM/Contractor		

We are sending you

☒ Attached☐ Under separate cover via _____☐ Submittals for review and comment☐ Product data for information only

Remarks: _____

Item	Copies	Date	Section No.	Description	Review Action	Reviewer Initials	Review comments attached
1	1	11/6/2015	1.03.A.5.b	Crew Resumes			

Contractor

Certify either A or B:

- ☒ A. We have verified that the material or equipment contained in this submittal meets all the requirements, including coordination with all related work, specified (no exceptions).
- ☐ B. We have verified that the material or equipment contained in this submittal meets all the requirements specified except for the attached deviations.

No.	Deviation

Certified by: _____

Matt R. Remmert, Eng

SUBMITTAL REVIEW BY ENGINEER☐ No exceptions taken☐ Make corrections noted. Do not resubmit☐ Make corrections noted and resubmit☐ Rejected. Resubmit in accordance with contract documents

BY: _____

DATE: _____

Engineer Comments: _____



Corporate Office:

4301 Sterling Commerce Drive
Plant City, FL 33566
(813) 988-8829
Fax: (813) 496-7305
<http://www.Comanco.com>

Regional Office:

Reno, NV
7911 Terminal Way #106
Reno, NV 89502
(775) 324-7707
Fax: (775) 324-7708

Master Seamer

Tomas Aguilar

Tomas has five (5) years of experience with Comanco in the installation of a variety of geosynthetic liners and components. A Master Seamer qualification requires a minimum of five million square feet of actual hands on geomembrane welding experience. He is qualified to set-up, maintain, and operate equipment to include the following machines: Vacuum box, hand held hot air, and sewing. In addition, he is qualified to set-up, maintain and operate the wedge welder, extrusion welder, and air testing equipment. He is familiar with all currently utilized welding techniques, installation and safety procedures and is an IAGI certified welding technician.

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



Geomembrane Welder Francisco Colorado

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

Most Recent Job History:

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

Components Installed

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



Geomembrane Welder

Jimmy Perez

Jimmy has years of experience in installation and seaming of a variety of synthetic liners and components. He is qualified to set up and operate the following machines: vacuum box, hand held hot air and sewing machine. As part of his ongoing training; he is allowed to operate the wedge, extrusion welder, and air testing equipment. Jimmy is familiar with all currently utilized safety procedures.

Most Recent Job History:

Republic Landcomp Cell 3	206,856	SF HDPE	58,326	SF Geocomposite
Progressive JED Landfill	1,024,020	SF HDPE	1,003,928	SF Geocomposite
Republic McCarty Road	697,772	SF LLDPE	721,656	SF Geocomposite

Components Installed ☒

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

Applications ☒

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



Geomembrane Welder

Marvin Francis

Marvin has 5 years of experience in the 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. Marvin 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

APPENDIX G

GEOSYNTHETIC CLAY LINER

MANUFACTURER'S QC CERTIFICATES



BentoLiner Manufacturing Certification

Sales Order: 76090
Customer: Progressive Waste
Project: Progressive Waste Cherokee Village
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.

A handwritten signature in blue ink, reading 'Rick Schaefer', written over a horizontal line.

Rick Schaefer
Director of Quality



Roll Allocation List

Sales Order SO-076090
Customer Name Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

Serial number	Item Number	Roll width	Manufacturing date	Length
135038971	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00
135038972	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00
135038973	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00
135038974	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00
135038975	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00
135038976	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00
135038977	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00
135038978	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00
135038979	BLI-075-06N-03S-D-00	15.50	9/16/2015	150.00



ROLL TEST DATA REPORT



Report Date: Sep/17/2015

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-076090	Progressive Waste Solutions	Cherokee Village AR US	BLI-075-06N-03S-D-00	

Roll Number	ASTM D4632 Grab Strength (lbs)	ASTM D4632 Peel Strength (lbs)	ASTM D6708 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)
135038971	131	36	36.0	6.9	0.84	31.0	6.5	14.0
135038972	126	29	35.1	5.3	0.83	31.0	6.5	14.0
135038973	126	29	35.1	5.3	0.83	31.0	6.5	14.0
135038974	126	29	35.1	5.3	0.83	31.0	6.5	14.0
135038975	126	29	35.1	5.3	0.83	31.0	6.5	14.0
135038976	126	29	35.1	5.3	0.83	31.0	6.5	14.0
135038977	126	29	35.1	5.3	0.83	31.0	6.5	14.0
135038978	126	29	35.1	5.3	0.83	31.0	6.5	14.0
135038979	126	29	35.1	5.3	0.83	31.0	6.5	14.0

Laboratory Manager



Large Scale Direct Shear Report

Profile:

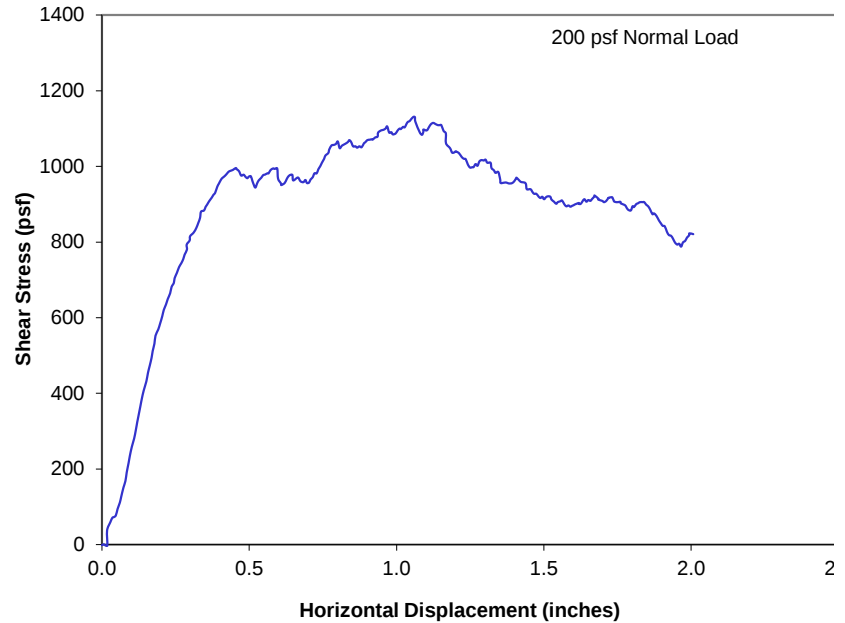
Testing Date: 9/11/2015

Internal Shear of BentoLiner NSL, Roll # 135038136, Lot #35083103
BLI-075-06N-03S-D-00

DISPLACEMENT vs SHEAR STRESS

Normal Stress (psf)	Peak Stress (psf)	L.D. Stress (psf)
200	1130	821

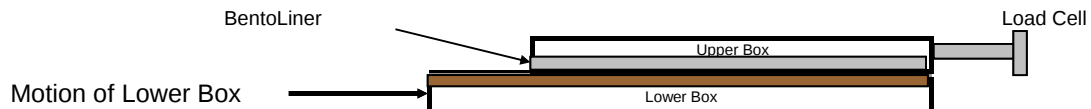
The gripper plate slipped against the GCL with a peak shear stress of 1130 psf. There was no internal failure of the GCL.



TESTING INFORMATION:

- 1 Tests were conducted in general accordance with ASTM 6243.
- 2 Tests were conducted with the profile immersed in tap water.
- 3 The GCL was hydrated for 24 hours at 200 psf before the start of shearing.
- 4 Testing Speed: 0.04 in/min
- 5 Large Displacement (LD): 2.0 inches
- 6 The 200 psf normal load was applied with a dead weight load.

TEST ORIENTATION



SHEAR DEVICE INFORMATION:

- 1 Manufactured by GeoSyntec Consultants
- 2 Upper box dimensions: 12" x 12" x 3"
- 3 Lower box dimensions: 12" x 16" x 3"
- 4 Large Displacement: Up to 4"

GSE Roll Allocation

Order SO-076090

Customer Progressive Waste Solutions

Project Name Progressive Waste Cherokee Village

TRI/AUSTIN
1/100,000 & LOT

Roll#	Daily Lot	Product Code	Mfg Date	Length	Picked Up
135038971	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	
135038972	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	
135038973	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	
135038974	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	
135038975	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	
135038976	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	
135038977	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	
135038978	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	
135038979	35091603	BLI-075-06N-03S-D-00	9/16/2015	150	



BentoLiner Manufacturing Certification

Sales Order: 76090
Customer: Progressive Waste
Project: Progressive Waste Cherokee Village
Product Type: BLI-075-03N-03S-D-00 Bentoliner EC

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.

A handwritten signature in blue ink, reading 'Rick Schaefer', written over a horizontal line.

Rick Schaefer
Director of Quality

Roll Allocation List

Sales Order SO-076090
Customer Name Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

Serial number	Item Number	Roll width	Manufacturing date	Length
135038683	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038684	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038685	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038686	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038687	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038688	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038689	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038690	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038691	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038692	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038693	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038694	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038695	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038696	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038697	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038698	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038699	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038700	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038701	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038702	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038703	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038704	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038705	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038706	BLI-075-03N-03S-D-00	15.50	9/10/2015	150.00
135038712	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038713	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038714	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038715	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038716	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038717	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038718	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038719	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038720	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038721	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038722	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038723	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038724	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038725	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038726	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038746	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038747	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038748	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038749	BLI-075-03N-03S-D-00	15.50	9/11/2015	150.00
135038750	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038751	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038752	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038753	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038754	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038755	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038756	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038757	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038758	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038759	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038760	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038761	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038762	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038763	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038764	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038765	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038766	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00

Roll Allocation List

Sales Order SO-076090
Customer Name Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

Serial number	Item Number	Roll width	Manufacturing date	Length
135038767	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038768	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038769	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038770	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038771	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038772	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038773	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038774	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038775	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038776	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038777	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038778	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038779	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038780	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038781	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038782	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038783	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038784	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038785	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038786	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038787	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038788	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038789	BLI-075-03N-03S-D-00	15.50	9/12/2015	150.00
135038790	BLI-075-03N-03S-D-00	15.50	9/14/2015	150.00
135038791	BLI-075-03N-03S-D-00	15.50	9/14/2015	150.00
135038792	BLI-075-03N-03S-D-00	15.50	9/14/2015	150.00

ROLL TEST DATA REPORT



Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-076090	Progressive Waste Solutions	Cherokee Village AR US	BLI-075-03N-03S-D-00	

Roll Number	ASTM D4632 Grab Strength (lbs)	ASTM D4632 Peel Strength (lbs)	ASTM D6708 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)
135038683	98	21	46.3	4.1	0.88	28.0	8.9	16.6
135038684	98	21	46.3	4.1	0.88	28.0	8.9	16.6
135038685	98	21	46.3	4.1	0.88	28.0	8.9	16.6
135038686	98	21	46.3	4.1	0.88	28.0	8.9	16.6
135038687	98	21	46.3	4.1	0.88	28.0	8.9	16.6
135038688	98	21	46.3	4.1	0.88	28.0	8.9	16.6
135038689	98	21	46.3	4.1	0.88	28.0	8.9	16.6
135038690	98	21	46.3	4.1	0.88	28.0	8.9	16.6
135038691	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038692	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038693	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038694	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038695	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038696	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038697	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038698	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038699	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038700	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038701	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038702	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038703	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038704	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038705	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038706	98	20	44.7	3.9	0.90	29.0	7.1	14.2
135038712	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038713	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038714	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038715	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038716	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038717	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038718	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038719	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038720	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038721	98	16	41.9	3.8	0.85	29.0	6.9	14.6

ROLL TEST DATA REPORT



Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-076090	Progressive Waste Solutions	Cherokee Village AR US	BLI-075-03N-03S-D-00	

Roll Number	ASTM D4632 Grab Strength (lbs)	ASTM D4632 Peel 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)
135038722	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038723	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038724	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038725	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038726	98	16	41.9	3.8	0.85	29.0	6.9	14.6
135038746	99	17	42.8	3.8	0.82	26.0	8.6	16.6
135038747	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038748	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038749	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038750	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038751	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038752	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038753	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038754	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038755	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038756	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038757	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038758	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038759	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038760	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038761	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038762	115	20	34.8	3.6	0.79	26.0	8.6	16.6
135038763	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038764	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038765	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038766	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038767	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038768	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038769	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038770	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038771	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038772	123	20	40.3	3.7	0.76	26.0	8.6	16.6
135038773	123	20	40.3	3.7	0.76	27.0	8.5	16.4
135038774	123	20	40.3	3.7	0.76	27.0	8.5	16.4

ROLL TEST DATA REPORT



Report Date: Sep/16/2015

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-076090	Progressive Waste Solutions	Cherokee Village AR US	BLI-075-03N-03S-D-00	

Roll Number	ASTM D4632 Grab Strength (lbs)	ASTM D4632 Peel Strength (lbs)	ASTM D6708 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)
135038775	123	20	40.3	3.7	0.76	27.0	8.5	16.4
135038776	123	20	40.3	3.7	0.76	27.0	8.5	16.4
135038777	123	20	40.3	3.7	0.76	27.0	8.5	16.4
135038778	123	20	40.3	3.7	0.76	27.0	8.5	16.4
135038779	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038780	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038781	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038782	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038783	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038784	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038785	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038786	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038787	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038788	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038789	116	18	45.8	3.4	0.75	27.0	8.5	16.4
135038790	125	12	47.1	2.9	0.85	27.0	8.5	16.4
135038791	148	9	48.3	1.6	0.85	27.0	8.5	16.4
135038792	148	9	48.3	1.6	0.85	27.0	8.5	16.4

Laboratory Manager





Large Scale Direct Shear Report

Profile:

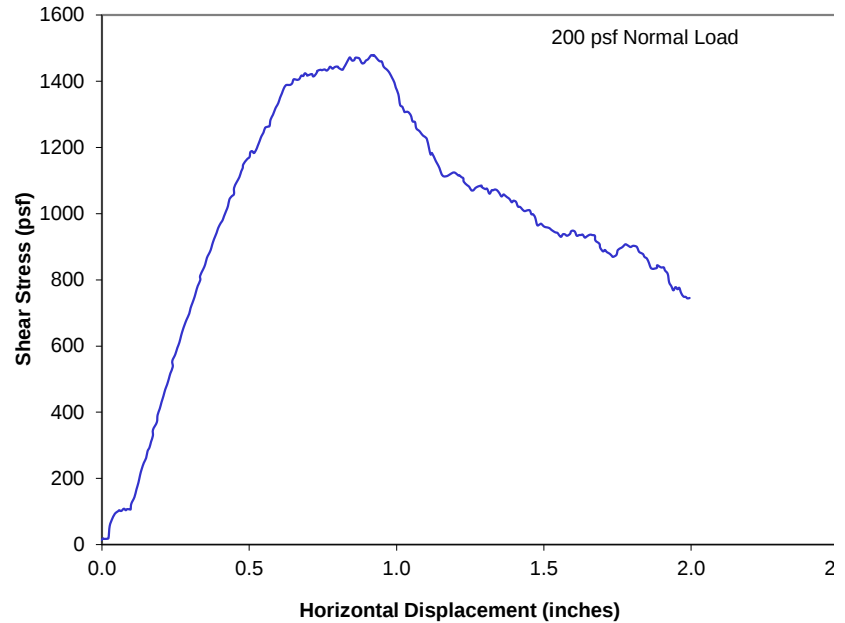
Testing Date: 4/16/2015

Internal Shear of BentoLiner EC, Roll # 135032463 Lot #35040808
BLI-075-03N-03S-D-00

DISPLACEMENT vs SHEAR STRESS

Normal Stress (psf)	Peak Stress (psf)	L.D. Stress (psf)
200	1479	745

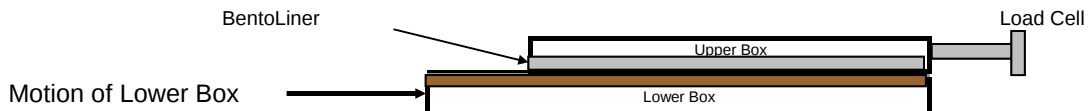
The gripper plate slipped against the GCL with a peak shear stress of 1479 psf. There was no internal failure of the GCL.



TESTING INFORMATION:

- 1 Tests were conducted in general accordance with ASTM 6243.
- 2 Tests were conducted with the profile immersed in tap water.
- 3 The GCL was hydrated for 24 hours at 200 psf before the start of shearing.
- 4 Testing Speed: 0.04 in/min
- 5 Large Displacement (LD): 2.0 inches
- 6 The 200 psf normal load was applied with a dead weight load.

TEST ORIENTATION



SHEAR DEVICE INFORMATION:

- 1 Manufactured by GeoSyntec Consultants
- 2 Upper box dimensions: 12" x 12" x 3"
- 3 Lower box dimensions: 12" x 16" x 3"
- 4 Large Displacement: Up to 4"

GSE Roll Allocation

Order SO-076090
Customer Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

TRI/AUSTIN
1/100,000 & LOT

Roll#	Daily Lot	Product Code	Mfg Date	Length	Picked Up
135038683	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038684	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038685	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038686	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038687	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038688	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038689	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038690	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038691	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038692	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038693	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038694	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038695	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038696	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038697	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038698	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038699	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038700	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038701	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038702	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038703	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038704	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038705	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038706	35091008	BLI-075-03N-03S-D-00	9/10/2015	150	
135038712	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038713	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038714	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038715	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038716	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038717	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038718	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038719	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038720	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038721	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038722	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038723	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038724	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038725	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038726	35091008	BLI-075-03N-03S-D-00	9/11/2015	150	
135038746	35091108	BLI-075-03N-03S-D-00	9/11/2015	150	
135038747	35091108	BLI-075-03N-03S-D-00	9/11/2015	150	
135038748	35091108	BLI-075-03N-03S-D-00	9/11/2015	150	
135038749	35091108	BLI-075-03N-03S-D-00	9/11/2015	150	
135038750	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038751	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038752	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038753	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038754	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	

Order SO-076090
Customer Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

TRI/AUSTIN
1/100,000 & LOT

Roll#	Daily Lot	Product Code	Mfg Date	Length	Picked Up
135038755	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038756	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038757	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038758	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038759	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038760	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038761	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038762	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038763	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038764	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038765	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038766	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038767	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038768	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038769	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038770	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038771	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038772	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038773	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038774	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038775	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038776	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038777	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038778	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038779	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038780	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038781	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038782	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038783	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038784	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038785	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038786	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038787	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038788	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038789	35091108	BLI-075-03N-03S-D-00	9/12/2015	150	
135038790	35091408	BLI-075-03N-03S-D-00	9/14/2015	150	
135038791	35091408	BLI-075-03N-03S-D-00	9/14/2015	150	
135038792	35091408	BLI-075-03N-03S-D-00	9/14/2015	150	

APPENDIX H GEOSYNTHETIC CLAY LINER CONFORMANCE TEST RESULTS



September 23, 2015

Mail To:

David McCormick
Terracon
25809 Interstate 30
Bryant, AR 72022

email: dcmccormick@terracon.com

Bill To:

<= Same (Job 35157094)

Dear Mr. McCormick:

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: Cherokee Village LF Cell B2 - Arkansas

TRI Job Reference Number: E2392-84-06

Material(s) Tested: Three BentoLiner EC GCL(s)

Test(s) Requested: Mass/Unit Area (ASTM D5993)
Tensile Strength (ASTM D6768)
Peel Strength (ASTM D6496)
Index Flux (ASTM D5887)

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

Sincerely,

John M. Allen, P.E.
Division Director
Geosynthetic Services Division
www.GeosyntheticTesting.com



GCL TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village LF Cell B2 - Arkansas

Material: BentoLiner EC GCL

Sample Identification: 135038683

TRI Log #: E2392-84-06

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)													
Bentonite mass/unit area (lbs/ft ²)	0.70	0.79	0.80	0.83	0.75						0.77	0.05	0.75 min
Moisture Content (%)	9.1	9.0	9.2	9.3	9.3						9.2	0.1	
Tensile Strength (ASTM D6768)													
MD - Tensile Strength (lbs/in)	51.0	58.2	54.8	56.6	56.9						55.5	2.8	30 min
Peel Strength (ASTM D6496)													
MD - Peel Strength (lbs/in)	1.1	1.6	1.4	1.4	1.1						1.3	0.2	
Index Flux (ASTM D5887)													
Index Flux (m ³ /m ² /sec)		4.0E-09									4.0E-09		
Hydraulic Conductivity (cm/sec)		3.0E-09									3.0E-09		5.0E-09 max
MD Machine Direction	TD Transverse Direction				NA Not Available								



GCL TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village LF Cell B2 - Arkansas

Material: BentoLiner EC GCL

Sample Identification: 135038746

TRI Log #: E2392-84-06

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)													
Bentonite mass/unit area (lbs/ft ²)	0.67	0.76	0.84	0.79	0.77						0.77	0.06	0.75 min
Moisture Content (%)	9.6	9.7	9.6	9.5	10.8						9.8	0.5	
Tensile Strength (ASTM D6768)													
MD - Tensile Strength (lbs/in)	70.1	47.9	46.0	48.0	51.0						52.6	9.9	30 min
Peel Strength (ASTM D6496)													
MD - Peel Strength (lbs/in)	2.1	2.0	1.9	2.2	2.1						2.1	0.1	
Index Flux (ASTM D5887)													
Index Flux (m ³ /m ² /sec)		3.8E-09									3.8E-09		
Hydraulic Conductivity (cm/sec)		2.4E-09									2.4E-09		5.0E-09 max
MD Machine Direction	TD Transverse Direction				NA Not Available								



GCL TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village LF Cell B2 - Arkansas

Material: BentoLiner EC GCL

Sample Identification: 135038792

TRI Log #: E2392-84-06

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.	
	1	2	3	4	5	6	7	8	9	10				
Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)														
Bentonite mass/unit area (lbs/ft ²)	0.91	0.69	0.91	0.92	0.79							0.84	0.10	0.75 min
Moisture Content (%)	9.0	9.0	9.1	9.2	9.2							9.1	0.1	
Tensile Strength (ASTM D6768)														
MD - Tensile Strength (lbs/in)	48.9	47.5	48.2	43.9	49.0							47.5	2.1	30 min
Peel Strength (ASTM D6496)														
MD - Peel Strength (lbs/in)	3.1	3.2	3.9	3.0	3.3							3.3	0.4	
Index Flux (ASTM D5887)														
Index Flux (m ³ /m ² /sec)		3.5E-09										3.5E-09		
Hydraulic Conductivity (cm/sec)		3.1E-09										3.1E-09		5.0E-09 max
MD Machine Direction	TD Transverse Direction				NA Not Available									



September 22, 2015

Mail To:

David McCormick
Terracon
25809 Interstate 30
Bryant, AR 72022

email: dcmccormick@terracon.com

Bill To:

<= Same (Job 35157094)

Dear Mr. McCormick:

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: Cherokee Village LF Cell B2 - Arkansas

TRI Job Reference Number: E2392-84-06

Material(s) Tested: Three BentoLiner EC GCL(s)

Test(s) Requested: Mass/Unit Area (ASTM D5993)
Tensile Strength (ASTM D6768)
Index Flux (ASTM D5887)

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

Sincerely,

John M. Allen, P.E.
Division Director
Geosynthetic Services Division
www.GeosyntheticTesting.com



GCL TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village LF Cell B2 - Arkansas

Material: BentoLiner EC GCL

Sample Identification: 135038683

TRI Log #: E2392-84-06

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)													
Bentonite mass/unit area (lbs/ft ²)	0.70	0.79	0.80	0.83	0.75						0.77	0.05	0.75 min
Moisture Content (%)	9.1	9.0	9.2	9.3	9.3						9.2	0.1	
Tensile Strength (ASTM D6768)													
MD - Tensile Strength (lbs/in)	51.0	58.2	54.8	56.6	56.9						55.5	2.8	30 min
Index Flux (ASTM D5887)													
Index Flux (m ³ /m ² /sec)		4.0E-09									4.0E-09		
Hydraulic Conductivity (cm/sec)		3.0E-09									3.0E-09		5.0E-09 max
MD Machine Direction	TD Transverse Direction				NA Not Available								



