

Construction Observation Report Cell D1-D2

Des Moines County Regional Solid Waste Commission
1818 West Burlington Avenue
Burlington, IA 52601

SCS ENGINEERS

27224417.00 | September 2025

1690 All State Court
West Des Moines, IA 50265

Title Page and Index
Construction Observation Report – Cell D1-D2
Des Moines County Regional Solid Waste Commission
Permit Number 29-SDP-01-76P

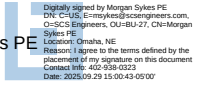
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1 CERTIFICATION STATEMENT

I hereby certify that the approximately 8.1 acres of composite liner, and leachate collection systems for the Cell D1-D2 municipal solid waste disposal area of the Des Moines County Regional Sanitary Landfill were constructed in accordance with the requirements of Iowa Administrative Code Rule 567-113.7(455B) and the approved plans and specifications. More specifically, the unit was constructed in substantial compliance with the document entitled Quality Control and Assurance (QC&A) For New Cell Construction (January 2025) and the construction documentation documents provided by SCS Engineers dated January 2024.

 09/29/2025	I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.  Morgan Sykes PE 09/29/2025 (signature) (date) Printed or typed name: Morgan B. Sykes License Number: 17859 My license renewal date is December 31, 2025 Pages or sheets covered by this seal: Report Sections 1.0– 8.0 and Appendices A - G
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2 PROJECT OVERVIEW

SCS Engineers (SCS) is pleased to present this Construction Observation Report for the construction of the Cell D1-D2 municipal solid waste disposal cell at the Des Moines County Sanitary Landfill located at 13758 Washington Road, West Burlington, Iowa 52655. This report provides information and data to comply with 567 Iowa Administrative Code (IAC) Chapter 113.7 (455B) and the approved permit documents for the facility.

2.1 PROJECT SUMMARY

Cell D1-D2 was constructed/installed by DeLong Construction, Inc. The original construction drawings for the project are included in Appendix A, titled “Cell D1-D2 Construction Plans,” prepared by SCS Engineers, originally dated January 2025.

The following QC&A activities were performed by SCS for the Cell D1-D2 cell construction:

- Attended project meetings;
- Collected soil samples from the borrow area and Cell D1-D2 construction area and submitted the samples to a geotechnical laboratory for testing;
- Observed subgrade proof rolling activities;
- Reviewed the geosynthetic manufacturer’s quality control submittals for compliance with manufacturer’s specifications;
- Observed underdrain geocomposite deployment and installation;
- Observed installation of a passive gas system vent;
- Conducted field moisture and density testing during construction of the compacted soil liner using a nuclear density/moisture gauge;
- Observed and documented the high-density polyethylene (HDPE) geomembrane deployment, seaming, and testing (non-destructive and destructive);
- Collected and submitted HDPE geomembrane seam samples to a geosynthetics testing laboratory for seam strength analysis (destructive testing);
- Collected leachate collection system samples for laboratory analysis;
- Observed the sand drainage layer placement;
- Observed the leachate and groundwater cleanout pipes extension;
- Observed temporary future liner tie-in berm construction;
- Observed and photographed construction activities. The construction photo log is presented as Appendix G

2.2 PROJECT CONTACT LIST

Owner

Des Moines County Solid Waste Commission
1818 West Burlington Avenue
Burlington, IA 52601
Mr. Chris Ball, Executive Director

Design Engineer

SCS Engineers
1690 All State Court, Suite 100
West Des Moines, IA 50265
Mr. Morgan Sykes, PE, Project Manager

Surveyor

Bruner, Cooper & Zuck, Inc.
835 Golden Valley Drive
Bettendorf, IA 52722
Mr. Michael Olson, LS

Geomembrane/Geotextile Supplier

SKAPS Industries
571 Industrial Parkway
Commerce, GA 30529
Mr. Tom Nichols, Corporate Quality Director

Geosynthetics Testing Laboratory

TRI/Environmental, Inc.
9063 Bees Caves Road
Austin, Texas 78733
Ms. Nicole Saucedo, Project Manager

Contractor

DeLong Construction Inc.
1320 N 8th Avenue
Washington, IA 52353
Mr. Dan Hicks, Project Manager

Construction Quality Assurance Engineer

SCS Engineers
1690 All State Court, Suite 100
West Des Moines, IA 50265
Mr. Morgan Sykes, PE, Project Manager
Mr. Clayton Davis, EIT, Resident Project Representative

Geosynthetics Installer

Texas Environmental Plastics, LTD
28089 Robinson Rd
Conroe, TX 77385
Mr. John Dyring

Soil Testing Laboratories

Shannon & Wilson
10422 Baur Boulevard
St. Louis, MO
Mr. Craig Brooks, Laboratory Manager

Klingner & Associates

610 N 4th Street, Suite 100
Burlington, IA 52601
Mr. Bryan Bross

3 SUBGRADE CONSTRUCTION

DeLong Construction began the construction of the abutment overliner in April 2025. The subgrade system for Abutment Cell D1-D2 was prepared by excavating to the grades depicted in the Construction Drawings shown in Appendix A. The cell subgrade elevations were achieved by relocating existing C&D waste to the active face and removal of native soil.

Prior to the construction of the compacted soil liner, the subgrade surface was proof rolled with a piece of loaded heavy equipment and observed for excessive rutting, pumping, soft spots, and/or sharp protrusions. Failed areas of subgrade were identified, over-excavated to a depth 2 feet, and backfilled with a clean compacted fill soil. Once the design subgrade elevation was achieved and passed proof roll evaluations, the subgrade was surveyed by the Surveyor to document final subgrade elevations were within the allowable tolerance of the design. Top of subgrade elevations are included in Appendix B Thickness Verification.

4 COMPACTED SOIL LINER CONSTRUCTION

The Abutment Cell D1-D2 cell design specified a liner system that included a minimum 2-foot thick compacted soil liner with a hydraulic conductivity not greater than 1×10^{-7} centimeters per second (cm/sec). This section describes the construction of the compacted soil liner portion of the composite liner system.