GCL TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village LF Cell B2 - Arkansas

Material: BentoLiner EC GCL

Sample Identification: 135038746

TRI Log #: E2392-84-06

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)													
Bentonite mass/unit area (lbs/ft ²)	0.67	0.76	0.84	0.79	0.77						0.77	0.06	0.75 min
Moisture Content (%)	9.6	9.7	9.6	9.5	10.8						9.8	0.5	
Tensile Strength (ASTM D6768)													
MD - Tensile Strength (lbs/in)	70.1	47.9	46.0	48.0	51.0						52.6	9.9	30 min
Index Flux (ASTM D5887)													
Index Flux (m ³ /m ² /sec)		3.8E-09									3.8E-09		
Hydraulic Conductivity (cm/sec)		2.4E-09									2.4E-09		5.0E-09 max
MD Machine Direction	TD Transverse Direction			NA Not Available									



GCL TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village LF Cell B2 - Arkansas

Material: BentoLiner EC GCL

Sample Identification: 135038792

TRI Log #: E2392-84-06

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)													
Bentonite mass/unit area (lbs/ft ²)	0.91	0.69	0.91	0.92	0.79						0.84	0.10	0.75 min
Moisture Content (%)	9.0	9.0	9.1	9.2	9.2						9.1	0.1	
Tensile Strength (ASTM D6768)													
MD - Tensile Strength (lbs/in)	48.9	47.5	48.2	43.9	49.0						47.5	2.1	30 min
Index Flux (ASTM D5887)													
Index Flux (m ³ /m ² /sec)		3.5E-09									3.5E-09		
Hydraulic Conductivity (cm/sec)		3.1E-09									3.1E-09		5.0E-09 max
MD Machine Direction	TD Transverse Direction			NA Not Available									



September 25, 2015

Mail To:

David McCormick
Terracon
25809 Interstate 30
Bryant, AR 72022

email: dcmccormick@terracon.com

Bill To:

<= Same (Job 35157094)

Dear Mr. McCormick:

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: Cherokee Village LF Cell B2 - Arkansas

TRI Job Reference Number: E2392-85-07

Material(s) Tested: One BentoLiner NSL GCL(s)

Test(s) Requested: Mass/Unit Area (ASTM D5993)
Tensile Strength (ASTM D6768)
Peel Strength (ASTM D6496)
Index Flux (ASTM D5887)

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

Sincerely,

John M. Allen, P.E.
Division Director
Geosynthetic Services Division
www.GeosyntheticTesting.com



GCL TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village LF Cell B2 - Arkansas

Material: BentoLiner NSL GCL

Sample Identification: 135038971

TRI Log #: E2392-85-07

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)													
Bentonite mass/unit area (lbs/ft ²)	0.86	0.84	0.72	0.92	0.76						0.82	0.08	0.75 min
Moisture Content (%)	8.8	8.7	8.5	8.7	8.6						8.7	0.1	
Tensile Strength (ASTM D6768)													
MD - Tensile Strength (lbs/in)	38.8	39.6	37.5	43.5	40.9						40.1	2.3	30 min
Peel Strength (ASTM D6496)													
MD - Peel Strength (lbs/in)	8.6	5.4	6.1	6.2	5.8						6.4	1.3	3.5
Index Flux (ASTM D5887)													
Index Flux (m ³ /m ² /sec)		2.9E-09									2.9E-09		
Hydraulic Conductivity (cm/sec)		1.8E-09									1.8E-09		5.0E-09 max
MD Machine Direction	TD Transverse Direction				NA Not Available								

APPENDIX I

GEOMEMBRANE MANUFACTURER'S QC CERTIFICATES

GSE Roll Allocation

Order SO-076090
Customer Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

Roll#	Resin Lot	Product Code	Mfg Date	Length
108183160	D150520933	HDT-060GE-BBB-B-W0	7/31/2015	520
108183161	D150520933	HDT-060GE-BBB-B-W0	7/31/2015	520
108183162	D150520933	HDT-060GE-BBB-B-W0	7/31/2015	520
108183163	D150520933	HDT-060GE-BBB-B-W0	7/31/2015	520
108183164	D150520933	HDT-060GE-BBB-B-W0	7/31/2015	520
108183168	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183169	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183170	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183171	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183172	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183173	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183174	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183175	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183176	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183177	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183178	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183179	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183180	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520
108183181	D150120036	HDT-060GE-BBB-B-W0	8/1/2015	520



ROLL TEST DATA REPORT



Report Date: Aug/3/2015

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-076090	Progressive Waste Solutions	Cherokee Village AR US	HDT-060GE-BBB-B-W0	

Roll Number	Average Thickness ASTM D5994 (mils)	Minimum Thickness ASTM D5994 (mils)	Yield Strength ASTM D6693 (ppi) MD	Yield Strength ASTM D6693 (ppi) TD	Yield Elongation ASTM D6693 (%) MD	Yield Elongation ASTM D6693 (%) TD	Break Strength ASTM D6693 (ppi) MD	Break Strength ASTM D6693 (ppi) TD	Break Elongation ASTM D6693 (%) MD	Break Elongation ASTM D6693 (%) TD	Tear Resistance ASTM D1004 (lbs) MD	Tear Resistance ASTM D1004 (lbs) TD	Puncture Resistance ASTM D4833 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D5396 (Views in Cat1-Cat2)	Asperity Height ASTM D7466 (mils) A Side	Asperity Height ASTM D7466 (mils) B Side
108183160	58	55	167	172	16	16	197	167	527	486	61	59	156	0.945	2.8	10	24	23
108183161	58	56	167	172	16	16	197	167	527	486	61	59	156	0.945	2.8	10	22	23
108183162	58	55	167	172	16	16	197	167	527	486	61	59	156	0.945	2.8	10	22	23
108183163	58	55	167	172	16	16	197	167	527	486	61	59	156	0.945	2.8	10	22	23
108183164	59	55	169	173	16	16	214	182	568	474	57	57	155	0.945	2.5	10	22	23
108183168	59	54	155	162	16	16	196	185	537	547	53	51	146	0.945	2.5	10	23	24
108183169	58	52	155	162	16	16	196	185	537	547	53	51	146	0.945	2.5	10	23	24
108183170	58	52	155	162	16	16	196	185	537	547	53	51	146	0.945	2.5	10	23	24
108183171	59	52	155	162	16	16	196	185	537	547	53	51	146	0.945	2.5	10	23	24
108183172	59	52	160	165	16	16	196	153	538	360	56	53	150	0.945	2.5	10	23	23
108183173	58	52	160	165	16	16	196	153	538	360	56	53	150	0.945	2.5	10	23	23
108183174	58	54	160	165	16	16	196	153	538	360	56	53	150	0.945	2.5	10	22	23
108183175	58	54	160	165	16	16	196	153	538	360	56	53	150	0.945	2.5	10	22	23
108183176	58	55	165	172	17	16	176	166	443	466	51	53	143	0.945	2.4	10	22	23
108183177	58	53	165	172	17	16	176	166	443	466	51	53	143	0.945	2.4	10	22	23
108183178	58	53	165	172	17	16	176	166	443	466	51	53	143	0.945	2.4	10	22	22
108183179	58	54	165	172	17	16	176	166	443	466	51	53	143	0.945	2.4	10	22	22
108183180	58	54	164	171	16	16	200	137	547	333	57	56	152	0.945	2.6	10	21	22
108183181	58	55	164	171	16	16	200	137	547	333	57	56	152	0.945	2.6	10	21	22

Laboratory Manager



Total Petrochemicals & Refining USA, Inc.
Bayport Polyethylene Plant
Bayport, TX 77555
U.S.A.

GSE / Attn: Sue P.
fax#281-230-8630
PALESTINE TX

SHIPPED TO:
GSE LINING TECHNOLOGY, LLC.
UP Track 14732 Westfield
WESTFIELD TX 77090

Material: Our / Your reference
MDPE 37120 (441840) /

Please find below test data and pertinent information on TOTAL PETROCHEMICALS & REFINING
USA, INC. Polyethylene material shipped to your plant.

Batch D150120036 **Quantity** 194,700 LB **Railcar** GPLX076712

Quality certificate

Date
06/24/2015
Purchase order item/date
03-501864
Delivery item/date
85633920 000001 / 06/24/2015
Order item
32223035 000001
Customer number
80131640

Characteristic	Unit	Value
Density	g/cc	0.939
Melt Index 21.6/190	g/10 min	13.2
Railcar Prefix	-	GPLX
Railcar Number	-	076712

Sincerely,

Charles R. St. Ama
Quality Control Laboratory Supervisor
12212 Port Road, Pasadena, Texas 77507
P.O. Box 5010, LaPorte, Texas 77572-5010

Questions? Contact Customer Service at 1-800-344-3462



Total Petrochemicals & Refining USA, Inc.
Bayport Polyethylene Plant
Bayport, TX 77555
U.S.A.

GSE / Attn: Sue P.
fax#281-230-8630
PALESTINE TX

SHIPPED TO:
GSE LINING TECHNOLOGY, LLC.
UP Track 14732 Westfield
WESTFIELD TX 77090

Material: Our / Your reference
MDPE 37120 (441840) /

Please find below test data and pertinent information on TOTAL PETROCHEMICALS & REFINING
USA, INC. Polyethylene material shipped to your plant.

Batch D150520933 **Quantity** 193,300 LB **Railcar** FINX050242

Quality certificate

Date
06/24/2015
Purchase order item/date
03-501864
Delivery item/date
85633923 000001 / 06/24/2015
Order item
32223038 000001
Customer number
80131640

Characteristic	Unit	Value
Density	g/cc	0.938
Melt Index 21.6/190	g/10 min	11.2
Railcar Prefix	-	FINX
Railcar Number	-	050242

Sincerely,

Charles R. St. Ama
Quality Control Laboratory Supervisor
12212 Port Road, Pasadena, Texas 77507
P.O. Box 5010, LaPorte, Texas 77572-5010

Questions? Contact Customer Service at 1-800-344-3462

GSE Roll Allocation

Order : SO-076090
Customer : Progressive Waste Solutions
Project Name : Progressive Waste Cherokee Village

<u>Roll#</u>	<u>Product Code</u>	<u>Mfg Date</u>	<u>Length</u>
103203644	HDS-040AE-BBB-B-00	7/29/2015	870



ROLL TEST DATA REPORT



Report Date: Jul/30/2015

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-076090	Progressive Waste Solutions	Cherokee Village AR US	HDS-040AE-BBB-B-00	

Roll Number	Average Thickness ASTM D5199 (mils)	Minimum Thickness ASTM D5199 (mils)	Yield Strength ASTM D6693 (ppi) MD	Yield Strength ASTM D6693 (ppi) TD	Yield Elongation ASTM D6693 (%) MD	Yield Elongation ASTM D6693 (%) TD	Break Strength ASTM D6693 (ppi) MD	Break Strength ASTM D6693 (ppi) TD	Break Elongation ASTM D6693 (%) MD	Break Elongation ASTM D6693 (%) TD	Tear Resistance ASTM D1004 (lbs) MD	Tear Resistance ASTM D1004 (lbs) TD	Puncture Resistance ASTM D4833 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D5596 (Views in Cat1-Cat2)
103203644	41	39	101	100	16	16	211	217	816	920	38	38	117	0.945	2.4	10

Laboratory Manager 

APPENDIX J

GEOMEMBRANE CONFORMANCE TEST RESULTS



August 14, 2015

Mail To:

David McCormick
Terracon
25809 Interstate 30
Bryant, AR 72022

Bill To:

<= Same

email: dcmccormick@terracon.com

Dear Mr. McCormick:

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:	Cherokee Village Landfill
TRI Job Reference Number:	E2401-53-10
Material(s) Tested:	Three, GSE 60 mil Textured HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Asperity Height (GRI GM 12) Density (ASTM D 1505) Carbon Content (ASTM D 1603, mod.) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693) Tear Resistance (ASTM D 1004)

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



GEOMEMBRANE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE 60 mil Textured HDPE Geomembrane

Sample Identification: 108183160

TRI Log #: E2401-53-10

PARAMETER	TEST REPLICATE NUMBER										STD.	
	1	2	3	4	5	6	7	8	9	10	MEAN	DEV.
Thickness (ASTM D 5994)												
Thickness (mils)	67.7	66.2	67.1	63.6	67.8	68.4	64.9	66.6	67.6	65.1	66.5 63.6	1.5 << min
Asperity Height (GRI GM 12)												
Asperity Height (mils) - Side A	27	27	20	27	30	25	26	29	29	30	27	3
Asperity Height (mils) - Side B	22	27	29	21	27	22	24	27	22	21	24	3
Density (ASTM D 1505)												
Density (g/cm3)	0.947	0.947	0.947								0.947	0.000
Carbon Black Content (ASTM D 1603, mod.)												
% Carbon Black	2.49	2.49									2.49	0.00
Carbon Black Dispersion (ASTM D 5596)												
Rating - 1st field view	1	1	1	1	2							
Rating - 2nd field view	1	1	1	1	1							
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	185	181	184	175	186						182	4
TD Yield Strength (ppi)	199	198	192	184	188						192	6
MD Break Strength (ppi)	193	197	188	196	162						187	15
TD Break Strength (ppi)	144	139	176	134	193						157	26
MD Yield Elongation (%)	17	17	17	17	17						17	0
TD Yield Elongation (%)	16	18	16	15	14						16	1
MD Break Elongation (%)	460	487	440	494	314						439	73
TD Break Elongation (%)	55	320	432	160	504						294	186
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	62.8	60.0	58.3	59.1	59.8	63.3	62.5	60.8	60.6	61.4	60.9	1.6
TD Tear Strength (lbs)	63.3	57.5	57.8	56.6	58.3	62.3	57.0	55.3	58.1	59.8	58.6	2.5
MD Machine Direction	TD Transverse Direction											



GEOMEMBRANE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE 60 mil Textured HDPE Geomembrane

Sample Identification: 108183169

TRI Log #: E2401-53-10

PARAMETER	TEST REPLICATE NUMBER										STD.	
	1	2	3	4	5	6	7	8	9	10	MEAN	DEV.
Thickness (ASTM D 5994)												
Thickness (mils)	67.5	67.4	67.8	68.1	66.7	62.9	64.6	65.3	66.1	65.3	66.2 62.9	1.7 << min
Asperity Height (GRI GM 12)												
Asperity Height (mils) - Side A	21	28	27	27	31	27	29	31	32	21	27	4
Asperity Height (mils) - Side B	37	28	32	23	27	24	25	28	19	22	27	5
Density (ASTM D 1505)												
Density (g/cm3)	0.947	0.947	0.948								0.947	0.001
Carbon Black Content (ASTM D 1603, mod.)												
% Carbon Black	2.49	2.47									2.48	0.01
Carbon Black Dispersion (ASTM D 5596)												
Rating - 1st field view	1	1	1	1	1							
Rating - 2nd field view	1	1	2	1	1							
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	184	172	189	189	174						182	8
TD Yield Strength (ppi)	180	177	187	179	188						182	5
MD Break Strength (ppi)	184	172	205	205	177						189	16
TD Break Strength (ppi)	148	184	200	176	172						176	19
MD Yield Elongation (%)	17	18	16	15	17						17	1
TD Yield Elongation (%)	17	16	16	16	16						16	0
MD Break Elongation (%)	453	455	493	498	430						466	29
TD Break Elongation (%)	280	493	494	458	436						432	89
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	56.7	60.5	66.3	63.2	60.9	61.8	63.5	61.8	57.6	60.9	61.3	2.8
TD Tear Strength (lbs)	56.2	60.0	57.8	58.1	61.4	60.8	59.5	55.8	58.6	54.3	58.3	2.3
MD Machine Direction	TD Transverse Direction											



GEOMEMBRANE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE 60 mil Textured HDPE Geomembrane

Sample Identification: 108183177

TRI Log #: E2401-53-10

PARAMETER	TEST REPLICATE NUMBER										STD.	
	1	2	3	4	5	6	7	8	9	10	MEAN	DEV.
Thickness (ASTM D 5994)												
Thickness (mils)	60.6	66.0	63.8	63.9	61.1	65.8	68.8	60.6	68.1	65.9	64.5 60.6	3.0 << min
Asperity Height (GRI GM 12)												
Asperity Height (mils) - Side A	23	22	20	22	24	24	21	21	24	28	23	2
Asperity Height (mils) - Side B	25	30	32	29	20	29	30	28	29	33	29	4
Density (ASTM D 1505)												
Density (g/cm3)	0.948	0.948	0.948								0.948	0.000
Carbon Black Content (ASTM D 1603, mod.)												
% Carbon Black	2.42	2.42									2.42	0.00
Carbon Black Dispersion (ASTM D 5596)												
Rating - 1st field view	1	1	1	1	1							
Rating - 2nd field view	1	1	1	1	1							
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	181	185	183	188	198						187	7
TD Yield Strength (ppi)	193	199	193	195	190						194	3
MD Break Strength (ppi)	147	155	203	231	185						184	35
TD Break Strength (ppi)	146	142	156	142	142						146	6
MD Yield Elongation (%)	18	19	17	18	16						18	1
TD Yield Elongation (%)	16	17	14	18	15						16	2
MD Break Elongation (%)	386	170	507	578	456						419	156
TD Break Elongation (%)	116	86	430	189	424						249	167
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	63.3	57.5	68.3	62.7	59.3	61.8	66.1	62.3	62.2	57.8	62.1	3.4
TD Tear Strength (lbs)	57.2	58.0	58.8	60.1	59.3	58.3	57.5	60.3	57.1	58.8	58.5	1.1
MD Machine Direction	TD Transverse Direction											

APPENDIX K GEOSYNTHETICS INVENTORY LISTING

Geosynthetics Inventory



Terracon Project No:

25809 Interstate 30
Bryant, AR 72202
Phone 501.847.9292
Fax 501.847.9210

Client Name: IESI Cherokee Village
Contractor: Comanco
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Manufacturer: GSE
Transportation: Flatbed
Date of Arrival: September-15
Material Type: 60 T HDPE
Condition of Material: Good

ROLL COUNT	ROLL NUMBER	RESIN OR LOT NO.	MATERIAL DIMENSIONS				QC/QA CERT.	CONF. SAMPLE	REMARKS
			LENGTH (FEET)	WIDTH (FEET)	SQUARE FEET	THICK (MILLS)			
1	108183160	D150520933	520	22.5	11700	58	Y	Y	
2	108183161	D150520933	520	22.5	11700	58	Y		
3	108183162	D150520933	520	22.5	11700	58	Y		
4	108183163	D150520933	520	22.5	11700	58	Y		
5	108183164	D150520933	520	22.5	11700	59	Y		
6	108183168	D150120036	520	22.5	11700	59	Y		
7	108183169	D150120036	520	22.5	11700	58	Y	Y	
8	108183170	D150120036	520	22.5	11700	58	Y		
9	108183171	D150120036	520	22.5	11700	59	Y		
10	108183172	D150120036	520	22.5	11700	59	Y		
11	108183173	D150120036	520	22.5	11700	58	Y		
12	108183174	D150120036	520	22.5	11700	58	Y		
13	108183175	D150120036	520	22.5	11700	58	Y		
14	108183176	D150120036	520	22.5	11700	58	Y		
15	108183177	D150120036	520	22.5	11700	58	Y	Y	
16	108183178	D150120036	520	22.5	11700	58	Y		
17	108183179	D150120036	520	22.5	11700	58	Y		
18	108183180	D150120036	520	22.5	11700	58	Y		
19	108183181	D150120036	520	22.5	11700	58	Y		
20									
21									
22									
23									
24									
25									

TOTAL THIS PAGE: 222,300 ft²
TOTAL ACCUMULATED: 222,300 ft²

Material Type Legend:

40S = 40 Mil Smooth HDPE Geomembrane
40T = 40 Mil Textured HDPE Geomembrane
60S = 60 Mil Smooth HDPE Geomembrane
60T = 60 Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
SSGC - Single Sided Geocomposite
8oz Geo - 8 ounce Geotextile
12oz Geo - 12 ounce Geotextile

Geosynthetics Inventory



Terracon Project No:

25809 Interstate 30
Bryant, AR 72202
Phone 501.847.9292
Fax 501.847.9210

Client Name: IESI Cherokee Village
Contractor: Comanco
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Manufacturer: GSE
Transportation: Flatbed Truck
Date of Arrival: October-15
Material Type: 8oz GEO
Condition of Material: Good

ROLL COUNT	ROLL NUMBER	RESIN OR LOT NO.	MATERIAL DIMENSIONS				QC/QA CERT.	CONF. SAMPLE	REMARKS
			LENGTH (FEET)	WIDTH (FEET)	SQUARE FEET	THICK (MILLS)			
1	130490946	-	600	15	9000	-	Y		
2	130490947	-	600	15	9000	-	Y		
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

TOTAL THIS PAGE: 18,000 ft²
TOTAL ACCUMULATED: 18,000 ft²

Material Type Legend:

40S = 40 Mil Smooth HDPE Geomembrane
40T = 40 Mil Textured HDPE Geomembrane
60S = 60 Mil Smooth HDPE Geomembrane
60T = 60 Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
SSGC - Single Sided Geocomposite
8oz Geo - 8 ounce Geotextile
12oz Geo - 12 ounce Geotextile

Geosynthetics Inventory



Terracon Project No:

25809 Interstate 30
Bryant, AR 72202
Phone 501.847.9292
Fax 501.847.9210

Client Name: IESI Cherokee Village

Manufacturer: GSE

Contractor: Comanco

Transportation: Flatbed Truck

Project Name: Cell B2

Date of Arrival: October-15

Address: 100 Landfill Road

Material Type: DSG

Location: Cherokee Village, AR 72529

Condition of Material: Good

ROLL COUNT	ROLL NUMBER	RESIN OR LOT NO.	MATERIAL DIMENSIONS				QC/QA CERT.	CONF. SAMPLE	REMARKS
			LENGTH (FEET)	WIDTH (FEET)	SQUARE FEET	THICK (MILLS)			
1	131476029	CFH611280	260	14.75	3835	219	Y	Y	
2	131476030	CFH611280	260	14.75	3835	220	Y		
3	131476031	CFH611280	260	14.75	3835	220	Y		
4	131476033	CFH611280	260	14.75	3835	220	Y		
5	131476034	CFH611280	260	14.75	3835	220	Y		
6	131476035	CFH611280	260	14.75	3835	220	Y		
7	131476036	CFH611280	260	14.75	3835	220	Y		
8	131476038	CFH611280	260	14.75	3835	220	Y		
9	131476039	CFH611280	260	14.75	3835	220	Y		
10	131476040	CFH611280	260	14.75	3835	220	Y		
11	131476041	CFH611280	260	14.75	3835	220	Y		
12	131476042	CFH611280	260	14.75	3835	220	Y		
13	131476043	CFH611280	260	14.75	3835	220	Y		
14	131476044	CFH611280	260	14.75	3835	220	Y		
15	131476045	CFH611280	260	14.75	3835	220	Y		
16	131476046	CFH611280	260	14.75	3835	220	Y		
17	131476047	CFH611280	260	14.75	3835	220	Y		
18	131476048	CFH611280	260	14.75	3835	220	Y		
19	131476049	CFH611280	260	14.75	3835	220	Y		
20	131476050	CFH611280	260	14.75	3835	220	Y		
21	131476051	CFH611280	260	14.75	3835	220	Y		
22	131476052	CFH611280	260	14.75	3835	220	Y		
23	131476053	CFH611280	260	14.75	3835	220	Y		
24	131476054	CFH611280	260	14.75	3835	220	Y		
25	131476055	CFH611280	260	14.75	3835	220	Y	Y	

TOTAL THIS PAGE: 95,875 ft²
TOTAL ACCUMULATED: 95,875 ft²

Material Type Legend:

40S = 40 Mil Smooth HDPE Geomembrane
 40T = 40 Mil Textured HDPE Geomembrane
 60S = 60 Mil Smooth HDPE Geomembrane
 60T = 60 Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
 SSGC - Single Sided Geocomposite
 8oz Geo - 8 ounce Geotextile
 12oz Geo - 12 ounce Geotextile

Geosynthetics Inventory



Terracon Project No:

25809 Interstate 30
Bryant, AR 72202
Phone 501.847.9292
Fax 501.847.9210

Client Name: IESI Cherokee Village

Manufacturer: GSE

Contractor: Comanco

Transportation: Flatbed Truck

Project Name: Cell B2

Date of Arrival: October-15

Address: 100 Landfill Road

Material Type: DSG

Location: Cherokee Village, AR 72529

Condition of Material: Good

ROLL COUNT	ROLL NUMBER	RESIN OR LOT NO.	MATERIAL DIMENSIONS				QC/QA CERT.	CONF. SAMPLE	REMARKS
			LENGTH (FEET)	WIDTH (FEET)	SQUARE FEET	THICK (MILLS)			
25	131476056	CFH611280	260	14.75	3835	223	Y		
26	131476057	CFH611280	260	14.75	3835	223	Y		
27	131476058	CFH611280	260	14.75	3835	223	Y		
28	131476059	CFH611280	260	14.75	3835	223	Y		
29	131476060	CFH611280	260	14.75	3835	223	Y		
30	131476061	CFH611280	260	14.75	3835	223	Y		
31	131476062	CFH611280	260	14.75	3835	223	Y		
32	131476063	CFH611280	260	14.75	3835	223	Y		
33	131476064	CFH611280	260	14.75	3835	223	Y		
34	131476065	CFH611280	260	14.75	3835	223	Y		
35	131476066	CFH611280	260	14.75	3835	223	Y		
36	131476067	CFH611280	260	14.75	3835	223	Y		
37	131476068	CFH611280	260	14.75	3835	223	Y		
38	131476069	CFH611280	260	14.75	3835	221	Y		
39	131476070	CFH611280	260	14.75	3835	221	Y		
40	131476071	CFH611280	260	14.75	3835	221	Y		
41	131476072	CFH611280	260	14.75	3835	221	Y		
42	131476073	CFH611280	260	14.75	3835	221	Y		
43	131476074	CFH611280	260	14.75	3835	221	Y		
44	131476075	CFH611280	260	14.75	3835	221	Y		
45	131476076	CFH611280	260	14.75	3835	221	Y		
46	131476077	CFH611280	260	14.75	3835	221	Y		
47	131476078	CFH611280	260	14.75	3835	221	Y		
48	131476079	CFH611280	260	14.75	3835	221	Y		
49									

TOTAL THIS PAGE: 92,040 ft²
TOTAL ACCUMULATED: 187,915 ft²

Material Type Legend:

40S = 40 Mil Smooth HDPE Geomembrane
 40T = 40 Mil Textured HDPE Geomembrane
 60S = 60 Mil Smooth HDPE Geomembrane
 60T = 60 Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
 SSGC - Single Sided Geocomposite
 8oz Geo - 8 ounce Geotextile
 12oz Geo - 12 ounce Geotextile

Geosynthetics Inventory



Terracon Project No:

25809 Interstate 30
Bryant, AR 72202
Phone 501.847.9292
Fax 501.847.9210

Client Name: IESI Cherokee Village

Manufacturer: GSE

Contractor: Comanco

Transportation: Flatbed Truck

Project Name: Cell B2

Date of Arrival: September-15

Address: 100 Landfill Road

Material Type: GCL

Location: Cherokee Village, AR 72529

Condition of Material: Good

ROLL COUNT	ROLL NUMBER	RESIN OR LOT NO.	MATERIAL DIMENSIONS				QC/QA CERT.	CONF. SAMPLE	REMARKS
			LENGTH (FEET)	WIDTH (FEET)	SQUARE FEET	THICK (MILLS)			
1	135038683	35091008	150	15.5	2325	-	Y	Y	
2	135038684	35091008	150	15.5	2325	-	Y		
3	135038685	35091008	150	15.5	2325	-	Y		
4	135038686	35091008	150	15.5	2325	-	Y		
5	135038687	35091008	150	15.5	2325	-	Y		
6	135038688	35091008	150	15.5	2325	-	Y		
7	135038689	35091008	150	15.5	2325	-	Y		
8	135038690	35091008	150	15.5	2325	-	Y		
9	135038691	35091008	150	15.5	2325	-	Y		
10	135038692	35091008	150	15.5	2325	-	Y		
11	135038693	35091008	150	15.5	2325	-	Y		
12	135038694	35091008	150	15.5	2325	-	Y		
13	135038695	35091008	150	15.5	2325	-	Y		
14	135038696	35091008	150	15.5	2325	-	Y		
15	135038697	35091008	150	15.5	2325	-	Y		
16	135038698	35091008	150	15.5	2325	-	Y		
17	135038699	35091008	150	15.5	2325	-	Y		
18	135038700	35091008	150	15.5	2325	-	Y		
19	135038701	35091008	150	15.5	2325	-	Y		
20	135038702	35091008	150	15.5	2325	-	Y		
21	135038703	35091008	150	15.5	2325	-	Y		
22	135038704	35091008	150	15.5	2325	-	Y		
23	135038705	35091008	150	15.5	2325	-	Y		
24	135038706	35091008	150	15.5	2325	-	Y		
25	135038712	35091008	150	15.5	2325	-	Y		

TOTAL THIS PAGE: 58,125 ft²
TOTAL ACCUMULATED: 58,125 ft²

Material Type Legend:

40S = 40 Mil Smooth HDPE Geomembrane
 40T = 40 Mil Textured HDPE Geomembrane
 60S = 60 Mil Smooth HDPE Geomembrane
 60T = 60 Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
 SSGC - Single Sided Geocomposite
 8oz Geo - 8 ounce Geotextile
 12oz Geo - 12 ounce Geotextile

Geosynthetics Inventory



Terracon Project No:

25809 Interstate 30
Bryant, AR 72202
Phone 501.847.9292
Fax 501.847.9210

Client Name: IESI Cherokee Village

Manufacturer: GSE

Contractor: Comanco

Transportation: Flatbed Truck

Project Name: Cell B2

Date of Arrival: September-15

Address: 100 Landfill Road

Material Type: GCL

Location: Cherokee Village, AR 72529

Condition of Material: Good

ROLL COUNT	ROLL NUMBER	RESIN OR LOT NO.	MATERIAL DIMENSIONS				QC/QA CERT.	CONF. SAMPLE	REMARKS
			LENGTH (FEET)	WIDTH (FEET)	SQUARE FEET	THICK (MILLS)			
26	135038713	35091008	150	15.5	2325	-	Y		
27	135038714	35091008	150	15.5	2325	-	Y		
28	135038715	35091008	150	15.5	2325	-	Y		
29	135038716	35091008	150	15.5	2325	-	Y		
30	135038717	35091008	150	15.5	2325	-	Y		
31	135038718	35091008	150	15.5	2325	-	Y		
32	135038719	35091008	150	15.5	2325	-	Y		
33	135038720	35091008	150	15.5	2325	-	Y		
34	135038721	35091008	150	15.5	2325	-	Y		
35	135038722	35091008	150	15.5	2325	-	Y		
36	135038723	35091008	150	15.5	2325	-	Y		
37	135038724	35091008	150	15.5	2325	-	Y		
38	135038725	35091008	150	15.5	2325	-	Y		
39	135038726	35091008	150	15.5	2325	-	Y		
40	135038746	35091108	150	15.5	2325	-	Y	Y	
41	135038747	35091108	150	15.5	2325	-	Y		
42	135038748	35091108	150	15.5	2325	-	Y		
43	135038749	35091108	150	15.5	2325	-	Y		
44	135038750	35091108	150	15.5	2325	-	Y		
45	135038751	35091108	150	15.5	2325	-	Y		
46	135038752	35091108	150	15.5	2325	-	Y		
47	135038753	35091108	150	15.5	2325	-	Y		
48	135038754	35091108	150	15.5	2325	-	Y		
49	135038755	35091108	150	15.5	2325	-	Y		
50	135038756	35091108	150	15.5	2325	-	Y		

TOTAL THIS PAGE: 58,125 ft²
TOTAL ACCUMULATED: 116,250 ft²

Material Type Legend:

40S = 40 Mil Smooth HDPE Geomembrane
 40T = 40 Mil Textured HDPE Geomembrane
 60S = 60 Mil Smooth HDPE Geomembrane
 60T = 60 Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
 SSGC - Single Sided Geocomposite
 8oz Geo - 8 ounce Geotextile
 12oz Geo - 12 ounce Geotextile

Geosynthetics Inventory



Terracon Project No:

25809 Interstate 30
Bryant, AR 72202
Phone 501.847.9292
Fax 501.847.9210

Client Name: IESI Cherokee Village

Manufacturer: GSE

Contractor: Comanco

Transportation: Flatbed Truck

Project Name: Cell B2

Date of Arrival: September-15

Address: 100 Landfill Road

Material Type: GCL

Location: Cherokee Village, AR 72529

Condition of Material: Good

ROLL COUNT	ROLL NUMBER	RESIN OR LOT NO.	MATERIAL DIMENSIONS				QC/QA CERT.	CONF. SAMPLE	REMARKS
			LENGTH (FEET)	WIDTH (FEET)	SQUARE FEET	THICK (MILLS)			
51	135038757	35091108	150	15.5	2325	-	Y		
52	135038758	35091108	150	15.5	2325	-	Y		
53	135038759	35091108	150	15.5	2325	-	Y		
54	135038760	35091108	150	15.5	2325	-	Y		
55	135038761	35091108	150	15.5	2325	-	Y		
56	135038762	35091108	150	15.5	2325	-	Y		
57	135038763	35091108	150	15.5	2325	-	Y		
58	135038764	35091108	150	15.5	2325	-	Y		
59	135038765	35091108	150	15.5	2325	-	Y		
60	135038766	35091108	150	15.5	2325	-	Y		
61	135038767	35091108	150	15.5	2325	-	Y		
62	135038768	35091108	150	15.5	2325	-	Y		
63	135038769	35091108	150	15.5	2325	-	Y		
64	135038770	35091108	150	15.5	2325	-	Y		
65	135038771	35091108	150	15.5	2325	-	Y		
66	135038772	35091108	150	15.5	2325	-	Y		
67	135038773	35091108	150	15.5	2325	-	Y		
68	135038774	35091108	150	15.5	2325	-	Y		
69	135038775	35091108	150	15.5	2325	-	Y		
70	135038776	35091108	150	15.5	2325	-	Y		
71	135038777	35091108	150	15.5	2325	-	Y		
72	135038778	35091108	150	15.5	2325	-	Y		
73	135038779	35091108	150	15.5	2325	-	Y		
74	135038780	35091108	150	15.5	2325	-	Y		
75	135038781	35091108	150	15.5	2325	-	Y		

TOTAL THIS PAGE: 58,125 ft²
TOTAL ACCUMULATED: 174,375 ft²

Material Type Legend:

40S = 40 Mil Smooth HDPE Geomembrane
 40T = 40 Mil Textured HDPE Geomembrane
 60S = 60 Mil Smooth HDPE Geomembrane
 60T = 60 Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
 SSGC - Single Sided Geocomposite
 8oz Geo - 8 ounce Geotextile
 12oz Geo - 12 ounce Geotextile

Geosynthetics Inventory



Terracon Project No:

25809 Interstate 30
Bryant, AR 72202
Phone 501.847.9292
Fax 501.847.9210

Client Name: IESI Cherokee Village

Manufacturer: GSE

Contractor: Comanco

Transportation: Flatbed Truck

Project Name: Cell B2

Date of Arrival: September-15

Address: 100 Landfill Road

Material Type: GCL

Location: Cherokee Village, AR 72529

Condition of Material: Good

ROLL COUNT	ROLL NUMBER	RESIN OR LOT NO.	MATERIAL DIMENSIONS				QC/QA CERT.	CONF. SAMPLE	REMARKS
			LENGTH (FEET)	WIDTH (FEET)	SQUARE FEET	THICK (MILLS)			
51	135038782	35091108	150	15.5	2325	-	Y		
52	135038783	35091108	150	15.5	2325	-	Y		
53	135038784	35091108	150	15.5	2325	-	Y		
54	135038785	35091108	150	15.5	2325	-	Y		
55	135038786	35091108	150	15.5	2325	-	Y		
56	135038787	35091108	150	15.5	2325	-	Y		
57	135038788	35091108	150	15.5	2325	-	Y		
58	135038789	35091108	150	15.5	2325	-	Y		
59	135038790	35091408	150	15.5	2325	-	Y		
60	135038791	35091408	150	15.5	2325	-	Y		
61	135038792	35091408	150	15.5	2325	-	Y	Y	
62	135038971	35091603	150	15.5	2325	-	Y	Y	
63	135038972	35091603	150	15.5	2325	-	Y		
64	135038973	35091603	150	15.5	2325	-	Y		
65	135038974	35091603	150	15.5	2325	-	Y		
66	135038975	35091603	150	15.5	2325	-	Y		
67	135038976	35091603	150	15.5	2325	-	Y		
68	135038977	35091603	150	15.5	2325	-	Y		
69	135038978	35091603	150	15.5	2325	-	Y		
70	135038979	35091603	150	15.5	2325	-	Y		
71									
72									
73									
74									
75									

TOTAL THIS PAGE: 46,500 ft²
TOTAL ACCUMULATED: 221,875 ft²

Material Type Legend:

40S = 40 Mil Smooth HDPE Geomembrane
40T = 40 Mil Textured HDPE Geomembrane
60S = 60 Mil Smooth HDPE Geomembrane
60T = 60 Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
SSGC - Single Sided Geocomposite
8oz Geo - 8 ounce Geotextile
12oz Geo - 12 ounce Geotextile

APPENDIX L
GEOMEMBRANE EQUIPMENT CALIBRATION
CERTIFICATE

DMD FORCE MEASUREMENT SYSTEMS
CERTIFICATE OF CALIBRATION

TRACEABLE TO THE UNITED STATES NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY AND PERFORMED IN ACCORDANCE WITH ANSI/NC SL Z540-

THIS DEVICE IS CERTIFIED TO BE WITHIN ± 0.50 % OF FULL SCALE READING AT EACH TEST POINT AT TIME OF SHIPMENT

CUSTOMER: COMANCO

MODEL NUMBER: SBO-1K

SERIAL NUMBER: 217864

CALIBRATED IN: Tensile

Applied Value	Expected Value	As Found	Run 1	Run 2	Run 3	Average	Full Scale Error
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0%
40.00	40.00	39.88	40.01	40.00	40.05	40.02	+0.01%
80.00	80.00	79.81	80.04	80.02	80.10	80.05	+0.01%
120.00	120.00	119.63	120.09	120.04	120.10	120.08	+0.02%
160.00	160.00	159.46	160.07	160.00	160.09	160.05	+0.01%
200.00	200.00	199.28	200.02	199.93	200.10	200.02	+0.01%
240.00	240.00	239.16	240.04	239.90	240.09	240.01	0%
280.00	280.00	278.03	280.00	279.86	280.11	279.99	0%
320.00	320.00	318.81	320.01	319.84	320.07	319.97	-0.01%
360.00	360.00	358.60	359.97	359.74	360.07	359.93	-0.02%
400.00	400.00	398.50	399.98	399.73	400.04	399.92	-0.02%

CALIBRATION EQUIPMENT USED:

Omega load cell s/n 1476853 and display s/n 0931501 cal by J.A. KING on report # GSO-16536-223573-1. Traceable to NIST. Cal date- 02/14/2014.

CALIBRATION DATE: 02/03/2015

CERTIFICATE NUMBER: 2803

EXPIRES 02/03/2016

CALIBRATED BY: DM

HUMIDITY: 43 %

TEMPERATURE: 72 F

4605 49TH STREET NORTH, ST. PETERSBURG, FLORIDA, 33709. PHONE - 727.388.9517

E-MAIL - Info@dmdfms.com

APPENDIX M

SUBGRADE ACCEPTANCE CERTIFICATE



ENVIRONMENTAL CORPORATION

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: COMANCO ENVIRONMENTAL CORPORATION

PROJECT NAME: Progressive Cherokee, LE. PROJECT NO: 07157416

LOCATION: Cherokee Village, AR. 72529

AREA ACCEPTED: West side slope and floor.

PANEL NUMBERS: 1-6

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: Progressive Cherokee, LE.

AUTHORIZED REPRESENTATIVE: _____

The undersigned, Thomas Terry, certifies that he/she is a representative of COMANCO Environmental Corporation authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on 10/14/2015 and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and COMANCO Environmental Corporation makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF COMANCO ENVIRONMENTAL

Thomas Terry Joe Man 10-14-2015
Signature Title DATE

OWNER REPRESENTATIVE

[Signature] Sr. Proj. Man 11.17.15
Signature Title DATE

4301 Sterling Commerce Dr, Plant City, FL. 33566 ~ (813) 988-8829 ~ FAX (813) 988-8779

REV 7/17/09

Rev 2/10/05



ENVIRONMENTAL CORPORATION

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: COMANCO ENVIRONMENTAL CORPORATION

PROJECT NAME: Progressive Cherokee LF PROJECT NO: 07157416

LOCATION: Cherokee Village, AR 72529

AREA ACCEPTED: Floor

PANEL NUMBERS: 7-11

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: Progressive Cherokee, LF

AUTHORIZED REPRESENTATIVE: _____

The undersigned, Thomas Terry, certifies that he/she is a representative of COMANCO Environmental Corporation authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on 10/15/2015 and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and COMANCO Environmental Corporation makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF COMANCO ENVIRONMENTAL

Joseph Gomez Foreman 10/15/15
Signature Title DATE

OWNER REPRESENTATIVE

[Signature] Sup. Reg. Man 11.17.15
Signature Title DATE

4301 Sterling Commerce Dr, Plant City, FL 33566 ~ (813) 988-8829 ~ FAX (813) 988-8779

REV 7/17/09

Rev 2/10/05



ENVIRONMENTAL CORPORATION

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: COMANCO ENVIRONMENTAL CORPORATION

PROJECT NAME: Cherokee Landfill Cell B2 Install PROJECT NO: 07157416

LOCATION: Cherokee Village, AR 72529

AREA ACCEPTED: Floor.

PANEL NUMBERS: 12-24

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: Progressive Cherokee, LF.

AUTHORIZED REPRESENTATIVE: _____

The undersigned, Thomas Terry, certifies that he/she is a representative of COMANCO Environmental Corporation authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on 10/16/2015 and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and COMANCO Environmental Corporation makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF COMANCO ENVIRONMENTAL

Jorge Gomez
Signature

Foreman
Title

10-16-15
DATE

OWNER REPRESENTATIVE

[Signature]
Signature

Sr. Proj. Mgr.
Title

11.17.15
DATE

4301 Sterling Commerce Dr, Plant City, FL. 33566 ~ (813) 988-8829 ~ FAX (813) 988-8779

REV 7/17/09

Rev 2/10/05



ENVIRONMENTAL CORPORATION

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: COMANCO ENVIRONMENTAL CORPORATION

PROJECT NAME: Cherokee Landfill Cell B2/Instal PROJECT NO: 07157416

LOCATION: Cherokee Village, AL 32529

AREA ACCEPTED: Floor

PANEL NUMBERS: 25 - 36

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: Progressive Cherokee, LF

AUTHORIZED REPRESENTATIVE: _____

The undersigned, Thomas Terry, certifies that he/she is a representative of COMANCO Environmental Corporation authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on 10/17/2015 and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and COMANCO Environmental Corporation makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF COMANCO ENVIRONMENTAL

Jorge Gomez
Signature

foreman
Title

10-17-15
DATE

OWNER REPRESENTATIVE

[Signature]
Signature

Sr. Proj. Mgr.
Title

11.17.15
DATE

4301 Sterling Commerce Dr, Plant City, FL. 33566 ~ (813) 988-8829 ~ FAX (813) 988-8779

REV 7/17/09

Rev 2/10/05



CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: COMANCO CORPORATION

PROJECT NAME: Cherokee Landfill Cell B2 Install PROJECT NO.: 07157416
LOCATION: Cherokee Village, AR 72529
AREA ACCEPTED: Floor.
PANEL NUMBERS: 37-38 GRADE ACCEPTANCE: INSPECTOR: _____
GENERAL CONTRACTOR: _____
OWNER: Progressive Cherokee, LF.
AUTHORIZED REPRESENTATIVE: _____

The undersigned, Thomas Terry, certifies the he/she is a representative of COMANCO Corporation authorized to execute this certificate, that he/she has visually inspected the subgrade surface above on 10/19/2015 and found the surface to be acceptable for the installation of the membrane. This certification is based on observation of the surface of the subgrade only. No subsurface inspections or tests have been performed and COMANCO Corporation makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF COMANCO CORPORATION:

George Gomer Foreman 10-19-15
SIGNATURE TITLE DATE

AUTHORIZED REPRESENTATIVE OF EARTHWORK CONTRACTOR:

N/A
SIGNATURE TITLE DATE

OWNER'S REPRESENTATIVE:

Del M. C. Sr. Proj. Mgr. 11.17.15
SIGNATURE TITLE DATE



CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: COMANCO CORPORATION

PROJECT NAME: Cherokee Landfill Cell B2 Install PROJECT NO.: 07157416

LOCATION: Cherokee Village, AR 72529

AREA ACCEPTED: floor

PANEL NUMBERS: 39-63 GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: Progressive Cherokee, LLC

AUTHORIZED REPRESENTATIVE: _____

The undersigned, Thomas Perry, certifies that he/she is a representative of COMANCO Corporation authorized to execute this certificate, that he/she has visually inspected the subgrade surface above on 10/20/2015 and found the surface to be acceptable for the installation of the membrane. This certification is based on observation of the surface of the subgrade only. No subsurface inspections or tests have been performed and COMANCO Corporation makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF COMANCO CORPORATION:

<u>Dorl Homer</u>	<u>Foreman</u>	<u>10-20-15</u>
SIGNATURE	TITLE	DATE

AUTHORIZED REPRESENTATIVE OF EARTHWORK CONTRACTOR:

<u>N/A</u>		
SIGNATURE	TITLE	DATE

OWNER'S REPRESENTATIVE:

<u>D. M. C.</u>	<u>Sr. Proj. Manager</u>	<u>11.17.15</u>
SIGNATURE	TITLE	DATE



CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: COMANCO CORPORATION

PROJECT NAME: Cherokee Landfill Cell B2 Install PROJECT NO.: 07157416

LOCATION: Cherokee Village, AR 72529

AREA ACCEPTED: floor.

PANEL NUMBERS: 64-68 GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: Progressive Cherokee LF.

AUTHORIZED REPRESENTATIVE: _____

The undersigned, Thomas Terry, certifies the he/she is a representative of COMANCO Corporation authorized to execute this certificate, that he/she has visually inspected the subgrade surface above on 10/21/2015 and found the surface to be acceptable for the installation of the membrane. This certification is based on observation of the surface of the subgrade only. No subsurface inspections or tests have been performed and COMANCO Corporation makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF COMANCO CORPORATION:

Jorge Gomez foreman 10-21-15
SIGNATURE TITLE DATE

AUTHORIZED REPRESENTATIVE OF EARTHWORK CONTRACTOR:

NA _____
SIGNATURE TITLE DATE

OWNER'S REPRESENTATIVE:

DJ M. L. Sr. Proj. Mgr. 11.17.15
SIGNATURE TITLE DATE



CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: COMANCO CORPORATION

PROJECT NAME: Cherokee Landfill Cell B2 Install PROJECT NO.: 0715 7416

LOCATION: Cherokee Village, AR 72529

AREA ACCEPTED: Floor.

PANEL NUMBERS: 69-72 GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: Progressive Cherokee LF.