4.1 LABORATORY TESTING

Samples of the compacted soil liner borrow source were collected by the Contractor for laboratory testing. The samples were collected from an onsite borrow area and visually observed prior to submittal for analysis. The soil samples were submitted to Klingner & Associates (Klingner) for laboratory testing in accordance with the QC&A plan. Each bulk sample was tested for grain size, Atterberg limits, soil classification, maximum dry density, and optimum moisture content. The contractor used Shelby tubes to obtain undisturbed samples of the compacted soil liner. Holes created by the Shelby tube samples were backfilled with bentonite.

5 GEOSYNTHETICS INSTALLATION

Prior to geosynthetics deployment, the surface of the compacted soil liner was inspected by Texas Environmental Plastics' (TEP) QC&A Officer's Designee for the presence of protruding objects and rocks. Any protrusions were removed and irregular surfaces were regraded, recompacted, and smooth rolled.

The 60-mil double-sided textured high-density polyethylene (HDPE) geomembrane was installed directly on top of the compacted soil liner in panels as shown in Appendix D. The panels were welded together using double-fusion-welded seams, which provided a means to conduct air pressure leak testing of the welds. All seams passed the field testing (see Appendix D6).

In areas inaccessible to double-fusion welds, extrusion welds were used. Typically, extrusion welds were used at the intersection of three or more panels, to repair destructive test areas, and where pipe boots were installed. Extrusion welds were tested using the vacuum box method; all extrusion welds passed the testing (see Appendix D).

The material certification and warranty documents for the rolls of FML used for the project are provided in Appendix D. The FML was anchored in place using a 24-inch wide by 24-inch deep anchor trench that was excavated in the compacted fill along the north, south, and west boundaries of the cell prior to the FML deployment. Plywood was placed on the north, south, and west boundaries to protect the FML and serve as a locator for future tie-in.

6 LEACHATE COLLECTION SYSTEM CONSTRUCTION

6.1 LEACHATE COLLECTION PIPING

Approximately 3,121 linear feet of 6-inch perforated HDPE SDR 11 leachate collection pipe was installed along the two east boundaries of D1 and D2 and connected to the existing 6-inch perforated HDPE SDR 11 pipe from the adjacent Cell 5. Gravel bedding and backfill were placed six inches above and below the perforated leachate collection pipe and the entire system was wrapped using geotextile.

The cleanouts for Cell D1-D2 were installed as shown in Appendix A with 6" solid HDPE SDR 11 piping, as shown on the drawings.

6.2 LEACHATE DRAINAGE AND PROTECTIVE LAYERS

After the installation of the FML, a 12-inch leachate drainage layer of sand was placed directly on top of the FML in the basal area. The gradation and permeability testing results for the sand are provided in Appendix E. The minimum thickness of 12 inches was achieved and verified at each of the points directed in the verification grid. The current thickness verification results are provided in Appendix B.

7 CONSTRUCTION DOCUMENTATION

The QC&A Officer's designee recorded daily construction activities, including summaries of weather conditions, locations in the facility where the construction was occurring, equipment, materials, and personnel utilized in the construction, meetings related to construction activities, and construction progress. Copies of the daily reports are provided in Appendix F.

Photographs were taken showing the general construction progress of the project. Photographs were taken during normal daylight hours. The dates of the photographs are shown in each photo caption. The construction photographs are provided in Appendix G. As-constructed drawings are provided in Attachment A.

8 GENERAL COMMENTS

The observations and notes presented in this report are based upon data obtained from the field, observations made during construction activities, and from other information discussed in this report. SCS has prepared this report for the exclusive use of our client. The report is meant for specific application to the project discussed and has been prepared in accordance with generally accepted environmental and geotechnical engineering practices. No warranties, express or implied, are intended or made.



Appendix A

Construction Documentation Drawings

DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION

DES MOINES COUNTY SANITARY LANDFILL

CELL D1-D2 CONSTRUCTION

PREPARED FOR



DES MOINES COUNTY REGIONAL
SOLID WASTE COMMISSION
1818 WEST BURLINGTON AVENUE
BURLINGTON, IA 52601

PROJECT SITE ADDRESS:
13758 WASHINGTON RD
WEST BURLINGTON, IA 52655

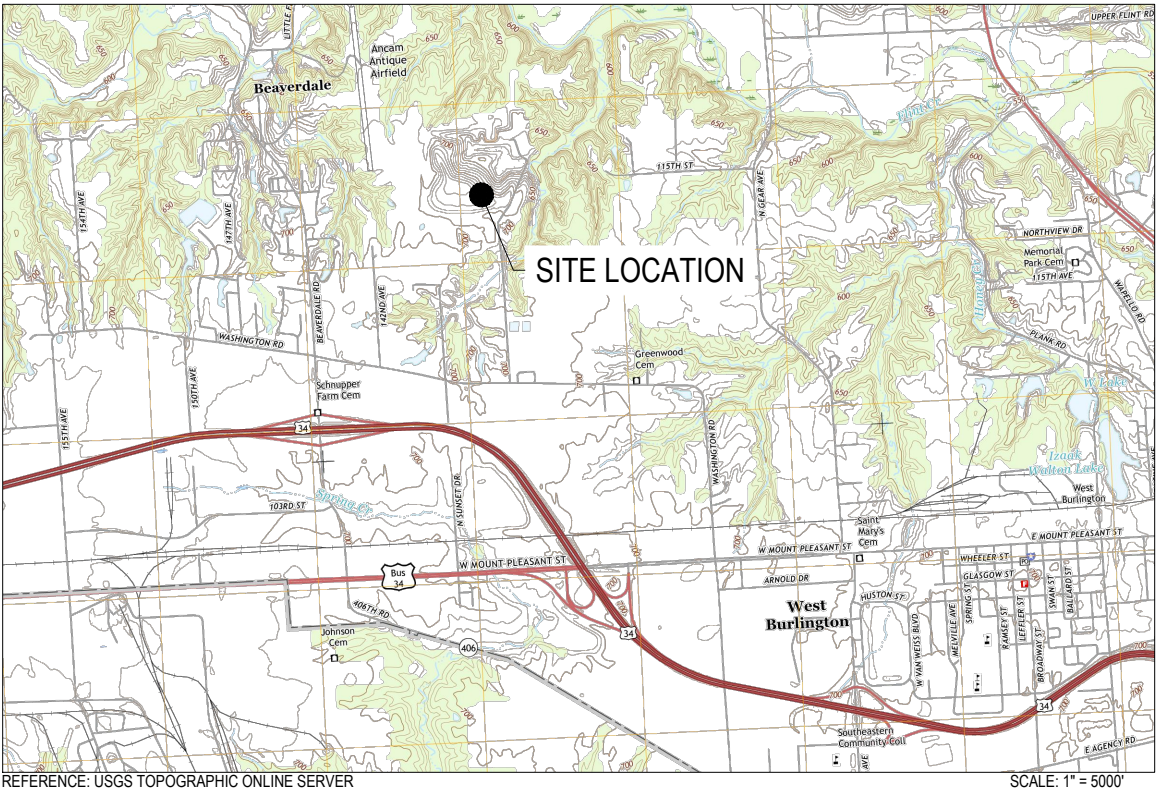
PREPARED BY

SCS ENGINEERS

1690 ALL STATE COURT, SUITE 100
WEST DES MOINES, IA 50265
PH. (515) 631-6160

PROJECT NO. 27224417.00

Solid Waste Permit No. 29-SDP-01-76P
AUGUST 2025



Sheet List Table	
Sheet Number	Sheet Title
C0.0	COVER
C0.1	LEGEND AND NOTES
C1.0	EXISTING CONDITIONS
C2.0	SITE PREPARATION & DEMOLITION
C2.1	SEDIMENT POND CLEANOUT
C3.0	SUBGRADE & GAS COLLECTION SYSTEM
C3.1	COMPACTED SOIL LINER
C3.2	LEACHATE & GROUNDWATER COLLECTION SYSTEM
C3.3	CERTIFICATION POINTS
C5.0	LINER SEQUENCE DETAILS
C5.1	TIE-IN DETAILS
C5.2	TIE-IN DETAILS (CONT.)
C5.3	MISCELLANEOUS DETAILS
C5.4	LEACHATE AND RAIN COVER DETAILS

- NOTE:
1. SHEET NUMBERING IS BASED ON DIVISIONS OF WORK. NOT ALL DIVISIONS MAY BE INCLUDED.
 2. THESE DRAWINGS WERE ORIGINALLY PRODUCED IN COLOR. USE OF BLACK AND WHITE COPIES MAY NOT ADEQUATELY CONVEY THE DESIGN INTENT AND SHOULD BE USED WITH CAUTION.

Construction Documentation Drawings were prepared by SCS Engineers from record information contained in Addenda, Change Orders, Drawings, Surveys, electronic and paper copies of documents, and other information received from the Construction Contractor.

Modifications made in red text were prepared by SCS Engineers on September 29, 2025

©PROJECT 27224417.DWG AUTOCAD SHEETS C0.1 LEGEND AND NOTES.DWG

LEGEND	
	APPROXIMATE EXISTING WASTE BOUNDARY
	FML BOUNDARY
	APPROXIMATE PROPERTY BOUNDARY
	BUILDING
	ABUTMENT GAS VENTING GEOCOMPOSITE
	GRAVEL ROAD
	PAVED ROAD
	CULVERT
	EXISTING CELL BOUNDARY
	MONITORING WELL
	LEACHATE EXTRACTION WELL
	LEACHATE PIEZOMETER
	GROUNDWATER PIEZOMETER
	LANDFILL GAS WELL
	GROUND WATER UNDERDRAIN DISCHARGE
	SURVEY CONTROL POINT
	POLE
	PROPOSED GROUNDWATER PIPE NETWORK (SOLID)
	PROPOSED GROUNDWATER CLEANOUT
	EXISTING GROUNDWATER PIPE NETWORK (SOLID)
	EXISTING GROUNDWATER PIPE NETWORK (PERFORATED)
	EXISTING GROUNDWATER CLEANOUT
	PROPOSED LEACHATE PIPE NETWORK (SOLID)
	PROPOSED LEACHATE PIPE NETWORK (PERFORATED)
	PROPOSED LEACHATE CLEANOUT
	EXISTING LEACHATE PIPE NETWORK (SOLID)
	EXISTING LEACHATE PIPE NETWORK (PERFORATED)
	EXISTING GAS PIPING (SOLID/PERF.)
	EXISTING GAS CLEANOUT
	EXISTING GAS VENT