AUTHORIZED REPRESENTATIVE: _____

The undersigned, Thomas Terry, certifies the he/she is a representative of COMANCO Corporation authorized to execute this certificate, that he/she has visually inspected the subgrade surface above on 10/22/2015 and found the surface to be acceptable for the installation of the membrane. This certification is based on observation of the surface of the subgrade only. No subsurface inspections or tests have been performed and COMANCO Corporation makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF COMANCO CORPORATION:

George Gomez Foreman 10-22-15
SIGNATURE TITLE DATE

AUTHORIZED REPRESENTATIVE OF EARTHWORK CONTRACTOR:

N/A
SIGNATURE TITLE DATE

OWNER'S REPRESENTATIVE:

DJ M W Sr. Project Manager 11.17.15
SIGNATURE TITLE DATE

APPENDIX N

GEOMEMBRANE DAILY DEPLOYMENT LOGS

Geosynthetics Daily Deployment Log



Client Name: IESI Cherokee Village
Contractor: Twehous
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

25809 Interstate 30 South
 Bryant, Arkansas 72022
 (501) 847-9292

Date	Panel ID	Roll Number	Weather Conditions		Material Type	Approximate Panel Dimensions		Panel Visually Inspected (Y or N)	CQA Monitor
			Amb. Temp. (°F)	Weather/ Wind		Length (Feet)	Width (Feet)		
10/14/15	P-1	3174	84	Sunny 5mph	60T	352	22	Y	AZ
10/14/15	P-2	3174	84	Sunny 5mph	60T	139	22	Y	AZ
10/14/15	P-3	3180	84	Sunny 5mph	60T	212	22	Y	AZ
10/14/15	P-4	3180	84	Sunny 5mph	60T	255	22	Y	AZ
10/14/15	P-5	3178	84	Sunny 5mph	60T	97	22	Y	AZ
10/14/15	P-6	3178	84	Sunny 5mph	60T	352	22	Y	AZ
10/15/15	P-7	3179	82	Sunny 5mph	60T	217	22	Y	AZ
10/15/15	P-8	3179	82	Sunny 5mph	60T	46	22	Y	AZ
10/15/15	P-9	3179	82	Sunny 5mph	60T	171	22	Y	AZ
10/15/15	P-10	3173	82	Sunny 5mph	60T	217	22	Y	AZ
10/15/15	P-11	3173	82	Sunny 5mph	60T	217	22	Y	AZ
10/16/15	P-12	3176	70	Sunny 7mph	60T	95	12	Y	AZ
10/16/15	P-13	3176	70	Sunny 7mph	60T	95	15	Y	AZ
10/16/15	P-14	3176	71	Sunny 7mph	60T	97	12	Y	AZ
10/16/15	P-15	3176	71	Sunny 7mph	60T	97	12	Y	AZ
10/16/15	P-16	3176	72	Sunny 7mph	60T	94	12	Y	AZ
10/16/15	P-17	3176	72	Sunny 7mph	60T	91	12	Y	AZ
10/16/15	P-18	3161	72	Sunny 7mph	60T	212	22	Y	AZ
10/16/15	P-19	3161	72	Sunny 7mph	60T	178	22	Y	AZ
10/16/15	P-20	3161	72	Sunny 7mph	60T	124	22	Y	AZ

Material Type Legend:

60S - 60-Mil Smooth HDPE Geomembrane
 60T - 60-Mil Textured HDPE Geomembrane
 40S - 40-Mil Smooth HDPE Geomembrane
 40T - 40-Mil Textured HDPE Geomembrane

DSGC - Double Sided Geocomposite
 SSGC - Single Sided Geocomposite
 8oz Geo - 8 ounce Geotextile
 12oz Geo - 12 ounce Geotextile

50 SG - 50-Mil LLDPE Super Gripnet
 50 MS - 50-Mil HDPE Microspike

Geosynthetics Daily Deployment Log



Client Name: IESI Cherokee Village
Contractor: Twehous
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

25809 Interstate 30 South
 Bryant, Arkansas 72022
 (501) 847-9292

Date	Panel ID	Roll Number	Weather Conditions		Material Type	Approximate Panel Dimensions		Panel Visually Inspected (Y or N)	CQA Monitor
			Amb. Temp. (°F)	Weather/ Wind		Length (Feet)	Width (Feet)		
10/16/15	P-21	3162	72	Sunny 7mph	60T	149	22	Y	AZ
10/16/15	P-22	3162	72	Sunny 7mph	60T	210	22	Y	AZ
10/16/15	P-23	3162	72	Sunny 7mph	60T	152	22	Y	AZ
10/16/15	P-24	3176	72	Sunny 7mph	60T	52	22	Y	AZ
10/17/15	P-25	3176	48	Sunny 5mph	60T	110	22	Y	AZ
10/17/15	P-26	3163	48	Sunny 5mph	60T	95	22	Y	AZ
10/17/15	P-27	3163	50	Sunny 5mph	60T	209	22	Y	AZ
10/17/15	P-28	3163	50	Sunny 5mph	60T	209	22	Y	AZ
10/17/15	P-29	3181	55	Sunny 5mph	60T	209	22	Y	AZ
10/17/15	P-30	3181	55	Sunny 5mph	60T	209	22	Y	AZ
10/17/15	P-31	3181	55	Sunny 5mph	60T	97	22	Y	AZ
10/17/15	P-32	3177	55	Sunny 5mph	60T	113	22	Y	AZ
10/17/15	P-33	3160	62	Sunny 5mph	60T	204	22	Y	AZ
10/17/15	P-34	3160	62	Sunny 5mph	60T	199	22	Y	AZ
10/17/15	P-35	3170	62	Sunny 5mph	60T	14	22	Y	AZ
10/17/15	P-36	3170	62	Sunny 5mph	60T	109	22	Y	AZ
10/19/15	P-37	3170	64	Sunny 5mph	60T	28	22	Y	AZ
10/19/15	P-38	3170	64	Sunny 5mph	60T	28	22	Y	AZ
10/20/15	P-39	3168	58	Sunny 5mph	60T	110	22	Y	AZ
10/20/15	P-40	3168	58	Sunny 5mph	60T	110	22	Y	AZ

Material Type Legend:

60S - 60-Mil Smooth HDPE Geomembrane
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Geosynthetics Daily Deployment Log



Client Name: IESI Cherokee Village
Contractor: Twehous
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

25809 Interstate 30 South
 Bryant, Arkansas 72022
 (501) 847-9292

Date	Panel ID	Roll Number	Weather Conditions		Material Type	Approximate Panel Dimensions		Panel Visually Inspected (Y or N)	CQA Monitor
			Amb. Temp. (°F)	Weather/ Wind		Length (Feet)	Width (Feet)		
10/20/15	P-41	3168	67	Sunny 5mph	60T	72	22	Y	AZ
10/20/15	P-42	3170	67	Sunny 5mph	60T	153	22	Y	AZ
10/20/15	P-43	3170	68	Sunny 5mph	60T	74	22	Y	AZ
10/20/15	P-44	3175	68	Sunny 5mph	60T	151	22	Y	AZ
10/20/15	P-45	3175	68	Sunny 5mph	60T	224	22	Y	AZ
10/20/15	P-46	3175	69	Sunny 5mph	60T	141	22	Y	AZ
10/20/15	P-47	3172	69	Sunny 5mph	60T	83	22	Y	AZ
10/20/15	P-48	3172	70	Sunny 5mph	60T	221	22	Y	AZ
10/20/15	P-49	3172	70	Sunny 5mph	60T	221	22	Y	AZ
10/20/15	P-50	3171	70	Sunny 5mph	60T	221	22	Y	AZ
10/20/15	P-51	3171	71	Sunny 5mph	60T	7	22	Y	AZ
10/20/15	P-52	3171	72	Sunny 5mph	60T	220	22	Y	AZ
10/20/15	P-53	3171	72	Sunny 5mph	60T	68	22	Y	AZ
10/20/15	P-54	3169	73	Sunny 5mph	60T	152	22	Y	AZ
10/20/15	P-55	3169	74	Sunny 5mph	60T	282	22	Y	AZ
10/20/15	P-56	3169	75	Sunny 5mph	60T	78	22	Y	AZ
10/20/15	P-57	3164	75	Sunny 5mph	60T	204	22	Y	AZ
10/20/15	P-58	3164	75	Sunny 5mph	60T	26	5	Y	AZ
10/20/15	P-59	3164	75	Sunny 5mph	60T	23	5	Y	AZ
10/20/15	P-60	3164	76	Sunny 5mph	60T	25	5	Y	AZ

Material Type Legend:

60S - 60-Mil Smooth HDPE Geomembrane
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 12oz Geo - 12 ounce Geotextile

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 50 MS - 50-Mil HDPE Microspike

Geosynthetics Daily Deployment Log



Client Name: IESI Cherokee Village
Contractor: Twehous
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

25809 Interstate 30 South
Bryant, Arkansas 72022
(501) 847-9292

Date	Panel ID	Roll Number	Weather Conditions		Material Type	Approximate Panel Dimensions		Panel Visually Inspected (Y or N)	CQA Monitor
			Amb. Temp. (°F)	Weather/ Wind		Length (Feet)	Width (Feet)		
10/20/15	P-61	3164	76	Sunny 5mph	60T	25	5	Y	AZ
10/20/15	P-62	3176	76	Sunny 5mph	60T	72	5	Y	AZ
10/20/15	P-63	3176	76	Sunny 5mph	60T	67	5	Y	AZ
10/21/15	P-64	3164	72	Sunny 5mph	60T	174	6	Y	AZ
10/21/15	P-65	3164	75	Sunny 5mph	60T	172	6	Y	AZ
10/21/15	P-66	3164	80	Sunny 5mph	60T	119	10	Y	AZ
10/21/15	P-67	3164	80	Sunny 5mph	60T	99	10	Y	AZ
10/21/15	P-68	3164	80	Sunny 5mph	60T	30	22	Y	AZ
10/22/15	P-69	3179	75	Sunny 5mph	60T	57	4	Y	AZ
10/22/15	P-70	3179	75	Sunny 5mph	60T	69	4	Y	AZ
10/22/15	P-71	3179	75	Sunny 5mph	60T	72	4	Y	AZ
10/22/15	P-72	3179	75	Sunny 5mph	60T	72	4	Y	AZ

Material Type Legend:

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 60T - 60-Mil Textured HDPE Geomembrane
 40S - 40-Mil Smooth HDPE Geomembrane
 40T - 40-Mil Textured HDPE Geomembrane

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APPENDIX O

GEOMEMBRANE TRIAL WELD SUMMARY

Geomembrane Trial Weld Summary



25809 Interstate 30 South

Bryant, Arkansas 72022

Phone 501.847.9292

Fax 501.847.9210

Client Name: IESI Cherokee Village
Contractor: Twehous
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Specification for Trial Welds	
Peel Extrusion =	78
Shear Extrusion =	120
Peel Fusion =	91
Shear Fusion =	120

Date	Time	Ambient Temp °F	Sample ID	QC Initials	Machine Number	Seamer Initials	Weld Type	Fusion Weld		Extrusion Weld		Test Values lbs/inch										Pass or Fail	
								Wedge Temp °F	Speed ft/hr	Temp °F	Preheat Setting												
10/14/15	9:20	63	TW-1	AZ	55	TA	F	850	7.5	-	-	P	125	128	132	112	118	131	133	130	129	135	P
												S	159		156		172		164		170		
10/14/15	9:45	65	TW-2	AZ	55	TA	F	850	7.0	-	-	P	122	129	127	130	129	133	130	134	118	126	P
												S	154		161		163		161		152		
10/14/15	13:30	86	TW-3	AZ	99	MF	F	860	7.5	-	-	P	116	115	129	116	98	112	126	123	129	123	P
												S	151		153		157		157		146		
10/14/15	13:35	86	TW-4	AZ	99	MF	F	860	7.5	-	-	P	119	120	111	132	122	118	121	113	118	107	P
												S	144		147		146		143		144		
10/14/15	16:20	84	TW-5	AZ	75	TA	E	-	-	520	500	P	140	-	112	-	125	-	134	-	127	-	P
												S	172		187		176		174		167		
10/15/15	7:40	56	TW-6	AZ	75	JP	E	-	-	550	500	P	140	-	112	-	125	-	134	-	127	-	P
												S	172		187		176		174		167		
10/15/15	8:10	56	TW-7	AZ	75	JP	E	-	-	550	500	P	117	-	117	-	138	-	143	-	126	-	P
												S	167		169		167		169		155		
10/15/15	12:45	85	TW-8	AZ	34	MF	F	850	9.0	-	-	P	119	110	123	119	113	117	114	118	112	107	P
												S	149		151		150		152		147		
10/15/15	12:50	85	TW-9	AZ	34	MF	F	850	8.0	-	-	P	118	138	138	134	133	127	128	130	112	107	P
												S	145		149		148		150		145		
10/15/15	14:40	90	TW-10	AZ	55	TA	F	850	7.0	-	-	P	104	108	107	109	108	105	107	114	105	101	P
												S	131		131		129		127		127		
10/16/15	9:50	60	TW-11	AZ	34	MF	F	850	9.0	-	-	P	121	119	118	116	121	121	123	122	128	110	P
												S	169		175		178		180		174		
10/16/15	9:55	60	TW-12	AZ	34	MF	F	850	8.0	-	-	P	139	129	126	130	131	140	117	143	122	138	P
												S	177		177		182		177		178		
10/16/15	10:05	60	TW-13	AZ	34	MF	F	850	9.0	-	-	P	124	118	119	120	126	126	127	132	126	123	P
												S	174		176		173		177		174		
10/16/15	14:10	70	TW-14	AZ	34	MF	F	850	9.0	-	-	P	120	125	126	125	123	125	130	125	122	118	P
												S	172		169		175		173		171		
10/16/15	14:15	70	TW-15	AZ	34	MF	F	850	8.0	-	-	P	128	117	115	124	120	129	127	118	126	136	P
												S	168		162		169		166		168		

Geomembrane Trial Weld Summary



25809 Interstate 30 South

Bryant, Arkansas 72022

Phone 501.847.9292

Fax 501.847.9210

Client Name: IESI Cherokee Village
Contractor: Twehous
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Specification for Trial Welds	
Peel Extrusion =	78
Shear Extrusion =	120
Peel Fusion =	91
Shear Fusion =	120

Date	Time	Ambient Temp °F	Sample ID	QC Initials	Machine Number	Seamer Initials	Weld Type	Fusion Weld		Extrusion Weld		Test Values lbs/inch										Pass or Fail	
								Wedge Temp °F	Speed ft/hr	Temp °F	Preheat Setting												
10/16/15	14:05	70	TW-16	AZ	34	MF	F	850	8.0	-	-	P	138	133	130	137	145	139	134	144	138	131	P
												S	170			176		176		172		176	
10/16/15	15:30	70	TW-17	AZ	75	JP	F	-	-	550	550	P	136	-	139	-	142	-	137	-	136	-	P
												S	168			173		171		171		168	
10/16/15	15:10	70	TW-18	AZ	55	EV	F	850	8.5	-	-	P	137	138	132	142	137	126	125	122	126	117	P
												S	171			174		170		175		172	
10/16/15	15:55	70	TW-19	AZ	55	EV	F	850	7.5	-	-	P	144	142	127	140	130	149	152	142	147	138	P
												S	167			166		170		160		155	
10/17/15	7:45	45	TW-20	AZ	75	TA	E	-	-	550	550	P	181	-	174	-	170	-	175	-	177	-	P
												S	188			183		187		179		185	
10/17/15	10:30	53	TW-21	AZ	34	MF	F	850	9.0	-	-	P	129	133	126	128	130	125	126	135	134	122	P
												S	174			184		182		180		180	
10/17/15	10:35	48	TW-22	AZ	34	MF	F	850	8.0	-	-	P	139	115	119	125	123	123	136	137	139	142	P
												S	186			182		184		185		180	
10/17/15	11:00	54	TW-23	AZ	55	EV	F	850	7.5	-	-	P	138	130	127	135	122	123	125	122	120	122	P
												S	179			178		177		183		176	
10/17/15	12:45	70	TW-24	AZ	75	MS	E	-	-	550	550	P	110	-	116	-	119	-	128	-	124	-	P
												S	166			164		172		154		153	
10/17/15	12:50	70	TW-25	AZ	55	EV	F	850	7.5	-	-	P	132	127	125	129	121	126	125	128	121	121	P
												S	182			186		180		183		180	
10/17/15	15:05	72	TW-26	AZ	34	MF	F	850	8.0	-	-	P	140	137	142	134	157	147	136	148	136	131	P
												S	184			182		176		174		178	
10/19/15	7:45	42	TW-27	AZ	75	TA	E	-	-	550	550	P	106	-	140	-	120	-	117	-	129	-	P
												S	187			178		185		180		178	
10/19/15	7:30	50	TW-28	AZ	22	JP	E	-	-	550	550	P	110	-	99	-	102	-	115	-	110	-	P
												S	181			174		185		184		168	
10/19/15	9:15	53	TW-29	AZ	76	MF	E	-	-	550	550	P	65	-	53	-	91	-	53	-	53	-	F
												S	-			-		-		-		-	
10/19/15	9:39	55	TW-30	AZ	76	MF	E	-	-	550	550	P	83	-	117	-	86	-	123	-	119	-	P
												S	180			165		176		181		175	

Geomembrane Trial Weld Summary



25809 Interstate 30 South

Bryant, Arkansas 72022

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Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Specification for Trial Welds	
Peel Extrusion =	78
Shear Extrusion =	120
Peel Fusion =	91
Shear Fusion =	120

Date	Time	Ambient Temp °F	Sample ID	QC Initials	Machine Number	Seamer Initials	Weld Type	Fusion Weld		Extrusion Weld		Test Values lbs/inch										Pass or Fail	
								Wedge Temp °F	Speed ft/hr	Temp °F	Preheat Setting												
10/19/15	13:00	70	TW-31	AZ	76	MF	E	-	-	550	550	P	103	-	149	-	121	-	124	-	98	-	P
												S	150		164		166		161		158		
10/19/15	13:05	70	TW-32	AZ	75	TA	E	-	-	550	550	P	123	-	109	-	128	-	124	-	122	-	P
												S	145		141		144		144		126		
10/19/15	13:10	70	TW-33	AZ	22	JP	E	-	-	550	550	P	120	-	119	-	123	-	109	-	121	-	P
												S	144		148		143		148		139		
10/20/15	7:40	48	TW-34	AZ	22	JP	E	-	-	550	550	P	92	-	100	-	103	-	129	-	106	-	P
												S	195		195		201		197		192		
10/20/15	8:00	50	TW-35	AZ	55	EV	F	850	8.0	-	-	P	130	135	130	134	122	130	131	128	130	125	P
												S	191		201		200		205		195		
10/20/15	8:10	51	TW-36	AZ	34	MS	F	850	9.0	-	-	P	139	134	135	136	149	132	129	128	139	145	P
												S	199		205		206		205		199		
10/20/15	8:15	51	TW-37	AZ	34	MF	F	850	8.0	-	-	P	121	137	145	150	134	122	133	139	139	148	P
												S	194		200		197		197		189		
10/20/15	13:00	76	TW-38	AZ	22	JP	E	-	-	550	550	P	91	-	104	-	103	-	108	-	102	-	P
												S	156		158		162		157		157		
10/20/15	13:04	76	TW-39	AZ	55	EV	F	850	8.0	-	-	P	116	116	119	119	117	119	121	116	112	113	P
												S	153		154		155		158		151		
10/20/15	13:10	76	TW-40	AZ	34	MF	F	850	8.0	-	-	P	119	129	125	126	127	135	130	137	116	118	P
												S	165		168		167		170		165		
10/20/15	13:15	76	TW-41	AZ	34	MF	F	850	9.0	-	-	P	130	132	125	131	117	123	122	126	133	121	P
												S	165		171		168		176		169		
10/20/15	13:20	76	TW-42	AZ	34	MF	F	850	8.0	-	-	P	108	117	120	125	112	117	106	121	124	115	P
												S	151		155		151		155		149		
10/21/15	8:44	60	TW-43	AZ	22	JP	E	-	-	550	550	P	135	-	128	-	106	-	104	-	109	-	P
												S	191		188		190		189		175		
10/21/15	8:00	60	TW-44	AZ	55	TA	F	850	7.0	-	-	P	124	127	128	123	123	123	132	128	131	120	P
												S	172		188		188		177		178		
10/21/15	8:05	60	TW-45	AZ	55	TA	E	850	8.0	-	-	P	125	123	119	118	121	117	122	125	119	123	P
												S	156		153		153		154		151		

Geomembrane Trial Weld Summary



25809 Interstate 30 South

Bryant, Arkansas 72022

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Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Specification for Trial Welds	
Peel Extrusion =	78
Shear Extrusion =	120
Peel Fusion =	91
Shear Fusion =	120

Date	Time	Ambient Temp °F	Sample ID	QC Initials	Machine Number	Seamer Initials	Weld Type	Fusion Weld		Extrusion Weld		Test Values lbs/inch								Pass or Fail		
								Wedge Temp °F	Speed ft/hr	Temp °F	Preheat Setting											
10/21/15	13:10	84	TW-46	AZ	22	JP	E	-	-	500	500	P 128	-	114	-	90	-	115	-	116	-	P
												S 156		153		153		154		151		
10/21/15	8:10	46	TW-47	AZ	55	TA	F	850	7.0	-	-	P 139	129	139	143	127	131	127	130	130	131	P
												S 159		155		156		154		156		
10/21/15	13:10	47	TW-48	AZ	22	JP	E	-	-	500	500	P 131	-	131	-	130	-	128	-	121	-	P
												S 138		136		141		137		140		
10/21/15	13:20	85	TW-49	AZ	75	TA	E	-	-	500	480	P 135	-	129	-	133	-	123	-	124	-	P
												S 162		158		155		161		153		
10/21/15	13:30	85	TW-50	AZ	34	MF	F	850	8.0	-	-	P 131	131	130	126	121	133	128	133	130	128	P
												S 141		139		140		138		141		
10/22/15	15:43	80	TW-51	AZ	34	MF	F	850	8.0	-	-	P 113	111	100	114	117	122	113	118	120	120	P
												S 151		157		148		155		147		
10/22/15	18:00	72	TW-52	AZ	22	JP	E	-	-	550	550	P 120	-	124	-	118	-	117	-	116	-	P
												S 144		149		158		154		151		
10/24/15	8:00	63	TW-53	PG	22	JP	E	-	-	550	550	P 143	-	132	-	137	-	141	-	136	-	P
												S 158		162		160		157		161		
10/26/15	13:00	65	TW-54	PG	22	JP	E	-	-	550	550	P 145	-	152	-	148	-	150	-	143	-	P
												S 188		191		193		189		194		
10/26/15	15:00	63	TW-55	PG	22	JP	E	-	-	550	550	P 102	-	91	-	98	-	120	-	116	-	P
												S 180		167		179		158		173		
10/28/15	10:10	62	TW-56	PG	22	JP	E	-	-	550	550	P 112	-	109	-	105	-	108	-	121	-	P
												S 170		160		166		155		155		
10/28/15	10:25	62	TW-57	PG	22	JP	E	-	-	550	550	P 114	-	114	-	99	-	98	-	111	-	P
												S 172		175		176		172		176		
10/28/15	13:30	63	TW-58	PG	22	JP	E	-	-	550	550	P 145	-	139	-	143	-	142	-	137	-	P
												S 165		172		167		172		168		
10/29/15	8:05	53	TW-59	PG	22	JP	E	-	-	550	550	P 144	-	128	-	133	-	128	-	138	-	P
												S 180		164		166		163		166		
10/29/15	8:15	59	TW-60	PG	76	MF	E	-	-	550	550	P 119	-	129	-	116	-	103	-	108	-	P
												S 155		153		157		157		152		

Terracon

Fax 501.847.9210

Liner Installer: Comanco

[illegible]

APPENDIX P

GEOMEMBRANE PANEL SEAMING AND NON DESTRUCTIVE TESTING SUMMARY

Geomembrane Seaming and Non-Destructive Test Summary



25809 Interstate 30 South

Bryant, AR 72022

Phone: 501.847.9292

Fax: 501.847.9210

Client Name: IESI Cherokee Village

Contractor: Twehous

Project Name: Cell B2

Address: 100 Landfill Road

Location: Cherokee Village, AR 72529

Project Number: 35157094

CQA Monitor: Adam Zimmerman

Reviewed By: Dave McCormick, P.E.

Approved By: Dave McCormick, P.E.

Liner Installer: Comanco

Machine No. MF-A099, TA-A055, EV-A055, MF-A034, JP-22

Carry Over: 0 ft

PRODUCTION SEAM				LOCATION AND DISTANCE				NON-DESTRUCTIVE TESTING							QA ID	Destruct No.
Date	Time	Seamer Initials	Seam Number	Length (ft)	Location From - To	Accum Length (ft)		Pressure			Time		Air Test P/F	Vac Box P/F		
								Start	End	+/-	Start	End				
10/14/15	2:15	MF	P2 - P3	22.0	1-4	22.0	10/14/15	30	30	0	4:13	4:18	P		AZ	
10/14/15	2:23	MF	P1 - P2	139.0	3-9	161.0	10/14/15	30	28	-2	3:40	3:45	P		AZ	DS1A,1B
10/14/15	2:36	MF	P1 - P3	212.0	2-W.AT	373.0	10/14/15	30	30	0	3:53	3:58	P		AZ	
10/14/15	3:01	MF	P4 - P5	22.0	3-6	395.0	10/14/15	30	30	0	7:55	8:00	P		AZ	DS3
10/14/15	3:42	MF	P3 - P5	97.0	4-W.AT	492.0	10/14/15	30	29	-1	5:10	5:15	P		AZ	
10/14/15	3:32	MF	P3 - P4	116.0	2-5	608.0	10/14/15	30	30	0	5:03	5:08	P		AZ	
10/14/15	3:20	MF	P2 - P4	139.0	3-10	747.0	10/14/15	30	30	0	9:05	9:10	P		AZ	
10/14/15	4:30	TA	P1 - TIE	83.0	7-E.EOS	830.0	10/14/15	30	29	-1	4:58	5:03	P		AZ	
10/14/15	4:00	TA	P1 - TIE	28.0	E.EOS-W.EOS	858.0	10/14/15	30	30	0	4:48	4:53	P		AZ	
10/14/15	3:45	TA	P1 - TIE	17.0	E.EOS-W.EOS	875.0	10/14/15	30	30	0	4:42	4:47	P		AZ	
10/14/15	3:38	TA	P1 - TIE	81.0	E.EOS-W.EOS	956.0	10/14/15	30	30	0	4:40	4:45	P		AZ	DS2
10/14/15	3:15	TA	P1 - TIE	6.0	E.EOS-W.EOS	962.0	10/14/15	30	30	0	4:22	4:27	P		AZ	
10/14/15	2:43	TA	P1 - TIE	115.0	E.EOS-W.EOS	1077.0	10/14/15	30	30	0	4:20	4:25	P		AZ	
10/15/15	4:45	TA	P1 - P7	16.0	9-N.EXT	1093.0	10/17/15	30	30	0	9:20	9:25	P		AZ	
10/15/15	4:48	TA	P1 - P9	6.0	2-7	1099.0	10/17/15	30	30	0	9:12	9:17	P		AZ	
10/15/15	4:53	TA	P2 - P9	15.0	1-10	1114.0	10/17/15	30	30	0	9:05	9:10	P		AZ	DS5
10/15/15	4:58	TA	P2 - P10	7.0	4-9	1121.0	10/17/15	30	30	0	9:02	9:07	P		AZ	
10/15/15	5:05	TA	P4 - P10	15.0	2-11	1136.0	10/17/15	30	30	0	8:50	8:55	P		AZ	
10/15/15	5:10	TA	P4 - P11	6.0	6-10	1142.0	10/17/15	30	30	0	8:32	8:37	P		AZ	
10/15/15	5:12	TA	P6 - P11	16.0	4-40	1158.0	10/17/15	30	30	0	8:30	8:35	P		AZ	
10/16/15	3:38	EV	P19 - P20	124.0	17-64	1282.0	10/17/15	30	30	0	3:11	3:16	P		AZ	
10/16/15	4:06	EV	P12 - P22	15.0	6-13	1297.0	10/17/15	30	30	0	2:20	2:25	P		AZ	
10/16/15	4:09	EV	P13 - P22	22.0	12-14	1319.0	10/17/15	30	30	0	2:21	2:26	P		AZ	
10/16/15	4:18	EV	P14 - P22	18.0	13-15	1337.0	10/17/15	30	30	0	2:32	2:37	P		AZ	
10/16/15	4:28	EV	P15 - P22	4.0	14-21	1341.0	10/17/15	30	30	0	2:35	2:40	P		AZ	

Geomembrane Seaming and Non-Destructive Test Summary



25809 Interstate 30 South

Bryant, AR 72022

Phone: 501.847.9292

Fax: 501.847.9210

Client Name: IESI Cherokee Village

Contractor: Twehous

Project Name: Cell B2

Address: 100 Landfill Road

Location: Cherokee Village, AR 72529

Project Number: 35157094

CQA Monitor: Adam Zimmerman

Reviewed By: Dave McCormick, P.E.

Approved By: Dave McCormick, P.E.

Liner Installer: Comanco

Machine No. MF-A099, TA-A055, EV-A055, MF-A034, JP-22 Carry Over: 0 ft

PRODUCTION SEAM				LOCATION AND DISTANCE			Date	NON-DESTRUCTIVE TESTING							QA ID	Destruct No.
Date	Time	Seamer Initials	Seam Number	Length (ft)	Location From - To	Accum Length (ft)		Pressure			Time		Air Test P/F	Vac Box P/F		
								Start	End	+/-	Start	End				
10/16/15	4:32	EV	P15 - P21	15.0	16-22	1356.0	10/17/15	30	30	0	2:37	2:42	P		AZ	
10/16/15	4:37	EV	P16 - P21	16.0	15-20	1372.0	10/17/15	30	30	0	2:45	2:50	P		AZ	
10/16/15	4:37	EV	P16 - P20	2.0	17-21	1374.0	10/17/15	30	30	0	2:50	2:55	P		AZ	
10/16/15	4:38	EV	P17 - P20	18.0	16-19	1392.0	10/17/15	30	30	0	2:50	2:55	P		AZ	DS10
10/17/15	11:28	EV	P25 - P27	27.0	6-S.EOS	1419.0	10/17/15	30	30	0	4:02	4:07	P		AZ	
10/17/15	11:30	EV	P25 - P27	83.0	N.EOS-20	1502.0	10/17/15	30	30	0	3:57	4:02	P		AZ	
10/17/15	11:41	EV	P26 - P27	91.0	25-64	1593.0	10/17/15	30	30	0	3:55	4:00	P		AZ	
10/17/15	1:25	EV	P29 - P30	209.0	6-65	1802.0	10/19/15	30	30	0	9:03	9:08	P		AZ	
10/17/15	2:13	EV	P31 - P33	92.0	6-32	1894.0	10/19/15	30	30	0	11:28	11:33	P		AZ	
10/17/15	2:38	EV	P32 - P33	112.0	31-65	2006.0	10/19/15	30	29	-1	11:20	11:25	P		AZ	DS13
10/17/15	3:18	EV	P33 - P34	189.0	6-35	2195.0	10/19/15	30	29	-1	1:16	1:21	P		AZ	
10/17/15	3:57	EV	P34 - P35	22.0	33-36	2217.0	10/19/15	30	28	-2	1:33	1:38	P		AZ	
10/17/15	4:10	EV	P34 - P36	189.0	3-35	2406.0	10/19/15	30	30	0	2:37	2:42	P		AZ	
10/17/15	4:33	EV	P35 - P36	14.0	34-35	2420.0	10/19/15	30	30	0	2:45	2:50	P		AZ	
10/17/15	4:35	EV	P33 - P35	14.0	34-35	2434.0	10/19/15	30	29	-1	2:50	2:55	P		AZ	
10/16/15	4:00	EV	P7 - EXT	21.0	37-W.EOS	2455.0	10/17/15	30	30	0	10:14	10:19	P		AZ	
10/16/15	4:15	EV	P7 - EXT	44.0	E.EOS-W.EOS	2499.0	10/17/15	30	30	0	10:20	10:25	P		AZ	
10/16/15	4:30	EV	P7 - EXT	8.0	E.EOS-W.EOS	2507.0	10/17/15	30	30	0	9:56	10:01	P		AZ	
10/16/15	4:35	EV	P7 - EXT	32.0	E.EOS-W.EOS	2539.0	10/17/15	30	28	-2	9:54	9:59	P		AZ	
10/16/15	4:43	EV	P7 - EXT	11.0	E.EOS-W.EOS	2550.0	10/17/15	30	30	0	9:35	9:40	P		AZ	
10/16/15	4:45	EV	P7 - EXT	8.0	E.EOS-W.EOS	2558.0	10/17/15	30	30	0	9:43	9:48	P		AZ	
10/16/15	4:47	EV	P7 - EXT	27.0	E.EOS-W.EOS	2585.0	10/17/15	30	30	0	9:45	9:50	P		AZ	
10/16/15	4:53	EV	P7 - EXT	20.0	E.EOS-W.EOS	2605.0	10/17/15	30	30	0	5:15	5:20	P		AZ	
10/20/15	9:15	EV	P39 - P40	224.0	6-S.EOS	2829.0	10/20/15	30	30	0	1:15	1:20	P		AZ	DS14
10/20/15	10:08	EV	P40 - P41	70.0	11-42	2899.0	10/20/15	30	30	0	1:35	1:40	P		AZ	

Geomembrane Seaming and Non-Destructive Test Summary



25809 Interstate 30 South

Bryant, AR 72022

Phone: 501.847.9292

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Client Name: IESI Cherokee Village

Contractor: Twehous

Project Name: Cell B2

Address: 100 Landfill Road

Location: Cherokee Village, AR 72529

Project Number: 35157094

CQA Monitor: Adam Zimmerman

Reviewed By: Dave McCormick, P.E.

Approved By: Dave McCormick, P.E.

Liner Installer: Comanco

Machine No. MF-A099, TA-A055, EV-A055, MF-A034, JP-22 Carry Over: 0 ft

PRODUCTION SEAM				LOCATION AND DISTANCE				NON-DESTRUCTIVE TESTING							QA ID	Destruct No.
Date	Time	Seamer Initials	Seam Number	Length (ft)	Location From - To	Accum Length (ft)		Pressure			Time		Air Test P/F	Vac Box P/F		
								Start	End	+/-	Start	End				
10/20/15	10:30	EV	P40 - P42	153.0	41-S.EOS	3052.0	10/20/15	30	30	0	1:42	1:47	P		AZ	
10/20/15	10:50	EV	P43 - P45	74.0	11-44	3126.0	10/20/15	30	30	0	2:08	2:13	P		AZ	
10/20/15	11:00	EV	P44 - P45	151.0	43-S.EOS	3277.0	10/20/15	30	30	0	2:13	2:18	P		AZ	
10/20/15	11:50	EV	P46 - P48	141.0	11-47	3418.0	10/20/15	30	30	0	2:37	2:42	P		AZ	DS16
10/20/15	1:30	EV	P48 - P49	214.0	11-51	3632.0	10/20/15	30	30	0	2:50	2:55	P		AZ	
10/20/15	1:45	EV	P48 - P51	7.0	49-S.EOS	3639.0	10/20/15	30	30	0	2:45	2:50	P		AZ	
10/20/15	2:30	EV	P50 - P52	220.0	11-S.EOS	3859.0	10/20/15	30	30	0	3:21	6:14	P		AZ	
10/20/15	3:40	EV	P55 - P56	78.0	37-57	3937.0	10/20/15	30	30	0	5:00	5:05	P		AZ	DS17
10/20/15	3:45	EV	P56 - P57	22.0	55-60	3959.0	10/20/15	30	30	0	4:55	5:00	P		AZ	
10/20/15	3:56	EV	P55 - P57	204.0	56-S.EOS	4163.0	10/20/15	30	30	0	5:10	5:15	P		AZ	
10/20/15	5:15	EV	P56 - P59	23.0	58-60	4186.0	10/21/15	30	30	0	11:05	11:10	P		AZ	
10/20/15	5:27	EV	P56 - P60	10.0	59-S.EOS	4196.0	10/21/15	30	30	0	11:15	11:20	P		AZ	
10/20/15	5:48	EV	P56 - P58	26.0	38-59	4222.0	10/21/15	30	30	0	11:00	11:05	P		AZ	
10/20/15	5:56	EV	P56 - P60	11.0	N.EOS-S.EOS	4233.0	10/21/15	30	30	0	11:15	11:20	P		AZ	DS18
10/20/15	6:00	EV	P57 - P61	24.0	56-62	4257.0	10/21/15	30	30	0	11:25	11:30	P		AZ	
10/20/15	5:58	EV	P56 - P60	10.0	N.EOS-61	4267.0	10/21/15	30	30	0	11:20	11:25	P		AZ	
10/21/15	8:40	TA	P35 - P65	22.0	33-36	4289.0	10/21/15	30	30	0	3:25	3:30	P		AZ	
10/21/15	8:43	TA	P33 - P65	22.0	32-35	4311.0	10/21/15	30	30	0	3:20	3:25	P		AZ	
10/21/15	8:46	TA	P32 - P65	22.0	30-33	4333.0	10/21/15	30	30	0	3:15	3:20	P		AZ	
10/21/15	8:49	TA	P30 - P65	22.0	29-32	4355.0	10/21/15	30	30	0	3:05	3:10	P		AZ	
10/21/15	8:52	TA	P29 - P65	22.0	28-30	4377.0	10/21/15	30	30	0	3:00	3:05	P		AZ	
10/21/15	8:55	TA	P28 - P65	22.0	27-29	4399.0	10/21/15	30	30	0	2:55	3:00	P		AZ	
10/21/15	8:58	TA	P27 - P65	10.0	64-28	4409.0	10/21/15	30	30	0	2:50	2:55	P		AZ	
10/21/15	9:01	TA	P65 - P64	8.0	27-S.EOS	4417.0	10/21/15	30	30	0	2:45	2:50	P		AZ	
10/21/15	9:04	TA	P27 - P64	12.0	26-65	4429.0	10/21/15	30	30	0	2:44	2:49	P		AZ	

Geomembrane Seaming and Non-Destructive Test Summary



25809 Interstate 30 South

Bryant, AR 72022

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Reviewed By: Dave McCormick, P.E.

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Liner Installer: Comanco

Machine No. MF-A099, TA-A055, EV-A055, MF-A034, JP-22 Carry Over: 0 ft

PRODUCTION SEAM				LOCATION AND DISTANCE				NON-DESTRUCTIVE TESTING								
Date	Time	Seamer Initials	Seam Number	Length (ft)	Location From - To	Accum Length (ft)	Date	Pressure			Time		Air Test P/F	Vac Box P/F	QA ID	Destruct No.
								Start	End	+/-	Start	End				
10/21/15	9:07	TA	P26 - P64	22.0	24-27	4451.0	10/21/15	30	30	0	2:20	2:25	P		AZ	
10/21/15	9:10	TA	P24 - P64	22.0	22-26	4473.0	10/21/15	30	30	0	2:10	2:15	P		AZ	
10/21/15	9:13	TA	P22 - P64	22.0	21-24	4495.0	10/21/15	30	30	0	2:05	2:10	P		AZ	
10/21/15	9:16	TA	P21 - P64	22.0	20-22	4517.0	10/21/15	30	30	0	2:00	2:05	P		AZ	
10/21/15	9:19	TA	P20 - P64	22.0	19-21	4539.0	10/21/15	30	30	0	1:45	1:50	P		AZ	
10/21/15	9:22	TA	P19 - P64	22.0	18-20	4561.0	10/21/15	30	30	0	1:40	1:45	P		AZ	
10/21/15	9:25	TA	P18 - P64	22.0	19-67	4583.0	10/21/15	30	30	0	1:30	1:35	P		AZ	
10/21/15	10:20	TA	P39 - P65	8.0	36-S.EOS	4591.0	10/21/15	30	30	0	3:35	3:40	P		AZ	
10/21/15	10:22	TA	P36 - P65	22.0	35-39	4613.0	10/21/15	30	30	0	3:30	3:35	P		AZ	
10/21/15	10:49	TA	P18 - P66	119.0	67-N.EOS	4732.0	10/21/15	30	30	0	1:15	1:20	P		AZ	
10/21/15	10:55	TA	P66 - P67	10.0	18-W.EOS	4742.0	10/21/15	30	30	0	1:05	1:10	P		AZ	
10/21/15	11:00	TA	P18 - P67	99.0	64-66	4841.0	10/21/15	30	30	0	1:28	1:33	P		AZ	DS-21
10/21/15	11:15	TA	P64 - P67	8.0	18-W.EOS	4849.0	10/21/15	30	30	0	1:25	1:30	P		AZ	
10/15/15	1:32	MF	P4 - P6	255.0	5-11	5104.0	10/15/15	30	30	0	4:45	4:50	P		AZ	DS4
10/15/15	2:08	MF	P5 - P6	97.0	4-W.EOS	5201.0	10/15/15	30	28	-2	5:00	5:05	P		AZ	
10/15/15	3:31	MF	P7 - P8	46.0	9-37	5247.0	10/17/15	30	30	0	10:18	10:23	P		AZ	
10/15/15	3:24	MF	P8 - P9	22.0	7-10	5269.0	10/17/15	30	30	0	10:27	10:32	P		AZ	
10/15/15	3:37	MF	P7 - P9	171.0	1-8	5440.0	10/17/15	30	30	0	9:20	9:25	P		AZ	DS6
10/15/15	4:09	MF	P8 - P10	45.0	9-55	5485.0	10/17/15	30	30	0	10:30	10:35	P		AZ	
10/15/15	4:27	MF	P9 - P10	169.0	2-8	5654.0	10/17/15	30	28	-2	9:00	9:05	P		AZ	
10/16/15	10:20	MF	P6 - P12	99.0	18-22	5753.0	10/17/15	30	30	0	2:17	2:22	P		AZ	
10/16/15	10:31	MF	P12 - P13	95.0	18-22	5848.0	10/17/15	30	28	-2	2:23	2:28	P		AZ	
10/16/15	10:49	MF	P13 - P14	97.0	18-22	5945.0	10/17/15	30	30	0	2:25	2:30	P		AZ	DS7
10/16/15	11:07	MF	P14 - P15	97.0	18-22	6042.0	10/17/15	30	30	0	2:33	2:38	P		AZ	
10/16/15	11:27	MF	P15 - P16	94.0	18-21	6136.0	10/17/15	30	30	0	2:43	2:48	P		AZ	

Geomembrane Seaming and Non-Destructive Test Summary



25809 Interstate 30 South

Bryant, AR 72022

Phone: 501.847.9292

Fax: 501.847.9210

Client Name: IESI Cherokee Village

Contractor: Twehous

Project Name: Cell B2

Address 100 Landfill Road

Location: Cherokee Village, AR 72529

Project Number: 35157094

CQA Monitor: Adam Zimmerman

Reviewed By: Dave McCormick, P.E.

Approved By: Dave McCormick, P.E.

Liner Installer: Comanco

Machine No. MF-A099, TA-A055, EV-A055, MF-A034, JP-22 Carry Over: 0 ft

PRODUCTION SEAM				LOCATION AND DISTANCE				NON-DESTRUCTIVE TESTING								
Date	Time	Seamer Initials	Seam Number	Length (ft)	Location From - To	Accum Length (ft)	Date	Pressure			Time		Air Test P/F	Vac Box P/F	QA ID	Destruct No.
								Start	End	+/-	Start	End				
10/16/15	11:46	MF	P16 - P17	91.0	18-20	6227.0	10/17/15	30	30	0	2:48	2:53	P		AZ	
10/16/15	3:11	MF	P6 - P18	5.0	12-N.EOS	6232.0	10/17/15	30	30	0	3:00	3:05	P		AZ	
10/16/15	3:12	MF	P13 - P18	3.0	12-14	6235.0	10/17/15	30	30	0	3:00	3:05	P		AZ	
10/16/15	3:13	MF	P15 - P18	2.0	14-16	6237.0	10/17/15	30	30	0	3:00	3:05	P		AZ	
10/16/15	3:14	MF	P16 - P18	5.0	15-77	6242.0	10/17/15	30	30	0	3:00	3:05	P		AZ	
10/16/15	3:15	MF	P17 - P18	18.0	16-19	6260.0	10/17/15	30	30	0	2:59	3:04	P		AZ	
10/16/15	2:46	MF	P17 - P19	57.0	18-20	6317.0	10/17/15	30	30	0	2:57	3:02	P		AZ	
10/16/15	2:37	MF	P18 - P19	178.0	17-64	6495.0	10/17/15	30	29	-1	3:07	3:12	P		AZ	DS8
10/16/15	3:36	MF	P20 - P21	123.0	16-64	6618.0	10/17/15	30	30	0	3:13	3:18	P		AZ	
10/16/15	4:15	MF	P22 - P24	58.0	23-64	6676.0	10/17/15	30	30	0	3:38	3:43	P		AZ	
10/16/15	4:37	MF	P23 - P24	22.0	22-26	6698.0	10/17/15	30	30	0	3:40	3:45	P		AZ	
10/16/15	4:44	MF	P22 - P23	152.0	6-24	6850.0	10/17/15	30	28	-2	3:28	3:33	P		AZ	DS9
10/16/15	3:52	MF	P21 - P22	149.0	15-64	6999.0	10/17/15	30	28	-2	3:17	3:22	P		AZ	
10/16/15	4:30	MF	P10 - P11	217.0	4-55	7216.0	10/17/15	30	30	0	8:45	8:50	P		AZ	
10/17/15	11:02	MF	P25 - P26	22.0	23-27	7238.0	10/17/15	30	30	0	3:47	3:52	P		AZ	
10/17/15	11:12	MF	P23 - P25	110.0	6-26	7348.0	10/17/15	30	30	0	3:50	3:55	P		AZ	
10/17/15	11:28	MF	P23 - P26	39.0	24-25	7387.0	10/17/15	30	30	0	3:49	3:54	P		AZ	
10/17/15	11:34	MF	P24 - P26	52.0	23-64	7439.0	10/17/15	30	30	0	3:42	3:47	P		AZ	
10/17/15	11:45	MF	P27 - P28	209.0	6-65	7648.0	10/19/15	30	29	-1	8:03	8:08	P		AZ	DS11
10/17/15	1:05	MF	P28 - P29	209.0	6-65	7857.0	10/19/15	30	30	0	8:53	8:58	P		AZ	
10/17/15	1:40	MF	P31 - P32	22.0	30-33	7879.0	10/19/15	30	28	-2	11:12	11:17	P		AZ	
10/17/15	1:55	MF	P30 - P31	92.0	6-32	7971.0	10/19/15	30	29	-1	9:19	9:24	P		AZ	DS12
10/17/15	2:07	MF	P30 - P32	112.0	31-65	8083.0	10/19/15	30	30	0	11:04	11:09	P		AZ	
10/17/15	3:22	MF	P6 - P34	22.0	33-36	8105.0	10/19/15	30	29	-1	1:23	1:28	P		AZ	
10/17/15	3:25	MF	P6 - P33	22.0	31-34	8127.0	10/19/15	30	29	-1	2:10	2:15	P		AZ	

Geomembrane Seaming and Non-Destructive Test Summary



25809 Interstate 30 South

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Contractor: Twehous

Project Name: Cell B2

Address: 100 Landfill Road

Location: Cherokee Village, AR 72529

Project Number: 35157094

CQA Monitor: Adam Zimmerman

Reviewed By: Dave McCormick, P.E.

Approved By: Dave McCormick, P.E.