GENERAL NOTES

- WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITION OF THE IOWA STATEWIDE URBAN DESIGN AND SPECIFICATIONS, THE PROJECT MANUAL, AND THE APPROVED QUALITY CONTROL AND ASSURANCE (QC&A) PLAN. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS OR PLANS, THE CONTRACTOR MUST CONTACT THE ENGINEER BEFORE PROCEEDING.
- THE CONTRACTOR IS RESPONSIBLE FOR DAILY CLEANING OF THE WORK AREA. THE FINAL PAY APPLICATION SHALL NOT BE PROCESSED UNTIL THE CONTRACTOR HAS SATISFACTORILY REMOVED ALL RUBBISH, EXCESS MATERIAL, MUD AND DEBRIS, AND ALL PARTS OF THE WORK AREA HAVE BEEN LEFT IN A NEAT AND PRESENTABLE MANNER.
- UTILITIES ARE SHOWN AS A CONVENIENCE FOR THE CONTRACTOR. THE LOCATIONS OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED IN THESE PLANS. CONTRACTOR SHALL FIELD LOCATE ALL UNDERGROUND AND ABOVE GROUND UTILITIES INCLUDING NOTIFICATION OF IOWA ONE CALL (1-800-292-8989), COORDINATE EXISTING UTILITIES INCLUDING EXISTING LEACHATE DRAIN LINE, AND EXISTING UNDERDRAIN LINES WITH OWNER PRIOR TO CONSTRUCTION. CONTRACTOR SHALL PROTECT ALL MONITORING WELLS.
- THE CONTRACTOR SHALL BE CHARGED FOR REPLACING CONSTRUCTION STAKES AND LOT PINS WHICH ARE DESTROYED BY THEIR OPERATIONS.
- OWNER HAS A SWPPP FOR THIS SITE. CONTRACTOR TO COMPLY WITH OWNER SWPPP, OWNER STORMWATER PERMIT, AND THE CONSTRUCTION DOCUMENTS. EROSION AND SEDIMENT CONTROL MEASURES, IF INSTALLED, SHALL BE MAINTAINED CONTINUOUSLY, REPAIRED WHEN AND AS NECESSARY AND SHALL BE INSPECTED WITHIN 24 HOURS OF EACH RAINFALL EVENT. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEED AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF VEGETATION.
- ALL MATERIALS USED FOR FILL OR BACK-FILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS OR ANY OTHER NON-COMPACTABLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
- MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACK-FILL AROUND DRAINAGE STRUCTURES OR IN UTILITY TRENCHES OR ANY OTHER DEPRESSION REQUIRING FILL OR BACK-FILL SHALL BE COMPACTED AS OUTLINED IN THE QC&A PLAN.
- ALL EXCAVATIONS, INCLUDING TRENCHES, SHALL BE KEPT DRY TO PROTECT THEIR INTEGRITY. TEMPORARY PUMPING OF LEACHATE AND UNDERDRAIN AREAS MAY BE NECESSARY BY CONTRACTOR DURING CONSTRUCTION.
- TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER. FAILURE TO WORK WITH QA/QC CONSULTANT TO CONDUCT DENSITY TESTING IN ACCORDANCE WITH THE QC&A PLAN AND CONTRACT DOCUMENTS AND THE SUBMISSION TEST RESULTS SHALL BE CAUSE FOR NONACCEPTANCE OF THE FACILITY.
- SUBGRADE SHALL BE COMPETENT AND STRUCTURAL FILL SHALL BE IN ACCORDANCE WITH PROJECT DOCUMENTS.
- PLACE BACKFILL IN HORIZONTAL LAYERS, IN ACCORDANCE WITH PROJECT SPECIFIC GEOTECHNICAL RECOMMENDATIONS. BACKFILL SHALL BE CONTINUOUSLY LEVEL AND MANIPULATED DURING THE PLACING AND COMPACTING OF EACH LAYER. COMPACT EACH LAYER AS SPECIFIED BEFORE PLACING THE NEXT LAYER.
- ALL FILL MATERIAL MUST BE APPROVED BY THE QCA CONSULTANT OR ENGINEER.
- EXCAVATED MATERIALS FROM THE PROJECT CONSTRUCTION AREAS MAY BE USED AS FILL MATERIAL AS DIRECTED BY THE QCA CONSULTANT OR ENGINEER.
- THE FINAL SURFACE OF EXCAVATED AREAS AND AREAS DESIGNATED TO RECEIVE FILL SHALL BE PREPARED AND ACCEPTED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS. THE FINAL SURFACE SHALL ALSO BE FREE OF LOOSE MATERIAL, CLODS, AND ANY OTHER DEBRIS INCLUDING GRADE STAKES AND HUBS.
- NATURAL SUBGRADE SOILS OR COMPACTED FILL SOFTENED BY FROST, FLOODING, WEATHER, OR ANY OTHER NATURAL OR MAN-MADE EVENTS SHALL BE REMOVED AND REPLACED OR RECOMPACTED IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED HEREIN.
- FILL SHALL NOT BE PLACED ON SNOW, ICE, OR FROZEN GROUND SURFACES.
- EXCAVATION AND BACKFILL GRADES SHALL CONFORM TO THE LINES, GRADES, SECTIONS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS. GRADING TOLERANCES ARE OUTLINED IN THE QC&A PLAN AND SPECIFICATIONS.
- BACKFILLING OF TRENCHES SHALL CONFORM TO METHODS OUTLINED IN THE SPECIFICATIONS.
- ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- THE HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 IOWA STATE PLANE COORDINATE SYSTEM (IOWA SOUTH ZONE). VERTICAL CONTROL IS REFERENCED TO NAVD88.
- TOPOGRAPHY BY KLINGER DATED OCTOBER 2023.
- ACTIVITY MAY HAVE OCCURRED WITHIN THE PROJECT AREA SINCE THE DATE OF THE TOPOGRAPHY. CONTRACTOR SHALL VERIFY THE CONDITIONS CONDITIONS AFFECTING THIS PROJECT PRIOR TO BIDDING.
- CONTRACTOR IS RESPONSIBLE FOR ALL CONDITIONS OF THE STORM WATER PERMIT (OWNER PROVIDED) ACTIVITIES INSIDE THE PROJECT AREA. ALL TEMPORARY AND PERMANENT STORM WATER FEATURES SHOWN OR PART OF THIS PROJECT MUST COMPLY WITH THE PERMIT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION SITE SECURITY DURING THE WORK .
- CONTRACTOR SHALL PROTECT PAVING AND RESTORE ANY PAVING DAMAGED BY CONSTRUCTION.
- CONTRACTOR SHALL FOLLOW ACTIVE LANDFILL TRAFFIC PATTERNS AND NOT INTERRUPT LANDFILL ACTIVITIES. COORDINATE WITH OWNER FOR ANY CLOSURES. COORDINATION WITH OWNER SHALL OCCUR WITHIN 24 HOURS, OR 1 BUSINESS DAYS PRIOR TO NECESSARY CLOSURES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING AND REPAIRING ANY DAMAGE, RUTTING, AND/OR DETERIORATION TO EXISTING ROADWAYS.

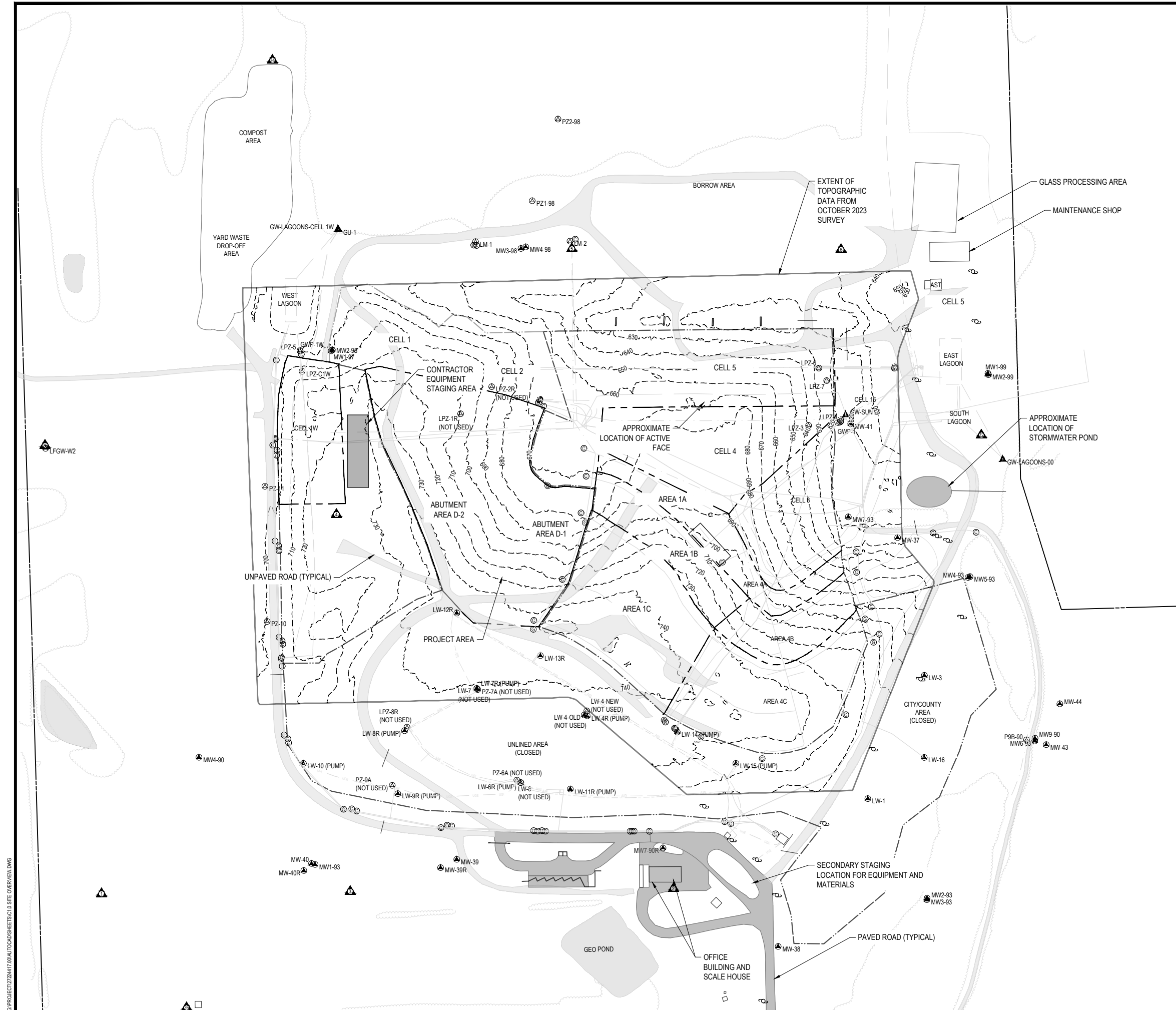
SURVEY CONTROL POINTS

POINT NUMBER	NORTHING	EASTING	ELEVATION
CP22	318114.59	2278965.89	631.26
CP24	319284.82	2276752.71	689.99
CP25	318082.65	2276042.77	695.53
CP26	316326.99	2276484.66	699.40

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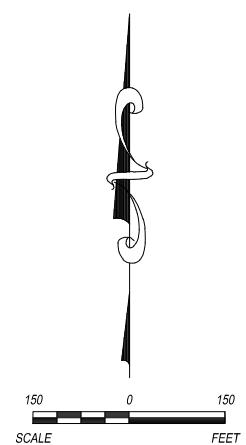
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- NOTES:
1. SITE FEATURES INCLUDING MONITORING WELLS, CELL BOUNDARIES, UTILITIES, ETC. ARE BASED ON DRAWINGS PROVIDED BY EVORA CONSULTING.
 2. CONTRACTOR TO COMMUNICATE AND COORDINATE WITH THE LANDFILL OPERATIONS STAFF FOR MATERIAL AND EQUIPMENT STAGING LOCATIONS.
 3. IF THE CONTRACTOR NEEDS TO USE THE CLOSED, UNLINED AREAS FOR STAGING DURING CONSTRUCTION ANY DAMAGED AREAS MUST BE RESTORED TO ORIGINAL CONDITIONS AFTER USE.
 4. EXISTING TOPOGRAPHY FROM HISTORICAL SURVEYS PROVIDED BY KLINGER DATED OCTOBER 2023. LIMITS OF THE TOPOGRAPHIC SURVEY DATA FROM OCTOBER 2023 ARE SHOWN WITH THE CONTOURS ON THIS PAGE.