Liner Installer: Comanco

Machine No. MF-A099, TA-A055, EV-A055, MF-A034, JP-22 Carry Over: 0 ft

PRODUCTION SEAM				LOCATION AND DISTANCE				NON-DESTRUCTIVE TESTING								
Date	Time	Seamer Initials	Seam Number	Length (ft)	Location From - To	Accum Length (ft)	Date	Pressure			Time		Air Test P/F	Vac Box P/F	QA ID	Destruct No.
								Start	End	+/-	Start	End				
10/17/15	3:28	MF	P6 - P31	22.0	30-33	8149.0	10/19/15	30	30	0	2:10	2:15	P		AZ	
10/17/15	3:31	MF	P6 - P30	22.0	29-31	8171.0	10/19/15	30	30	0	2:20	2:25	P		AZ	
10/17/15	3:34	MF	P6 - P29	22.0	28-30	8193.0	10/19/15	30	30	0	2:27	2:32	P		AZ	
10/17/15	3:37	MF	P6 - P28	22.0	27-29	8215.0	10/19/15	30	29	-1	2:41	2:46	P		AZ	
10/17/15	3:40	MF	P6 - P27	22.0	25-28	8237.0	10/19/15	30	29	-1	2:55	3:00	P		AZ	
10/17/15	3:43	MF	P6 - P25	22.0	23-27	8259.0	10/19/15	30	29	-1	3:05	3:10	P		AZ	
10/17/15	3:46	MF	P6 - P23	22.0	22-25	8281.0	10/19/15	30	30	0	3:16	3:21	P		AZ	
10/17/15	3:49	MF	P6 - P22	5.0	12-23	8286.0	10/19/15	30	30	0	3:25	3:30	P		AZ	
10/20/15	9:21	MF	P36 - P39	224.0	6-65	8510.0	10/20/15	30	30	0	1:06	1:11	P		AZ	
10/20/15	10:03	MF	P41 - P42	22.0	11-42	8532.0	10/20/15	30	30	0	1:51	1:56	P		AZ	
10/20/15	10:12	MF	P43 - P44	22.0	42-45	8554.0	10/20/15	30	30	0	2:16	2:21	P		AZ	
10/20/15	10:21	MF	P41 - P43	71.0	11-42	8625.0	10/20/15	30	30	0	1:56	2:01	P		AZ	
10/20/15	10:31	MF	P42 - P44	151.0	43-S.EOS	8776.0	10/20/15	30	30	0	2:06	2:11	P		AZ	DS15
10/20/15	10:31	MF	P42 - P43	2.0	41-44	8778.0	10/20/15	30	30	0	2:06	2:11	P		AZ	
10/20/15	11:14	MF	P45 - P46	141.0	11-47	8919.0	10/20/15	30	30	0	2:23	2:28	P		AZ	
10/20/15	11:35	MF	P46 - P47	22.0	45-48	8941.0	10/20/15	30	30	0	2:25	2:30	P		AZ	
10/20/15	11:40	MF	P45 - P47	83.0	46-S.EOS	9024.0	10/20/15	30	30	0	2:20	2:25	P		AZ	
10/20/15	11:51	MF	P47 - P48	83.0	46-S.EOS	9107.0	10/20/15	30	30	0	2:40	2:45	P		AZ	
10/20/15	1:00	MF	P49 - P50	214.0	11-51	9321.0	10/20/15	30	30	0	3:13	3:18	P		AZ	DS19
10/20/15	1:30	MF	P49 - P51	22.0	48-50	9343.0	10/20/15	30	30	0	3:00	3:05	P		AZ	
10/20/15	2:04	MF	P50 - P51	7.0	49-S.EOS	9350.0	10/20/15	30	30	0	3:15	3:20	P		AZ	
10/20/15	2:25	MF	P53 - P54	22.0	52-55	9372.0	10/20/15	30	30	0	4:05	4:10	P		AZ	
10/20/15	2:34	MF	P52 - P53	68.0	11-54	9440.0	10/20/15	30	30	0	3:30	3:35	P		AZ	
10/20/15	2:43	MF	P52 - P54	152.0	53-S.EOS	9592.0	10/21/15	30	30	0	3:20	3:25	P		AZ	
10/20/15	4:10	MF	P37 - P55	17.0	7-56	9609.0	10/21/15	30	30	0	5:10	5:15	P		AZ	

Geomembrane Seaming and Non-Destructive Test Summary



25809 Interstate 30 South

Bryant, AR 72022

Phone: 501.847.9292

Fax: 501.847.9210

Client Name: IESI Cherokee Village

Contractor: Twehous

Project Name: Cell B2

Address 100 Landfill Road

Location: Cherokee Village, AR 72529

Project Number: 35157094

CQA Monitor: Adam Zimmerman

Reviewed By: Dave McCormick, P.E.

Approved By: Dave McCormick, P.E.

Liner Installer: Comanco

Machine No. MF-A099, TA-A055, EV-A055, MF-A034, JP-22 Carry Over: 0 ft

PRODUCTION SEAM				LOCATION AND DISTANCE			Date	NON-DESTRUCTIVE TESTING						QA ID	Destruct No.
Date	Time	Seamer Initials	Seam Number	Length (ft)	Location From - To	Accum Length (ft)		Pressure			Time		Air Test P/F	Vac Box P/F	
								Start	End	+/-	Start	End			
10/20/15	4:13	MF	P38 - P56	19.0	37-S.EOS	9628.0	10/21/15	30	30	0	5:00	5:05	P		AZ
10/20/15	4:24	MF	P8 - P55	17.0	7-10	9645.0	10/21/15	30	30	0	5:21	5:26	P		AZ
10/20/15	4:26	MF	P10 - P55	22.0	8-11	9667.0	10/21/15	30	30	0	5:15	5:20	P		AZ
10/20/15	4:29	MF	P11 - P55	22.0	10-53	9689.0	10/21/15	30	30	0	5:28	5:33	P		AZ
10/20/15	3:26	MF	P53 - P55	66.0	11-54	9755.0	10/21/15	30	30	0	4:18	4:23	P		AZ
10/20/15	3:36	MF	P54 - P55	152.0	53-S.EOS	9907.0	10/21/15	30	30	0	4:33	4:38	P		AZ DS20
10/20/15	4:47	MF	P11 - P53	22.0	52-55	9929.0	10/21/15	30	30	0	10:15	10:20	P		AZ
10/20/15	4:50	MF	P11 - P52	22.0	50-53	9951.0	10/21/15	30	30	0	10:10	10:15	P		AZ
10/20/15	4:54	MF	P11 - P50	22.0	49-52	9973.0	10/21/15	30	30	0	10:05	10:10	P		AZ
10/20/15	4:58	MF	P11 - P49	22.0	48-50	9995.0	10/21/15	30	30	0	10:00	10:05	P		AZ
10/20/15	5:02	MF	P11 - P48	22.0	46-49	10017.0	10/21/15	30	30	0	9:35	9:40	P		AZ
10/20/15	5:06	MF	P11 - P46	22.0	45-48	10039.0	10/21/15	30	30	0	9:30	9:35	P		AZ
10/20/15	5:11	MF	P11 - P45	22.0	43-46	10061.0	10/21/15	30	30	0	9:20	9:25	P		AZ
10/20/15	5:14	MF	P11 - P43	22.0	41-45	10083.0	10/21/15	30	30	0	9:25	9:30	P		AZ
10/20/15	5:17	MF	P11 - P41	22.0	40-43	10105.0	10/21/15	30	30	0	9:10	9:15	P		AZ
10/20/15	5:20	MF	P11 - P40	13.0	6-41	10118.0	10/21/15	30	30	0	9:05	9:10	P		AZ
10/20/15	5:30	MF	P6 - P40	9.0	39-41	10127.0	10/21/15	30	30	0	9:00	9:05	P		AZ
10/20/15	5:31	MF	P6 - P39	22.0	36-40	10149.0	10/21/15	30	30	0	8:55	9:00	P		AZ
10/20/15	5:34	MF	P6 - P36	22.0	34-39	10171.0	10/21/15	30	30	0	8:50	8:55	P		AZ
10/20/15	5:45	MF	P62 - P57	70.0	61-63	10241.0	10/21/15	30	30	0	11:30	11:35	P		AZ
10/20/15	5:55	MF	P63 - P57	66.0	62-S.EOS	10307.0	10/21/15	30	30	0	11:40	11:45	P		AZ
10/21/15	2:01	MF	P58 - EXT	13.0	N.EXT-S.EOS	10320.0	10/21/15	30	30	0	5:45	5:50	P		AZ
10/21/15	2:03	MF	P58 - EXT	9.0	N.EOS-59	10329.0	10/21/15	30	30	0	5:45	5:50	P		AZ
10/21/15	2:04	MF	P59 - EXT	13.0	58-S.EOS	10342.0	10/21/15	30	30	0	5:42	5:47	P		AZ
10/21/15	2:05	MF	P59 - EXT	10.0	N.EOS-60	10352.0	10/21/15	30	30	0	5:41	5:46	P		AZ

Geomembrane Seaming and Non-Destructive Test Summary



25809 Interstate 30 South

Bryant, AR 72022

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Client Name: IESI Cherokee Village

Contractor: Twehous

Project Name: Cell B2

Address: 100 Landfill Road

Location: Cherokee Village, AR 72529

Project Number: 35157094

CQA Monitor: Adam Zimmerman

Reviewed By: Dave McCormick, P.E.

Approved By: Dave McCormick, P.E.

Liner Installer: Comanco

Machine No. MF-A099, TA-A055, EV-A055, MF-A034, JP-22 Carry Over: 0 ft

PRODUCTION SEAM				LOCATION AND DISTANCE				NON-DESTRUCTIVE TESTING						QA ID	Destruct No.	
Date	Time	Seamer Initials	Seam Number	Length (ft)	Location From - To	Accum Length (ft)	Date	Pressure			Time		Air Test P/F			Vac Box P/F
								Start	End	+/-	Start	End				
10/19/15	3:55	JP	P7 - P37	27.0	8-N.EXT	11215.0	10/20/15							P	AZ	DX-1
10/19/15	4:10	JP	P37 - P38	24.0	56-N.EXT	11239.0	10/20/15							P	AZ	
10/19/15	3:15	JP	P37 - EXT	17.0	8-N.EXT	11256.0	10/20/15							P	AZ	
10/19/15	3:45	JP	P38 - EXT	50.0	56-N.EXT	11306.0	10/20/15							P	AZ	
10/21/15	4:13	JP	P57 - P68	12.0	N.EOS-S.EOS	11318.0	10/21/15							P	AZ	
10/21/15	4:30	JP	P68 - EXT	30.0	N.EOS-S.EOS	11348.0	10/21/15							P	AZ	
10/21/15	2:00	JP	P1 - P2	12.0	E.EOS-W.EOS	11360.0	10/21/15							P	AZ	
10/21/15	2:30	JP	P1 - P2	12.0	E.EOS-W.EOS	11372.0	10/21/15							P	AZ	
10/22/15	6:15	JP	P71 - P72	4.0	1-3	11376.0	10/22/15							P	AZ	
10/22/15	6:25	JP	P70 - P69	4.0	1-3	11380.0	10/22/15							P	AZ	
10/20/15	5:30	JP	P61 - P62	4.0	57-E.EXT	11384.0	10/22/15							P	AZ	
10/20/15	5:35	JP	P62 - P63	5.0	57-E.EXT	11389.0	10/22/15							P	AZ	
10/20/15	5:53	JP	P58 - P59	1.0	R152	11390.0	10/22/15							P	AZ	
10/20/15	5:59	JP	P60 - P61	5.0	R150	11395.0	10/22/15							P	AZ	
10/20/15	5:27	JP	P59 - P60	1.0	R151	11396.0	10/22/15							P	AZ	
10/21/15	2:34	MF	P57 - EXT	14.0	63-S.EOS	11410.0	10/21/15	30	30	0	4:15	4:20	P		AZ	
10/21/15	2:37	MF	P57 - EXT	12.0	NEOS - 68	11422.0	10/21/15	30	30	0	4:10	4:15	P		AZ	

Note: _____

This Page: 11,422 ft
Accumulated: 11,422 ft

APPENDIX Q
GEOMEMBRANE DESTRUCTIVE TEST LOG
SUMMARY & LABORATORY TEST RESULTS

Geomembrane Destructive Test Log Summary



25809 Interstate 30 South

Bryant, AR 72022

Phone: 501.847.9292

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Client Name: Cherokee Village
 Contractor: Twehous
 Project Name: Cell B2
 Address: 100 Landfill Road
 Location: Cherokee Village, AR 72529

Project Number: 35157094
 CQA Monitor: Adam Zimmerman
 Reviewed By: Dave McCormick, P.E.
 Approved By: Dave McCormick, P.E.
 Liner Installer: Comanco

Destructive Testing Specifications	
Peel Extrusion =	78
Shear Extrusion =	120
Peel Fusion =	91
Shear Fusion =	120

Date	Sample ID	Seam Number	Machine Number	Seamer Initials	Test Values lbs/inch										Field Pass/Fail	Lab Pass/Fail	Comments	
10/14/15	DS-1A	P1-P2	99	MF	P	146	130	135	139	142	142	137	134	133	130	Pass	Fail	235' From WAT (Capped Seam)
					S	165		169		169		164		166				
10/14/15	DS-2	P1-TIE	55	TA	P	148	141	153	131	125	126	149	142	135	151	Pass	Pass	163' From WAT
					S	179		183		184		184		180				
10/14/15	DS-3	P4-P5	99	MF	P	136	142	138	141	119	145	145	144	142	153	Pass	Pass	3' From P4,5,6
					S	167		177		180		181		171				
10/14/15	DS-4	P4-P6	34	MF	P	119	125	121	123	128	144	137	142	143	134	Pass	Pass	250 from WAT
					S	192		189		195		188		192				
10/15/15	DS-5	P2-P9	55	TA	P	130	137	137	126	133	156	150	146	142	144	Pass	Pass	22' from P1,P9, EXT
					S	157		160		161		159		158				
10/16/15	DS-6	P7-P9	34	MF	P	115	115	115	118	117	108	128	120	125	120	Pass	Pass	25' from P1,7,9
					S	163		164		170		169		161				
10/16/15	DS-7	P13-P14	34	MF	P	134	133	127	122	127	121	119	124	115	115	Pass	Pass	90' from WAT
					S	166		165		165		171		169				
10/16/15	DS-8	P18-P19	34	MF	P	130	137	141	129	136	118	117	118	116	140	Pass	Pass	42 from SSOS
					S	195		194		198		203		194				
10/16/15	DS-9	P22-P23	34	MF	P	132	134	139	123	144	135	112	136	133	135	Pass	Pass	23' from P22,23,24
					S	199		191		199		201		197				
10/16/15	DS-10	P17-P20	55	EV	P	164	104	130	162	159	147	159	157	141	144	Pass	Pass	10' from P16,17,20
					S	196		195		197		192		194				
10/17/15	DS-11	P27-P28	34	MF	P	144	134	153	157	122	134	136	122	138	137	Pass	Pass	150 from SEOS
					S	190		194		192		199		187				
10/17/15	DS-12	P30-P31	34	MF	P	134	134	153	136	137	132	127	134	127	124	Pass	Pass	125 from SEOS
					S	189		191		191		196		191				
10/17/15	DS-13	P32-P33	55	EV	P	129	119	120	114	121	121	121	118	119	128	Pass	Pass	90 from SEOS
					S	169		160		171		176		164				
10/14/15	DS-1B	P1-P2	99	MF	P	118	126	125	118	118	137	126	121	138	124	Pass	Pass	255 from WAT (Passing test for DS-1)
					S	151		153		158		161		151				
10/20/15	DX-1	P7-P37	75	JP	P	140	-	136	-	141	-	133	-	143	-	Pass	Pass	7' from NEOS
					S	170		174		172		171		165				



Date: 2015-10-21

Mail To:
Dave McCormick
Terracon Consultants Inc
25809 Interstate 30
Bryant , AR , 72022

Bill To:

Terracon Consultants Inc

e-mail:dcmccormick@terracon.com

Dear Mr. McCormick,

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: **Cherokee Village**

TRI Job Reference Number: **18518**

Material(s) Tested: (14) 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>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18518

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-1A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	146	142	144	130	123	137
Peel Incursion (%)	<5	15	<5	25	100	
Peel Locus Of Failure Code	SE	AD-BRK	SE	AD-BRK	AD	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	NON-FTB	
Side: B						Peel B
Peel Strength (ppi)	160	144	136	141	136	143
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)	188	187	188	191	183	187
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-1B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	140	129	137	118	138	132
Peel Incursion (%)	<5	<5	<5	15	<5	
Peel Locus Of Failure Code	SE	SE	SE	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	127	131	115	141	141	131
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)	189	188	182	188	185	186
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18518

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-2 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	130	119	143	131	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	
Side: B						Peel B
Peel Strength (ppi)	126	126	128	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	
Shear						Shear
Shear Strength (ppi)	179	172	174	174	180	176
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-3 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	140	133	142	142	130	137
Peel Incursion (%)	<5	10	<5	100	<5	
Peel Locus Of Failure Code	SE	AD-BRK	SE	AD	SE	
Peel NSF Failure Code	FTB	FTB	FTB	NON-FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	136	149	134	120	150	138
Peel Incursion (%)	<5	<5	<5	15	<5	
Peel Locus Of Failure Code	SE	SE	SE	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	190	190	197	196	190	193
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18518

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-4 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	133	132	107	128	130	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)	140	127	132	124	138	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)	189	194	192	190	191	191
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-5 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	149	134	97	144	141	133
Peel Incursion (%)	<5	<5	100	<5	<5	
Peel Locus Of Failure Code	SE	SE	AD	SE	SE	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	143	147	139	148	129	141
Peel Incursion (%)	<5	<5	<5	<5	10	
Peel Locus Of Failure Code	SE	SE	SE	SE	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	173	185	179	178	178	179
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18518

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-6 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	139	123	133	134	128	131
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	112	135	123	133	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)	188	186	185	194	192	189
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-7 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	140	131	142	139	123	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)	125	120	117	130	147	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)	185	190	189	190	183	187
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18518

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-8 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	131	132	128	136	131	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	
Side: B						Peel B
Peel Strength (ppi)	133	119	110	123	121	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)	185	190	186	181	189	186
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-9 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	156	148	164	145	137	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)	134	137	135	150	120	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	
Shear						Shear
Shear Strength (ppi)	180	187	185	183	182	183
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18518

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-10 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	140	134	140	152	136	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)	137	145	132	141	135	138
Peel Incursion (%)	<5	<5	20	<5	<5	
Peel Locus Of Failure Code	SE	SE	AD-BRK	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	179	184	177	184	182	181
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-11 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	130	130	147	167	156	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	
Side: B						Peel B
Peel Strength (ppi)	125	130	131	149	134	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)	185	190	186	186	181	186
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18518

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-12 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	140	137	137	142	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)	143	133	123	127	131	131
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)	189	191	190	187	186	189
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-13 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	140	147	131	128	133	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	
Side: B						Peel B
Peel Strength (ppi)	142	127	130	125	131	131
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)	188	191	190	190	186	189
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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Date: 2015-10-22

Mail To:

**Dave McCormick
Terracon Consultants Inc
25809 Interstate 30
Bryant, AR, 72022**

Bill To:

Terracon Consultants Inc

e-mail: dcmccormick@terracon.com

Dear Mr. McCormick,

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: Cherokee Village

TRI Job Reference Number: **18544**

Material(s) Tested: (8) Heat Fusion Weld Seam(s)
(1) Single Extrusion 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>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18544

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-14 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	140	137	133	132	135	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)	126	126	130	122	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	
Shear						Shear
Shear Strength (ppi)	187	188	184	180	182	184
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-15 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	130	134	132	135	138	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)	124	125	125	127	130	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)	185	183	180	177	174	180
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18544

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-16 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	133	133	141	133	132	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)	131	126	132	130	148	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)	184	185	181	176	177	181
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-17 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	139	132	133	131	129	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)	128	132	142	131	138	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)	185	178	181	182	179	181
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18544

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-18 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	134	134	127	133	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	
Side: B						Peel B
Peel Strength (ppi)	136	131	134	136	137	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	
Shear						Shear
Shear Strength (ppi)	189	192	188	189	193	190
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-19 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	127	128	131	136	136	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	
Side: B						Peel B
Peel Strength (ppi)	129	128	129	135	133	131
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)	181	178	176	175	180	178
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18544

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-20 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	135	146	147	149	146	145
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)	123	120	122	129	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	
Shear						Shear
Shear Strength (ppi)	183	182	179	180	182	181
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-21 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	131	131	128	128	128	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	131	128	132	130	131
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)	188	183	181	180	187	184
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18544

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DX-1 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	162	152	159	160	153	157
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)	178	180	181	177	184	180
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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



Date: 2015-10-26

Mail To:
Dave McCormick
Terracon Consultants Inc
25809 Interstate 30
Bryant , AR , 72022

Bill To:

Terracon Consultants Inc

e-mail: dcmccormick@terracon.com

Dear Mr. McCormick,

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: **Cherokee Village**

TRI Job Reference Number: **18592**

Material(s) Tested: (2) 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>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18592

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-22 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	129	138	106	131	117	124
Peel Incursion (%)	50	10	<5	20	15	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	SE	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	127	124	115	120	136	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)	190	184	187	187	183	186
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-23 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	143	130	149	147	163	146
Peel Incursion (%)	<5	<5	10	<5	<5	
Peel Locus Of Failure Code	SE	SE	AD-BRK	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	126	129	108	140	132	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)	186	185	181	181	179	182
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



Date: 2015-10-27

Mail To:
Dave McCormick
Terracon Consultants Inc
25809 Interstate 30
Bryant , AR , 72022

Bill To:

Terracon Consultants Inc

e-mail:dcmccormick@terracon.com

Dear Mr. McCormick,

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: **Cherokee Village**

TRI Job Reference Number: **18612**

Material(s) Tested: (2) 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>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Terracon Consultants Inc

Project: Cherokee Village

Material: 60 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 18612

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-22A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	134	144	138	151	139	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)	134	128	141	131	130	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)	194	198	188	188	186	191
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-22B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	132	137	151	145	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	
Side: B						Peel B
Peel Strength (ppi)	133	138	124	134	132	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)	197	199	193	193	190	194
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101

APPENDIX R

GEOMEMBRANE REPAIR LOG SUMMARY

Geomembrane Repair Log Summary



Client Name: IESI Cherokee Village
Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

☒ **Primary**
☐ **Secondary**
☐ **Other:** _____

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET				LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/17/15		P1-TIE	215	WAT	R1	P	E	2.0	2.0	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-TIE	209	WAT	R2	P	E	4.0	4.0	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-TIE	200	WAT	R3	P	E	-	-	2.0	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-TIE	130	WAT	R4	P	E	2.0	1.0	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-TIE	112	WAT	R5	P	E	5.0	3.0	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-TIE	77	WAT	R6	P	E	25.0	15.0	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-P3	2	WAT	R7	P	E	5.0	2.5	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-P3	10	WAT	R8	P	E	-	-	2.0	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-P3	37	WAT	R9	P	E	2.0	2.0	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1-P3	60	WAT	R10	P	E	2.0	2.0	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P3,4,5			R11	P	E	1.5	1,5	-	75	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P4,5,6			R12	p	E	11.0	3.0	-	76	MCF	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P2,3,4			R13	P	E	6.0	2.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1,2,3			R14	P	E	-	-	2.0	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P4,6,11			R15	P	E	-	-	2.0	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P4,10,11			R16	P	E	-	-	2.0	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P2,4,10			R17	P	E	-	-	1.5	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P2,9,10			R18	D5	E	7.0	2.0	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1,2,9			R19	P	E	-	-	2.0	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P1,7,9			R20	P	E	-	-	2.0	22	JP	AZ	10/19/15	RR	P	VAC	AZ

NOTES: (1) Repair No.: Repairs should be numbered sequentially
 (2) Repair Codes.: P = Patch, C = Cap, S = Anchor Trench Ext., D = Destructive Sample, G = Grind and Weld, T = Topping along Fusion Seam
 (3) Repair Types: E = Extrusion and F = Fusion

ABBREVIATIONS:
 GV = Gas Vent AT = Anchor Trench
 EXT = Existing PP = Pipe Penetration

Geomembrane Repair Log Summary



Client Name: IESI Cherokee Village
Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

☒ **Primary**
☐ **Secondary**
☐ **Other:** _____

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/17/15		P1,7,TIE			R21	P	E	-	-	2.0	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	18	P1,7,TIE	R22	P	E	-	-	2.0	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	43	P1,7,TIE	R23	P	E	5.0	3.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	54	P1,7,TIE	R24	P	E	-	-	2.0	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	65	P1,7,TIE	R25	P	E	2.0	1.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	76	P1,7,TIE	R26	P	E	3.5	2.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	82	P1,7,TIE	R27	P	E	3.5	2.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	88	P1,7,TIE	R28	P	E	3.0	2.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	94	P1,7,TIE	R29	P	E	-	-	2.0	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	113	P1,7,TIE	R30	P	E	3.0	2.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	120	P1,7,TIE	R31	P	E	2.0	2.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	129	P1,7,TIE	R32	P	E	12.0	4.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	136	P1,7,TIE	R33	P	E	12.0	4.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	144	P1,7,TIE	R34	P	E	5.0	3.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/17/15		P7-TIE	164	P1,7,TIE	R35	P	E	5.0	3.0	-	75	TA	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P8-P10	34	P8,9,10	R36	P	E	-	-	2.0	2	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P8-P10	20	P8,9,10	R37	P	E	-	-	2.0	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P8,9,10			R38	P	E	-	-	2.0	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P7,8,9			R39	P	E	-	-	2.0	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P7,9	84	P1,7,9	R40	P	E	-	-	2.0	22	JP	AZ	10/19/15	RR	P	VAC	AZ

NOTES: (1) Repair No.: Repairs should be numbered sequentially
 (2) Repair Codes.: P = Patch, C = Cap, S = Anchor Trench Ext., D = Destructive Sample, G = Grind and Weld, T = Topping along Fusion Seam
 (3) Repair Types: E = Extrusion and F = Fusion

ABBREVIATIONS:
 GV = Gas Vent AT = Anchor Trench
 EXT = Existing PP = Pipe Penetration

Geomembrane Repair Log Summary



Client Name: IESI Cherokee Village
Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

☒	Primary
☐	Secondary
☐	Other: _____

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/19/15		P1-P2	68	P1,2,9	R41	D1B	E	6.0	2.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/19/15		P4,6	250	W.AT	R42	D4	E	6.0	3.0	-	76	MF	AZ	10/21/15	RR	P	VAC	AZ
10/19/15		P1-P2	81	P1,2,9	R43	P	E	1.5	2.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/19/15		P1-P2	100	P1,2,9	R44	D1	E	6.0	2.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/19/15		P1-P2	117	P1,2,9	R45	D1A	E	6.0	2.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/19/15	TIE		217	WAT	R46	P	E	-	-	2.0	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/19/15	TIE		163	WAT	R47	D2	E	6.0	2.0	-	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/19/15	TIE		53	WAT	R48	P	E	-	-	3.0	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/19/15	TIE		75	WAT	R49	P	E	6.0	2.0	-	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P3-P5	2	WAT	R50	P	E	-	-	2.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P1-TIE	2	WAT	R51	P	E	-	-	2.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P-6,12,13,14,15, 16,18			R52	C	E	12.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P-16,17,18			R53	P	E	-	-	2.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P17,18,19			R54	P	E	-	-	2.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P20,21	30	SEOS	R55	P	E	4.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P13,14,22	10	P22	R56	D7	E	4.0	2.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P6,12,22			R57	P	E	9.0	4.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P6,22,23			R58	P	E	9.0	4.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P12,13,22			R59	P	E	2.0	2.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P13,14,22			R60	P	E	2.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ

NOTES: (1) Repair No.: Repairs should be numbered sequentially
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 (3) Repair Types: E = Extrusion and F = Fusion

ABBREVIATIONS:
 GV = Gas Vent AT = Anchor Trench
 EXT = Existing PP = Pipe Penetration

Geomembrane Repair Log Summary



Client Name: IESI Cherokee Village
Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

☒ **Primary**
☐ **Secondary**
☐ **Other:** _____

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/19/15		P14,15,22			61	P	E	6.0	1.5	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P15,21,22			62	P	E	6.0	1.5	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P15,16,21			63	P	E	3.0	2.0	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P16,17,20,21			64	P	E	2.0	3.0	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P17,21	7	P16,17,20	65	G	E	0.5	-	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P17,19,20			66	P	E	6.0	4.0	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P18,19	42	SEOS	67	DS8	E	6.0	3.0	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P22,23,24			68	P	E	-	-	1.5	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P22,23	22	22,23,24	69	DS9	E	6.0	3.0	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P17,20	10	P16,17,20	70	DS10	E	6.0	2.0	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P4,5	3	P4,5,6	71	DS3	E	6.0	2.0	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P7,9	25	P1,7,9	72	DS6	E	6.0	2.0	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P6,34,36			73	P	E	2.0	2.0	-	22	JP	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		6,33,34			74	P	E	2.0	2.0	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		6,31,33			75	P	E	2.0	2.0	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P6,30,31			76	P	E	2.0	1.5	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P6,29,30			77	P	E	2.0	1.5	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P6,28,29			78	P	E	2.0	1.5	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P6,27,28			79	P	E	2.0	1.5	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ
10/19/15		P6,25,27			80	P	E	3.0	2.0	-	76	MF	AZ	10/19/15	RR	P	VAC	AZ

NOTES: (1) Repair No.: Repairs should be numbered sequentially
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ABBREVIATIONS:
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Geomembrane Repair Log Summary



Client Name: IESI Cherokee Village
Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

☒ Primary
☐ Secondary
☐ Other: _____

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/19/15		P6,23,25			81	P	E	2.0	2.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P23,25,26			82	P	E	-	-	2.0	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P25,26,27			83	P	E	-	-	2.0	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P23,24,26			84	P	E	-	-	2.0	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P27,28	150	SEOS	85	DS11	E	6.0	2.0	-	76	MCF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P30,31	10	P30,31,32	86	DS12	E	6.0	2.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P30,31,32			87	P	E	2.0	1.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P31,32,33			88	P	E	2.0	1.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15	32		2	31,32,33	89	P	E	1.0	1.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P32,33	90	SEOS	90	DS13	E	6.0	2.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P25,27	25	P1,25,27	91	P	E	-	-	2.0	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P33,34,35			92	P	E	2.0	3.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/19/15		P34,35,36			93	P	E	2.0	2.0	-	76	MF	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P1-EXT	8	P1,7,EXT	94	P	E	3.0	2.0	-	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P7-TIE	1	P1,7,EXT	95	P	E	-	-	2.0	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P7-TIE	3	P1,7,EXT	96	P	E	4.0	2.0	-	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/20/15	EXT		20	P1,7,9	97	P	E	-	-	2.0	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/20/15	EXT		34	P1,7,9	98	P	E	-	-	2.0	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/20/15	EXT		37	P1,7,9	99	P	E	-	-	2.0	75	TA	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P7,EXT	40	P1,7,9	100	P	E	-	-	2.0	75	TA	AZ	10/20/15	RR	P	VAC	AZ

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Geomembrane Repair Log Summary



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Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

☒ Primary
☐ Secondary
☐ Other: _____

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/20/15	EXT		53	P1,7,9	101	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/20/15	EXT		72	P1,7,9	102	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/20/15	EXT		149	P1,7,9	103	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/20/15	EXT		172	P1,7,9	104	P	E	9.0	3.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P7,TIE	205	P1,7,TIE	105	P	E	10.0	-	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P8,10	23	P8,9,10	106	P	E	-	-	2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P37,TIE	3	7,37,EXT	107	P	E	-		2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P38,TIE	20	NEOS	108	P	E	-	-	1.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P38,TIE	21	NEOS	109	P	E	-	-	1.5	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P7,TIE	5	P37	110	P	E	-	-	2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P1-EXT	32	P1,7,EXT	111	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/20/15	EXT		66	P1,7,TIE	112	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/20/15	EXT		102	P1,7,TIE	113	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/20/15	EXT		119	P1,7,TIE	114	P	E	-	-	2.0	75	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P40,41,42			115	P	E	-	-	2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P41,42,43,44			116	P	E	3.5	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P43,44,45			117	P	E	-	-	2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		42,44	13	42,43,44	118	DS15	E	6.0	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P39,40	53	P6,39,40	119	DS14	E	6.0	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/20/15		P52,53,54			120	P	E	2.0	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ

NOTES: (1) Repair No.: Repairs should be numbered sequentially
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Geomembrane Repair Log Summary



Client Name: IESI Cherokee Village
Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

☒ **Primary**
☐ **Secondary**
☐ **Other:** _____

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/20/15		P53,54,55			121	P	E	2.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P45,46,47			122	P	E	2.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/21/15		P46,47,48			123	P	E	3.0	3.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P36,39	24	SEOS	124	P	E	2.5	1.5	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P44,45	10	SEOS	125	P	E	-	-	2.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/21/15		P48,49,51			126	P	E	2.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P49,50,51			127	P	E	3.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P6,39,36			128	P	E	-	-	2.5	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P6,39,40			129	P	E	-	-	3.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P6,11,40			130	P	E	7.0	4.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,40,41			131	P	E	-	-	2.5	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,41,43			132	P	E	-	-	2.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,43,45			133	P	E	-	-	3.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,45,46			134	P	E	-	-	3.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,46,48			135	P	E	-	-	3.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,48,49			136	P	E	-	-	3.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,49,50			137	P	E	-	-	3.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,50,52			138	P	E	-	-	3.0	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,52,53			139	P	E	3.0	3.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P11,53,55			140	P	E	6.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ

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Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

☒ **Primary**
☐ **Secondary**
☐ **Other:** _____

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/20/15		P10,11,55			141	P	E	3.5	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P8,10,55			142	P	E	-	-	1.5	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P7,37	7	N TIE	143	DX1	E	6.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P7,8,55			144	G	E	4.0	-	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/20/15		P37,38,55,56			145	P	E	7.0	2.0	-	22	JP	AZ	10/20/15	RR	P	VAC	AZ
10/21/15		P55,56,57			146	P	E	3.0	3.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P57,63,EXT			147	P	E	6.0	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P57,62,63			148	P	E	-	-	2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P57,61,62			149	P	E	-	-	2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P56,57,60,61			150	P	E	-	-	2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P56,59,60			151	P	E	-	-	2.0	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P56,58,59			152	P	E	2.0	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P38,56,58,EXT			153	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P36,39,65			154	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P35,36,65			155	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P33,35,65			156	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P32,33,65			157	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P30,32,65			158	P	E	2.0	2.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P29,30,65			159	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P28,29,65			160	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ

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Liner Installer: Comanco

Liner System

☒ **Primary**
☐ **Secondary**
☐ **Other:** _____

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 Phone 501.847.9292
 Fax 501.847.9210

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/21/15		P27,28,65			161	P	E	3.0	2.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P27,64,65			162	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P26,27,64			163	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P24,26,64			164	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P22,24,64			165	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		21,22,64			166	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		21,64	7	21,22,64	167	P	E	4.0	2.5	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P20,21,64			168	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P19,20,64			169	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P18,19,64			170	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P18,64,67			171	P	E	3.0	2.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P18,66,67			172	P	E	-	-	2.0	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		P55,56	30	55,56,57	173	DS17	E	7.0	2.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		58,EXT,EXT	12	NEOS	174	P	E	-	-	2.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		P56,60	57	NEOS	175	D18	E	6.0	2.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		61,EXT,EXT	81	NEOS	176	P	E	-	-	2.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		60,EXT,EXT	56	NEOS	177	P	E	3.0	1.5	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		59,EXT,EXT	35	NEOS	178	P	E	2.5	2.5	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		62,EXT,EXT	104	NEOS	179	P	E	-	-	1.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		61,62,EXT			180	P	E	-	-	1.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ

NOTES: (1) Repair No.: Repairs should be numbered sequentially
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 (3) Repair Types: E = Extrusion and F = Fusion

ABBREVIATIONS:
 GV = Gas Vent AT = Anchor Trench
 EXT = Existing PP = Pipe Penetration

Geomembrane Repair Log Summary



Client Name: IESI Cherokee Village
Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

☒ Primary
☐ Secondary
☐ Other: _____

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/21/15		62,EXT	127	NEOS	181	P	E	-	-	2.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		62,EXT	126	NEOS	182	P	E	2.5	1.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		62,EXT	144	NEOS	183	P	E	-	-	2.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		62,EXT,EXT	151	NEOS	184	P	E	2.0	1.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		62,EXT	165	NEOS	185	P	E	2.0	1.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		62,63,EXT			186	P	E	4.0	2.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		63,EXT,EXT	196	NEOS	187	P	E	-	-	2.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		63,EXT,EXT	218	NEOS	188	P	E	-	-	1.5	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		63,EXT	10	SEOS	189	P	E	3.0	3.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		57,EXT,EXT	2	57,68,EXT	190	P	E	3.0	2.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		54,55	70	53,54,55	191	DS20	E	6.0	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		49,50	85	49,50,51	192	DS19	E	6.0	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		46,48	21	46,47,48	193	DS16	E	6.0	2.0	-	22	JP	AZ	10/21/15	RR	P	VAC	AZ
10/21/15		8,55	14	8,10,55	194	P	E	-	-	2.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		57,EXT	10	NEOS	195	P	E	4.0	2.5	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		62,EXT	114	NEOS	196	P	E	-	-	2.0	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/21/15		18,67	25	18,64,67	197	DS21	E	6.0	2.0	-	75	TA	AZ	10/21/15	RR	P	VAC	AZ
10/22/15		1,2,72			198	P	E	10.0	2.5	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/22/15		2,3,72			199	P	E	2.5	2.5	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/22/15		1,3,70,71			200	P	E	6.0	2.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ

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ABBREVIATIONS:
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Geomembrane Repair Log Summary



Client Name: IESI Cherokee Village
Contractor: Twehouse
Project Name: Cell B2
Address: 100 Landfill Road
Location: Cherokee Village, AR 72529

Project Number: 35157094
CQA Monitor: Adam Zimmerman
Reviewed By: Dave McCormick, P.E.
Approved By: Dave McCormick, P.E.
Liner Installer: Comanco

Liner System

☒ **Primary**
☐ **Secondary**
☐ **Other:** _____

25809 Interstate 30 South
 Bryant, AR 72022
 Phone 501.847.9292
 Fax 501.847.9210

DATE	LOCATION				REPAIR NO. AND CODE		REPAIR TYPE (3)	SIZE			WELDER ID		QA ID	NON-DESTRUCTIVE TESTING				
	PANEL	SEAM	DIST (ft)	OFFSET	CODE			LENGTH (ft)	WIDTH (ft)	DIA (ft)	MACH NO	OPER ID		DATE	OPER ID	PASS/ FAIL	ACTION	QA ID
					(1)	(2)												
10/22/15		1,3,69			201	P	E	-	-	1.5	22	JP	AZ	10/24/15	RR	P	VAC	WW
10/22/15		3,71	9	1,70,71	202	DS23	E	7.0	2.0	-	22	JP	AZ	10/24/15	RR	P	VAC	WW
10/22/15		1,71	10	1,70,72	203	DS22	E	7.0	2.0	-	22	JP	AZ	10/24/15	RR	P	VAC	WW
10/22/15		1,3,71,72			204	P	E	6.0	3.0	-	22	JP	AZ	10/22/15	RR	P	VAC	AZ
10/22/15		1,70	12	1,69,70	205	P	E	4.0	2.0	-	22	JP	AZ	10/24/15	RR	P	VAC	WW
10/22/15		1,3,69,70			206	P	E	5.0	2.0	-	22	JP	AZ	10/24/15	RR	P	VAC	WW
10/26/15		P1,71	20	P72	207	D22A	E	6.0	2.0	-	22	MF	WW	10/26/15	RR	P	VAC	WW
10/26/15		P1,72	10	P71	208	D22B	E	6.0	2.0	-	22	MF	WW	10/26/15	RR	P	VAC	WW
10/26/15		P1,71,72			209	C	E	48.0	2.0	-	22	MF	WW	10/26/15	RR	P	VAC	WW
10/26/15	16		2,10	P21,17	210	P	E	2.0	2.0	-	22	MF	WW	10/26/15	RR	P	VAC	WW

NOTES: (1) Repair No.: Repairs should be numbered sequentially
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ABBREVIATIONS:
 GV = Gas Vent AT = Anchor Trench
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APPENDIX S

GEOCOMPOSITE MANUFACTURER'S QC CERTIFICATES

Roll Allocation List

Sales Order SO-076090
Customer Name Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

Serial number	Item Number	Resin Lot	Manufacturing date	Length
131476029	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476030	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476031	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476032	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476033	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476034	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476035	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476036	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476037	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476038	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476039	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476040	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476041	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476042	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476043	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476044	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476045	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476046	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476047	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476048	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476049	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476050	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476051	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476052	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476053	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476054	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476055	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476056	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476057	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476058	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476059	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476060	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476061	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476063	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476064	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476065	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476066	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476067	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476068	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476069	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476070	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476071	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476072	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476073	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476074	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476075	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476076	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476077	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476078	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00
131476079	FS2-200E-08-08-FA-00	CFH611280	10/10/2015	260.00



ROLL TEST DATA REPORT



Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-076090	Progressive Waste Solutions	Cherokee Village AR US	FS2-200E-08-08-FA-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
131476029	219	58	0.959	2.7	2.5	2.0	2.0	1.5
131476030	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476031	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476032	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476033	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476034	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476035	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476036	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476037	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476038	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476039	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476040	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476041	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476042	220	57	0.961	2.7	3.0	1.2	2.5	0.8
131476043	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476044	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476045	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476046	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476047	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476048	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476049	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476050	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476051	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476052	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476053	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476054	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476055	220	61	0.961	2.8	2.3	2.4	1.7	1.9
131476056	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476057	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476058	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476059	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476060	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476061	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476063	223	58	0.965	2.5	2.5	1.9	2.1	1.4

ROLL TEST DATA REPORT



Report Date: Oct/13/2015

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-076090	Progressive Waste Solutions	Cherokee Village AR US	FS2-200E-08-08-FA-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
131476064	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476065	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476066	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476067	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476068	223	58	0.965	2.5	2.5	1.9	2.1	1.4
131476069	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476070	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476071	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476072	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476073	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476074	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476075	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476076	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476077	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476078	221	55	0.969	2.5	2.9	2.5	2.1	1.3
131476079	221	55	0.969	2.5	2.9	2.5	2.1	1.3

Laboratory Manager





Certificate of Analysis

Shipped To: GSE ENVIRONMENTAL, LLC
1245 EASTLAND AVE
KINGSTREE SC 29556
USA

Recipient: HARRELSON
Fax:

Delivery #: 89116100
PO #: 03-503804
Weight: 204950 LB
Ship Date: 08/28/2015
Package: BULK
Mode: Hopper Car
Car #: HCBX001674
Seal No: 28726

Product:
Marlex HHM 5502BN High Density Polyethylene Bulk

Lot Number: CFH611280

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.37	g/10mi
Density	D1505 or D4883	0.9547	g/cm3

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.

KEVIN AYRES
QUALITY ASSURANCE SUPERINTENDENT

For CoA questions contact Customer Service Representative at +1-832-813-4806



GSE Environmental, LLC.

Transmissivity Report

ASTM D4716

Roll No.

131476029

ROLL IDENTIFICATION

Roll Number 131476029
Product Name FS2-200E-08-08-FA-00
Production Date 10/10/2015

CUSTOMER INFORMATION

Order Number 76090
Customer Name Progressive Waste
Project Name Progressive Waste Cherokee Village
Location Cherokee Village, AR

Pressure (psf)	Gradient	Net/Composite	Transmissivity Results		Seat Time (min)	Boundary
(m²/sec)			(gal/min/ft)			
10,000	0.10	Composite	4.76E-04	2.30	15	SS Plates

GSE Roll Allocation

Order SO-076090
Customer Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

TRI/AUSTIN
1/100,000 & LOT

Roll#	Resin Lot	Product Code	Mfg Date	Length	Sent
131476029	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	10/12
131476030	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476031	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476032	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476033	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476034	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476035	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476036	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476037	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476038	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476039	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476040	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476041	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476042	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476043	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476044	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476045	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476046	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476047	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476048	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476049	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476050	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476051	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476052	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476053	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476054	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476055	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	10/12
131476056	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476057	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476058	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476059	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476060	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476061	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476063	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476064	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476065	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476066	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476067	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476068	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476069	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476070	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476071	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476072	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476073	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476074	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476075	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476076	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476077	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	

Order SO-076090
Customer Progressive Waste Solutions
Project Name Progressive Waste Cherokee Village

TRI/AUSTIN
1/100,000 & LOT

Roll#	Resin Lot	Product Code	Mfg Date	Length	Sent
131476078	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	
131476079	CFH611280	FS2-200E-08-08-FA-00	10/10/2015	260	

APPENDIX T

GEOCOMPOSITE CONFORMANCE TEST RESULTS



October 14, 2015

Mail To:

David McCormick
Terracon
25809 Interstate 30
Bryant, AR 72022

email: dcmccormick@terracon.com

Bill To:

<= Same (Job # 35157094)

Dear Mr. McCormick:

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: **Cherokee Village Landfill**

TRI Job Reference Number: E2402-22-06

Material(s) Tested: Two, GSE FS2-200E-8-8 Double Sided Geocomposite(s)

Test(s) Requested: Transmissivity (ASTM D 4716) - GC
Peel Strength (ASTM D 7005) - GC
Thickness (ASTM D 5199) - GN
Density (ASTM D 1505) - GN
Carbon Content (ASTM D 4218) - GN
Tensile Properties (ASTM D 5035, 12 ipm strain rate)
Mass/Unit Area (ASTM D 5261) - GT
Grab Tensile (ASTM D 4632) - GT
Puncture Strength (ASTM D 4833) - GT
Apparent Opening Size (ASTM D 4751) - 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



GEOCOMPOSITE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE FS2-200E-8-8 Double Sided Geocomposite

Sample Identification: 131476029

TRI Log #: E2402-22-06

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):	10,000																						
	1.0																						
	12																						
	12																						
Test Length (in)	12																						
	12																						
Test Width (in)	12																						
Plate / Sample / Plate																							
Seat Time (hours)	Specimen																						
	0.25	Volume (cc)	734	730	726	892	880	863															
													Time (s)	5.63	5.58	5.53	5.49	5.43	5.41				
Transmissivity (m^2/s)	4.27E-04	4.29E-04	4.30E-04	5.35E-04	5.34E-04	5.25E-04																	
											Test Temp (C)	20.2	20.0										
																						Temp. Corr. Factor	0.999



GEOCOMPOSITE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE FS2-200E-8-8 Double Sided Geocomposite

Sample Identification: 131476029

TRI Log #: E2402-22-06

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)	4.19	4.75	3.32	3.75	3.66	4.51	4.22	3.82	4.09	3.94	4.03	0.42	8 min. ave.
Mass/Unit Area (oz/sq.yd)	9.75	11.05	7.72	8.72	8.51	10.49	9.82	8.89	9.51	9.16	9.36	0.98	
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	316	339	234	258	292	315	272	220	225	233	270	43	220 min. ave.
TD - Tensile Strength (lbs)	366	437	379	376	259	345	367	350	359	346	358	44	220 min. ave.
MD - Elong. @ Max. Load (%)	85	85	82	89	91	93	81	92	92	85	88	4	50 min. ave.
TD - Elong. @ Max. Load (%)	93	85	91	90	98	101	89	85	94	97	92	5	50 min. ave.
Puncture Resistance (ASTM D 4833)													
Puncture Strength (lbs)	155	152	165	191	131	119	164	174	128	150	150	22	120 min. ave.
	169	166	129	116	138								
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.135	0.116	0.134	0.103	0.129						0.123	0.014	80 min.
Sieve No.	100	100	100	140	100						100		
MD Machine Direction	TD Transverse Direction												



GEOCOMPOSITE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE FS2-200E-8-8 Double Sided Geocomposite