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	SCALE BY:		EWW	MBS	CHK BY:				
					CLC				
CLIENT						SHEET TITLE	REV.	DATE	CK BY
DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION 1818 WEST BURLINGTON AVENUE BURLINGTON, IA 52601									
PROJECT TITLE						EXISTING CONDITIONS			
CELL D1-D2 CONSTRUCTION									

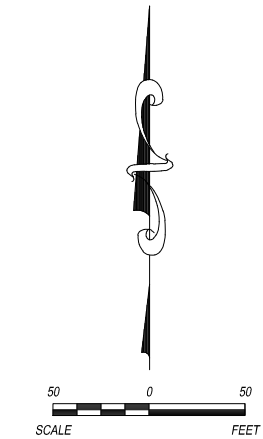
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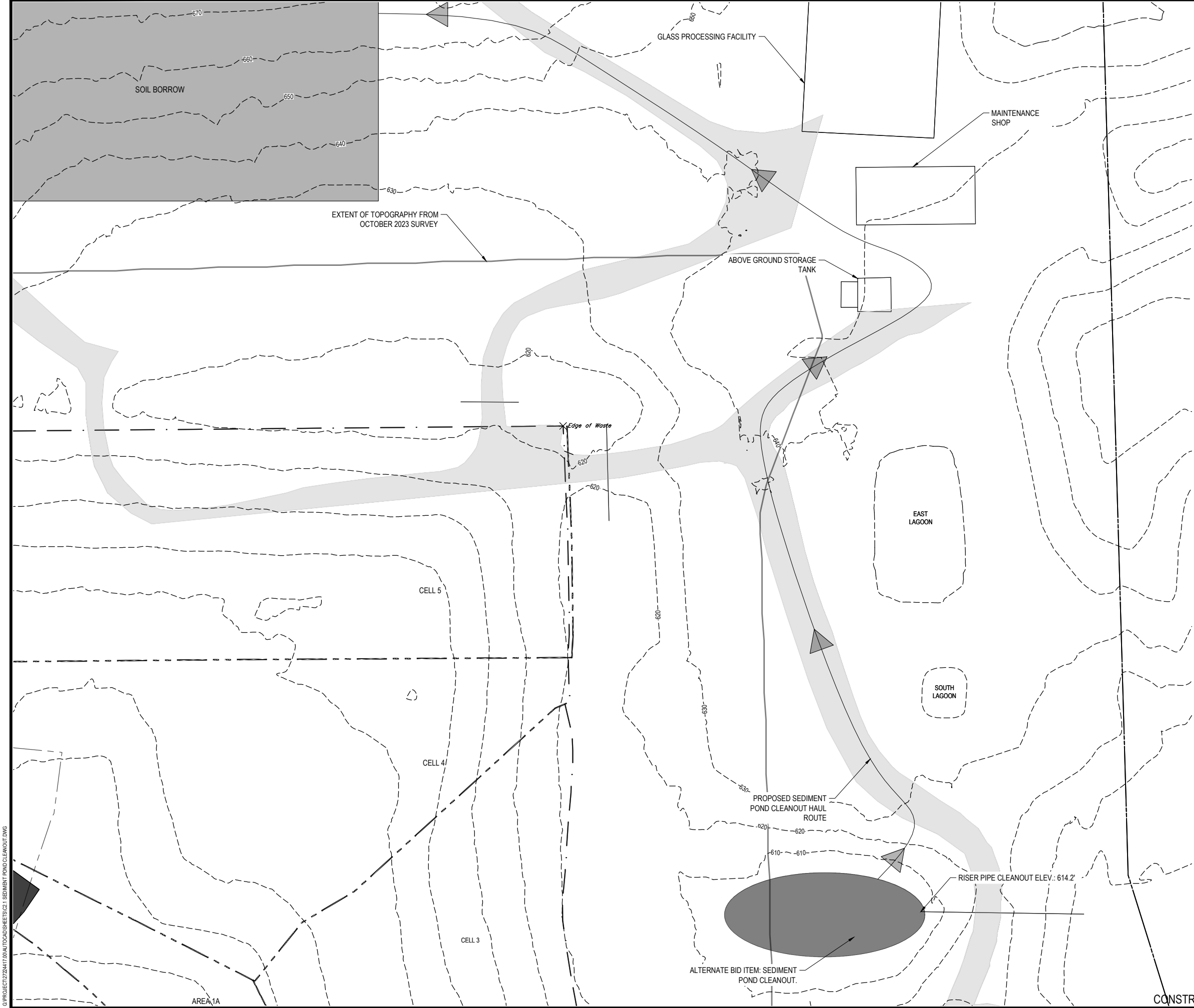
- NOTES:
1. CONTRACTOR TO PROTECT THE CONSTRUCTION AREA DURING THE ENTIRETY OF THE PROJECT.
 2. CONTRACTOR TO DELIVER EXCAVATED WASTE MATERIAL TO THE ACTIVE FACE AFTER COORDINATION WITH THE OWNER.
 3. FINAL CONDITIONS SHOULD PROHIBIT STORMWATER RUNOFF GENERATED ON THE WEST AND NORTH SIDES OF CELLS D1 & D2 FROM ENTERING THE CELL FOOTPRINT.
 4. FACILITY OPERATIONS ARE RECONSTRUCTING HAULROADS ALONG THE WEST BOUNDARY OF CELL D2.
 5. GRADES SHOWN ON THIS PAGE REPRESENT EXISTING CONDITIONS AS OF OCTOBER 2023.