Sample Identification: 131476029

TRI Log #: E2402-22-06

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)	4.02	4.02	4.07	4.22	3.88	4.44	4.43	3.08	3.53	3.97	3.97	0.41	8 min. ave.	
	Mass/Unit Area (oz/sq.yd)	9.35	9.35	9.47	9.82	9.02	10.33	10.30	7.16	8.21	9.23			9.22
Grab Tensile Properties (ASTM D 4632)														
MD - Tensile Strength (lbs)	352	277	274	276	291	379	359	264	322	313	311	41		220 min. ave.
	TD - Tensile Strength (lbs)	317	313	370	380	288	335	399	300	292	225		322	
MD - Elong. @ Max. Load (%)	100	87	101	82	79	95	91	89	95	81	90	8	50 min. ave.	
TD - Elong. @ Max. Load (%)	103	95	100	97	122	95	99	90	96	89	99			9
Puncture Resistance (ASTM D 4833)														
Puncture Strength (lbs)	180	162	141	151	114	148	149	167	161	119	149	20	120 min. ave.	
		158	181	140	145	124								
Apparent Opening Size (ASTM D 4751)														
Opening Size Diameter (mm)	0.125	0.129	0.134	0.127	0.138						0.131	0.005	80 min.	
Sieve No.	100	100	100	100	100						100			
MD Machine Direction	TD Transverse Direction													



GEOCOMPOSITE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE FS2-200E-8-8 Double Sided Geocomposite

Sample Identification: 131476055

TRI Log #: E2402-22-06

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											Plate Inflow															

GEOCOMPOSITE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE FS2-200E-8-8 Double Sided Geocomposite

Sample Identification: 131476055

TRI Log #: E2402-22-06

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)	3.83	3.68	3.63	3.88	4.31	3.35	3.30	3.12	3.34	3.94	3.64	0.36	8 min. ave.
Mass/Unit Area (oz/sq.yd)	8.91	8.56	8.44	9.02	10.03	7.79	7.68	7.26	7.77	9.16	8.46	0.85	
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	279	272	285	334	338	296	264	215	246	256	279	38	220 min. ave.
TD - Tensile Strength (lbs)	283	319	452	412	291	368	332	311	314	193	328	72	220 min. ave.
MD - Elong. @ Max. Load (%)	89	85	88	91	88	93	81	93	88	77	87	5	50 min. ave.
TD - Elong. @ Max. Load (%)	102	85	95	85	92	116	92	91	98	89	95	9	50 min. ave.
Puncture Resistance (ASTM D 4833)													
Puncture Strength (lbs)	147	140	170	153	114	127	163	191	165	163	149	26	120 min. ave.
	149	164	175	118	96								
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.118	0.130	0.123	0.138	0.122						0.126	0.008	80 min.
Sieve No.	100	100	100	100	100						100		
MD Machine Direction	TD Transverse Direction												



GEOCOMPOSITE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE FS2-200E-8-8 Double Sided Geocomposite

Sample Identification: 131476055

TRI Log #: E2402-22-06

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)	4.01	3.53	3.58	3.48	3.72	3.32	4.32	3.89	4.47	3.81	3.81	0.37	8 min. ave.	
	9.33	8.21	8.33	8.09	8.65	7.72	10.05	9.05	10.40	8.86	8.87			
Grab Tensile Properties (ASTM D 4632)														
MD - Tensile Strength (lbs)	310	294	320	259	347	326	263	247	293	332	299	34		220 min. ave.
	381	349	380	337	272	358	279	318	372	303	335	40	220 min. ave.	
MD - Elong. @ Max. Load (%)	86	75	114	77	83	87	83	78	77	75	84	12	50 min. ave.	
TD - Elong. @ Max. Load (%)	109	96	94	105	101	112	90	98	93	97	100	7	50 min. ave.	
Puncture Resistance (ASTM D 4833)														
Puncture Strength (lbs)	182	151	161	166	138	180	168	172	165	135	151	22	120 min. ave.	
	144	117	142	148	103									
Apparent Opening Size (ASTM D 4751)														
Opening Size Diameter (mm)	0.105	0.131	0.142	0.124	0.118						0.124	0.014	80 min.	
Sieve No.	140	100	100	100	100						100			
MD Machine Direction	TD Transverse Direction													

APPENDIX U LEACHATE COLLECTION SYSTEM MATERIAL TEST RESULTS

GEOTEXTILE



September 30, 2015

Mail To:

David McCormick
Terracon
25809 Interstate 30
Bryant, AR 72022

Bill To:

<= Same

email: dcmccormick@terracon.com

Dear Mr. McCormick:

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:	Cherokee Village Landfill
TRI Job Reference Number:	E2402-11-06
Material(s) Tested:	One, GSE 8 oz Nonwoven Geotextile(s)
Test(s) Requested:	Mass/Unit Area (ASTM D 5261) Grab Tensile (ASTM D 4632) Puncture Strength (ASTM D 4833) Apparent Opening Size (ASTM D 4751)

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

Sincerely,

Jarrett A. Nelson
Technical Director
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file



GEOTEXTILE TEST RESULTS

TRI Client: Terracon

Project: Cherokee Village Landfill

Material: GSE 8 oz Nonwoven Geotextile

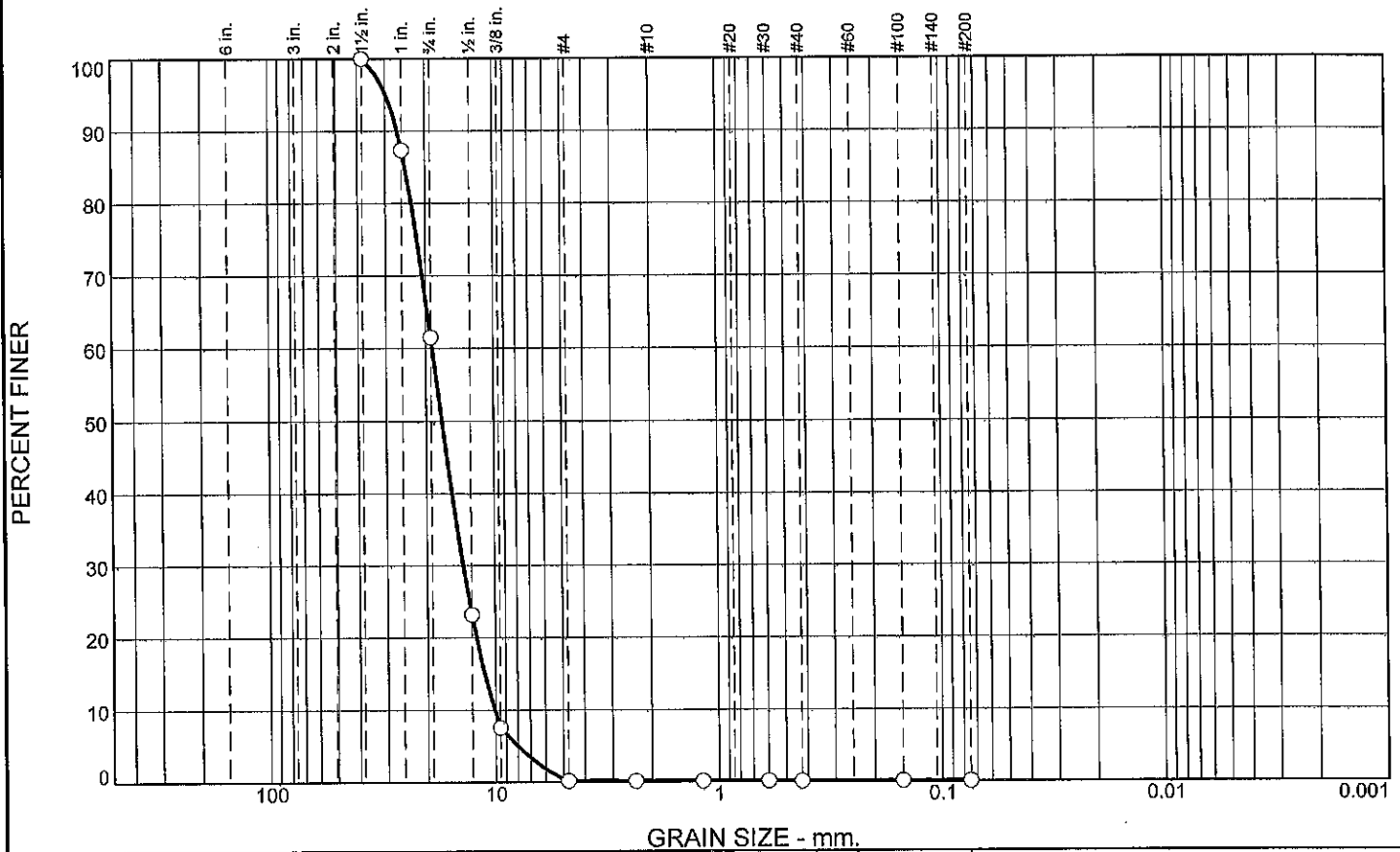
Sample Identification: 130490946

TRI Log #: E2402-11-06

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)	3.60	3.24	3.22	3.86	3.91	3.86	3.51	3.06	3.54	3.52	3.53	0.29	8 min.
Mass/Unit Area (oz/sq.yd)	8.37	7.54	7.49	8.98	9.09	8.98	8.16	7.12	8.23	8.19	8.22	0.68	
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	274	248	231	229	181	194	240	172	205	274	225	36	220 min.
TD - Tensile Strength (lbs)	300	227	313	181	287	291	355	296	270	328	285	50	220 min.
MD - Elong. @ Max. Load (%)	87	89	101	97	80	113	105	101	91	97	96	10	50 min.
TD - Elong. @ Max. Load (%)	110	98	93	117	97	95	114	87	104	109	102	10	50 min.
Puncture Resistance (ASTM D 4833)													
Puncture Strength (lbs)	155	148	140	127	113	148	122	121	121	113	136	17	120 min.
	167	137	158	124	144								
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.136	0.104	0.104	0.115	0.134						0.119	0.016	80 min.
Sieve No.	100	140	140	100	100						100		
MD Machine Direction	TD Transverse Direction												

GRAVEL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	38	62	0	0	0	0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100		
1	87		
.75	62		
.5	23		
.375	8		
#4	0		
#8	0		
#16	0		
#30	0		
#40	0		
#100	0		
#200	0		

* (no specification provided)

Material Description

GRAVEL
(poorly graded gravel)

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 26.5513 D₈₅= 24.5526 D₆₀= 18.7747
D₅₀= 17.0367 D₃₀= 13.8186 D₁₅= 11.2024
D₁₀= 10.1331 C_u= 1.85 C_c= 1.00

Classification

USCS= GP AASHTO=

Remarks

Source of Sample: 8766
Sample Number: GR-1

Date: 10-28-15

Terracon, Inc.

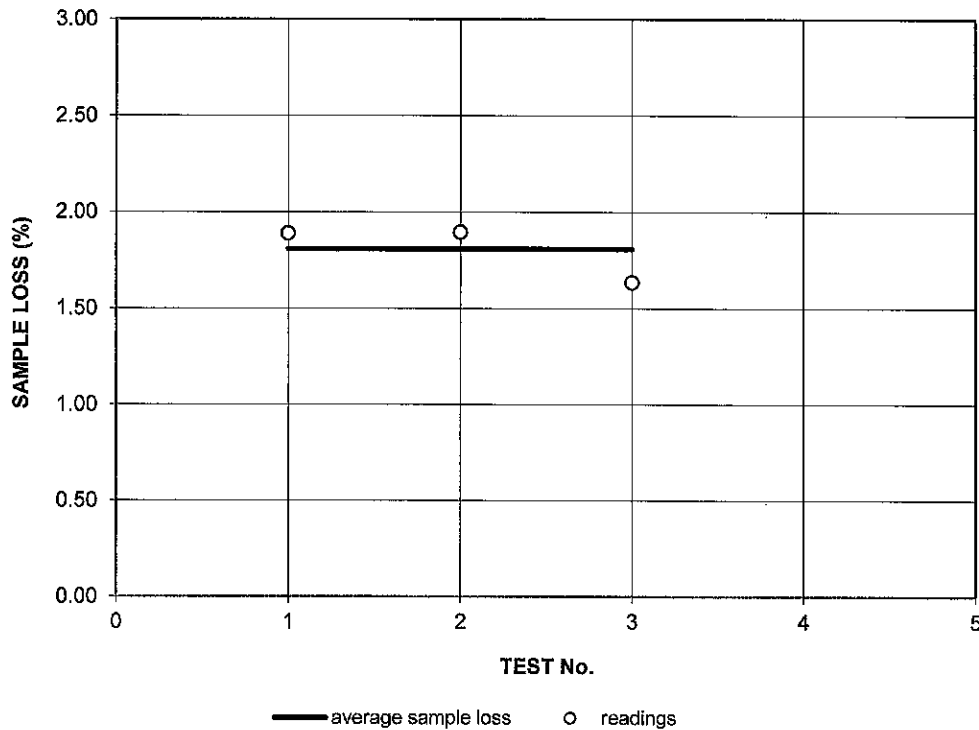
Cincinnati, Ohio

Client: IESI-AR LANDFILL CORPORATION
Project: CHEROKEE VILLAGE - CELL B2 CQA
 CHEROKEE VILLAGE LANDFILL - CHEROKEE VILLAGE, AR
Project No: 35157094 Exhibit 8766

Tested By: DR

Checked By: GS

INSOLUBLE CARBONATE CONTENT TEST

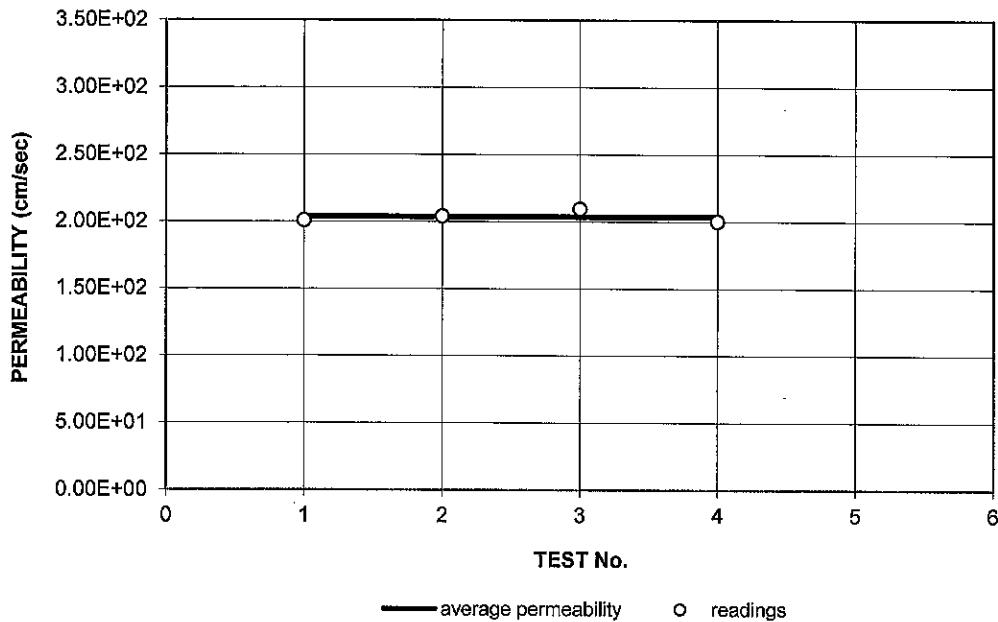


Test Specification: ASTM D 3042

Trial No.	Sample+ Tare Weight (g)	Tare Weight (g)	Sample Weight (g)	Sample+ Tare Weight (g)	Tare Weight (g)	Sample Weight (g)	Sample Loss (g)	Sample Loss (%)
1	778.1		778.1	763.4		763.4	14.7	1.89
2	802.3		802.3	787.1		787.1	15.2	1.89
3	758.6		758.6	746.2		746.2	12.4	1.63
Total	2339		2339	2296.7		2296.7	42.3	1.81

Material Description				Remarks			
Permeability (cm/s)2.04E+02 USCS				Solution: Hydrochloric Acid			
Project Name Cherokee Village-Cell B2				Tested by DBR Review. by GAS			
Client IESI W.O.# 35157094				INSOLUBLE CARBONATE CONTENT TEST 			
Sample Number S-8766							
Sample Location							
Date 29-Oct-15 Lab No. 8766							

CONSTANT HEAD PERMEABILITY TEST



Test Specification: ASTM D 2434

Test No.	Manometers		Water Levels		Water Head (cm)	Flow Volume (cm ³)	Elapsed Time (s)	Calculated Permeability (cm/s)
	H1 (cm)	H2 (cm)	L1 (cm)	L2 (cm)				
1		7.6	50	20	7.6	380019.4	9.87	2.01E+02
2		7.6	50	20	7.6	380019.4	9.71	2.04E+02
3		7.6	50	20	7.6	380019.4	9.46	2.09E+02
4		7.6	50	20	7.6	380019.4	9.9	2.00E+02
Average								2.04E+02

Specimen Conditions

Diameter D (in)	11.3	Weight of Specimen (gms)	22021.5
Length of Specimen (in)	10.0	Density of Specimen (pcf)	84.4
Length of Flow (in)	10.0	Approximate Porosity(%)	49.9

Material Description	Remarks
Carbonate Content (%) 1.81 USCS Water Content (%)	

Project Name	Cherokee Village-Cell B2			Tested by	FCE	Review. by	TGG
Client	IESI	W.O.#	35157094	CONSTANT HEAD PERMEABILITY TEST			
Sample Number	S-8766						
Sample Location							
Date	29-Oct-15	Lab No.	8766	Terracon			

PROTECTIVE COVER

LABORATORY COMPACTION CHARACTERISTICS OF SOIL REPORT

Terracon

Report Number: 35157094.0001

Service Date: 09/02/15

Report Date: 09/11/15

25809 I-30 South

Bryant, AR 72022

501-847-9292

Client

IESI-AR Landfill Corporation
Attn: Brady Stewart
100 Landfill Rd
Cherokee Village, AR 72529

Project

Cherokee Village - Cell B2 CQA
Cherokee Village Landfill
Cherokee Village, AR

Project Number 35157094

Material Information

Source of Material: Cell B2 footprint
Proposed Use: subgrade

Sample Information

Sample Date: 08/31/15
Sampled By: McCormick, David
Sample Location: Cell B2

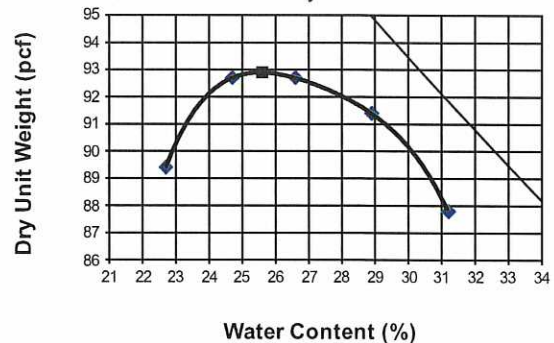
Sample Description: SG-1-Fat Clay with Sand

Laboratory Test Data

Test Procedure: ASTM D698
Test Method: Method A
Sample Preparation: Wet
Rammer Type: Manual
Maximum Dry Unit Weight (pcf): 92.9
Optimum Water Content (%): 25.6

	Result	Specifications
Liquid Limit:	59	
Plastic Limit:	25	
Plasticity Index:	34	
In-Place Moisture (%):		
Passing #4 (%):	94.0	
Passing #200 (%):	83.0	
USCS:	CH	

Zero Air Voids Curve for Assumed Specific Gravity 2.70



Comments:

Services: Moisture-Density Relations

Terracon Rep.: Shawn Young

Reported To:

Contractor:

Report Distribution:

(1) Terracon Consultants, Inc., Emailed

Reviewed By:

Jennifer Clarmann
McCormick, David

Test Methods: AASHTO T99

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL REPORT

Report Number: 35157094.0001
Service Date: 09/02/15
Report Date: 09/11/15

Terracon

25809 I-30 South
Bryant, AR 72022
501-847-9292

Client

IESI-AR Landfill Corporation
Attn: Brady Stewart
100 Landfill Rd
Cherokee Village, AR 72529

Project

Cherokee Village - Cell B2 CQA
Cherokee Village Landfill
Cherokee Village, AR

Project Number: 35157094

Sieve Analysis	
Sieve Size (Inches)	Percent Passing (%)
3"	100
1 1/2"	100
1"	100
3/4"	100
3/8"	97
#4	94
#10	91
#40	88
#200	83.3

Services: Moisture-Density Relations

Terracon Rep.: Shawn Young

Reported To:

Contractor:

Report Distribution:

(1) Terracon Consultants, Inc., Emailed

Started

Finished:

Reviewed By:


McCormick, David

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL REPORT

Terracon

Report Number: 35157094.0002

Service Date: 09/12/15

Report Date: 09/22/15

25809 I-30 South

Bryant, AR 72022

501-847-9292

Client

IESI-AR Landfill Corporation

Attn: Brady Stewart

100 Landfill Rd

Cherokee Village, AR 72529

Project

Cherokee Village - Cell B2 CQA

Cherokee Village Landfill

Cherokee Village, AR

Project Number 35157094

Material Information

Source of Material: Cell B2

Proposed Use: Subgrade

Sample Information

Sample Date: 09/04/15

Sampled By: McCormick, David

Sample Location: Cell B2

Sample Description: SG-2

Laboratory Test Data

Test Procedure: ASTM D698

Test Method: Method B

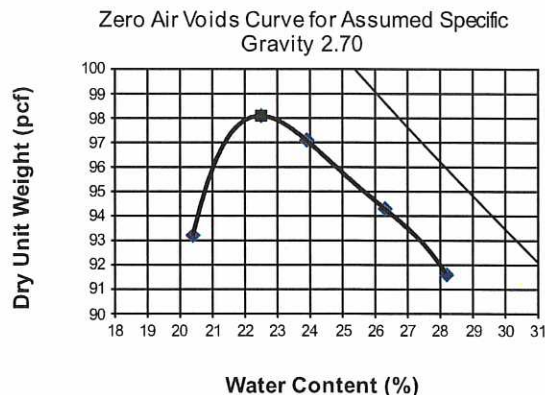
Sample Preparation: Wet

Rammer Type: Manual

Maximum Dry Unit Weight (pcf): 98.1

Optimum Water Content (%): 22.5

	Result	Specifications
Liquid Limit:	66	
Plastic Limit:	23	
Plasticity Index:	43	
In-Place Moisture (%):		
Passing #4 (%):	93.0	
Passing #200 (%):	79.0	
USCS:		



Comments:

Services: Moisture-Density Relations

Terracon Rep.: McCormick, David

Reported To:

Contractor:

Report Distribution:

(1) Terracon Consultants, Inc., Emailed

Reviewed By:

David McCormick
McCormick, David

Test Methods: AASHTO T99

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

LABORATORY COMPACTION CHARACTERISTICS OF SOIL REPORT

Report Number: 35157094.0002
Service Date: 09/12/15
Report Date: 09/22/15

Terracon

25809 I-30 South
Bryant, AR 72022
501-847-9292

Client

IESI-AR Landfill Corporation
Attn: Brady Stewart
100 Landfill Rd
Cherokee Village, AR 72529

Project

Cherokee Village - Cell B2 CQA
Cherokee Village Landfill
Cherokee Village, AR

Project Number: 35157094

Sieve Analysis	
Sieve Size (Inches)	Percent Passing (%)
3"	100
1 1/2"	100
1"	100
3/4"	99
3/8"	96
#4	93
#10	89
#40	85
#200	79.3

Services: Moisture-Density Relations

Terracon Rep.: McCormick, David

Reported To:

Contractor:

Report Distribution:

(1) Terracon Consultants, Inc., Emailed

Started

Finished:

Reviewed By:


McCormick, David

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

APPENDIX V

PROJECT PHOTOGRAPHIC LOG



1. Looking east at top of subgrade.



2. Looking north at deployment of geosynthetic clay liner (GCL).



3. Looking east at deployment and seaming of 60 mil textured geomembrane..



4. Looking north at 60 mil geomembrane in the west anchor trench.



5. Looking west at completed 60 mil geomembrane and deployment of double-sided geocomposite.



6. Looking west at completed double-sided geocomposite deployment



7. Looking east at 6" HDPE leachate line and placement of the rainflap berm.



8. Looking west at completed rainflap berms and placement of protective cover..

Cell B2 CQA Certification Report

IESI Cherokee Class 1 Landfill ■ Fulton County, Arkansas

November 2015 ■ Terracon Project No. 35157094

Terracon



9. Looking east at completed Cell B2.