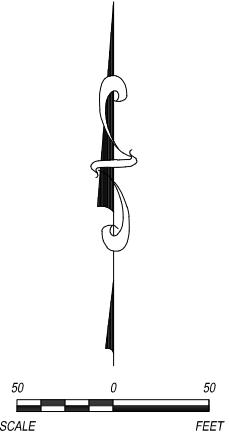
CONSTRUCTION DOCUMENTATION DRAWING

CLIENT		SHEET TITLE		REV.		DATE		CK BY	
DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION		SITE PREPARATION & DEMOLITION		△		-		-	
1818 WEST BURLINGTON AVENUE BURLINGTON, IA 52601		CELL D1-D2 CONSTRUCTION		△		-		-	
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PH. (515) 631-6160		CADD FILE: C2.0 SITE PREPARATION & DEMOLITION.DWG		DATE: 3/6/25		DRAWING NO. C2.0		DATE: 3/6/25	
DWN BY: EWW		CKD BY: MBS		PRG. MGR: CLC					

C:\PROJECTS\2224\17\DWG\1702\03\SCS\1 SEDIMENT POND CLEANOUT.DWG



- NOTES:
1. CONTRACTOR TO PROVIDE ALTERNATE BID ITEM OF SEDIMENT REMOVAL FROM THE SEDIMENTATION POND.
 2. CONTRACTOR TO STOCKPILE EXCAVATED SOILS (APPROX. 4,000 CY) IN THE BORROW AREA OR ELSEWHERE ON SITE AS DIRECTED BY THE OWNER.
 3. TOPOGRAPHIC DATA SHOWN ON THIS SHEET REPRESENTS A COMPILATION OF TWO SURVEYS DATED OCTOBER 2022 AND OCTOBER 2023. CONTOURS ARE SHOWN FOR CONVENIENCE TO THE CONTRACTOR. MEASUREMENT AND PAYMENT FOR THIS ALTERNATE BIDE ITEM IS DETAILED WITHIN THE CONTRACT DOCUMENTS.
 4. CONTRACTOR SHALL FIELD VERIFY THE EXISTING PIPE LOCATIONS AND ELEVATIONS PRIOR TO COMMENCING CONSTRUCTION AND EXCAVATION.
 5. GRADE TO DRAIN TO THE LOWEST PERFORATIONS OF THE RISER PIPE OUTLET.
 6. HAUL ROUTE TO THE BORROW AREA SHALL BE CONFIRMED WITH THE OWNER PRIOR TO STARTING EXCAVATION

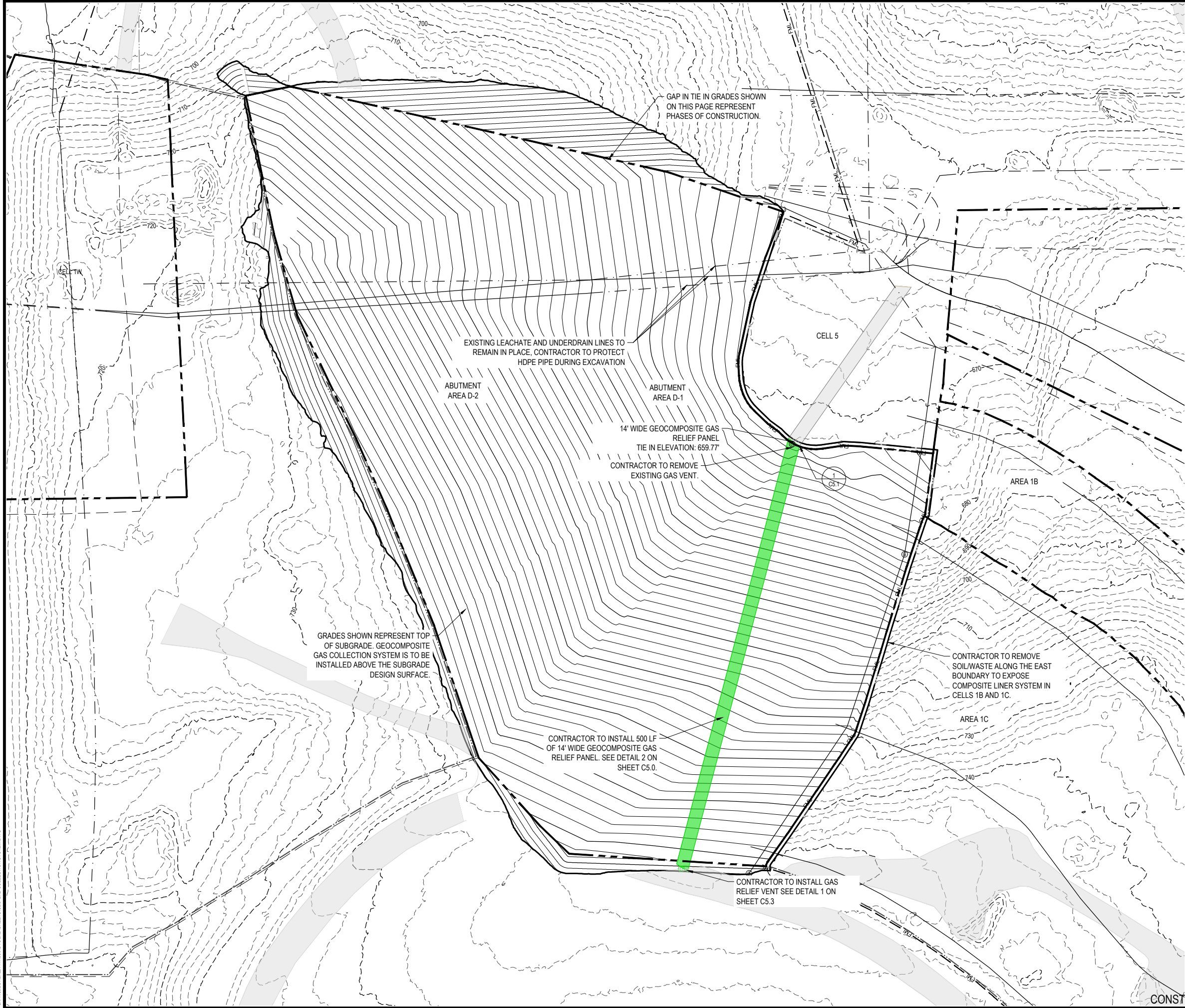


Construction Documentation
Drawings were prepared by SCS
Engineers from record information
contained in Addenda, Change
Orders, Drawings, Surveys, electronic
and paper copies of documents, and
other information received from the
Construction Contractor.

Modifications made in red text were
prepared by SCS Engineers on
September 29, 2025

CLIENT		SHEET TITLE		PROJECT TITLE	
SCS ENGINEERS 1690 ALL STATE COURT, SUITE 100 WEST DES MOINES, IA 50365 PH. (515) 631-6160		SEDIMENT POND CLEANOUT		CELL D1-D2 CONSTRUCTION	
DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION 1818 WEST BURLINGTON AVENUE BURLINGTON, IA 52601		REV.		DATE	
CADD FILE: C2.1 SEDIMENT POND CLEANOUT.DWG		CHK BY		BY	
DATE: 3/6/25		REV.		DATE	
DRAWING NO. C2.1		REV.		DATE	
DWN BY: EWW		CHK BY: MBS		PRG. MGR: CLC	

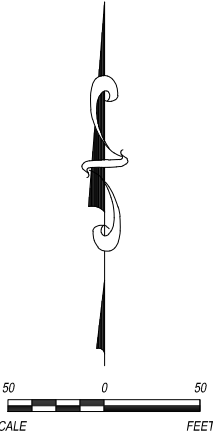
©PROJECT 27224417.DWG\1700\1700\30 SHEETS\C3.0 GAS COLLECTION SYSTEM.DWG



Construction Documentation
Drawings were prepared by SCS
Engineers from record information
contained in Addenda, Change
Orders, Drawings, Surveys, electronic
and paper copies of documents, and
other information received from the
Construction Contractor.

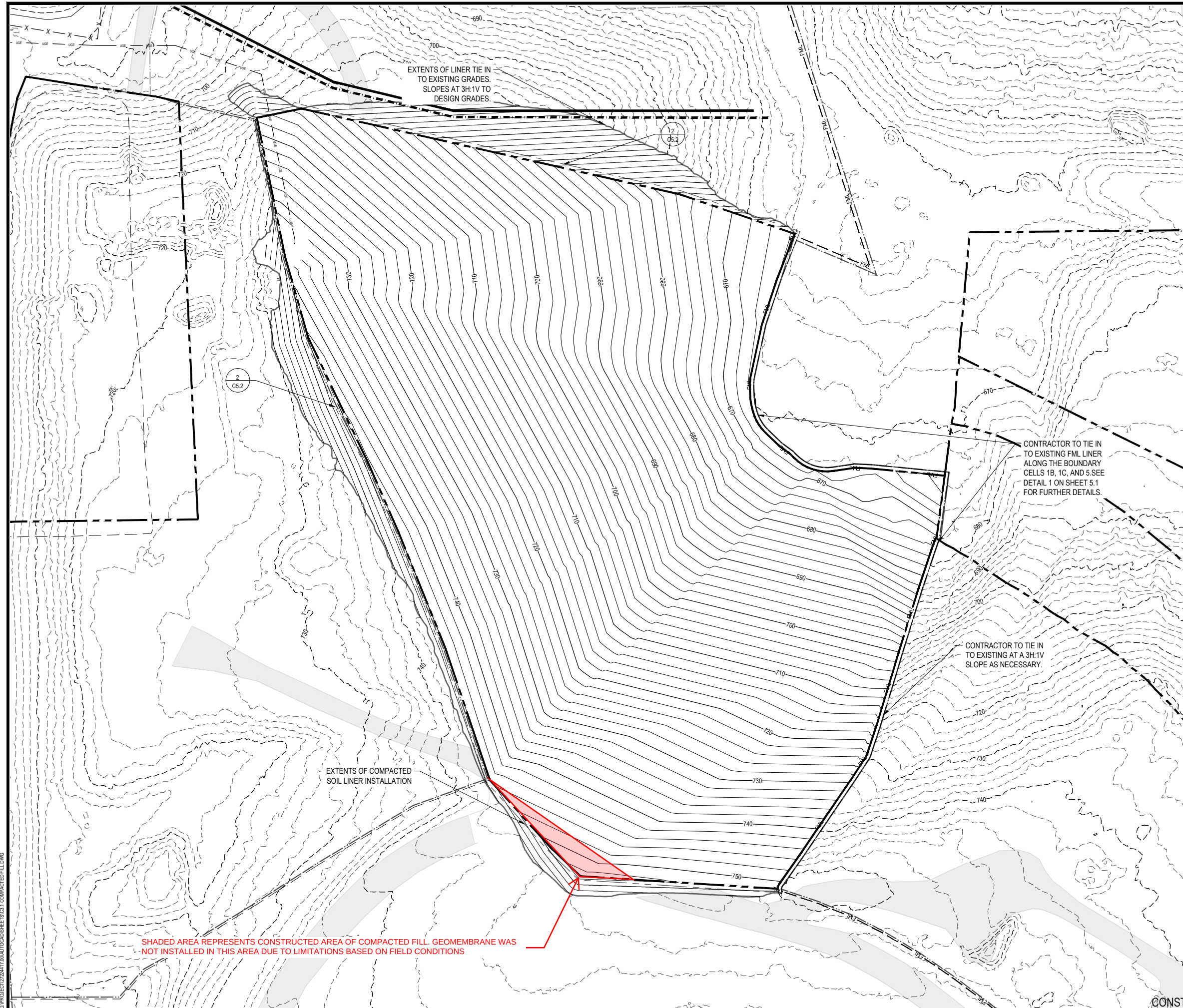
Modifications made in red text were
prepared by SCS Engineers on
September 29, 2025

- NOTES:
- 200-MIL GEOCOMPOSITE GAS RELIEF PANEL SHALL BE TIED IN TO THE EXISTING CELL 5 GEOCOMPOSITE GAS PANEL.
 - THE GAS RELIEF SYSTEM SHALL BE CONNECTED TO THE GAS RELIEF VENT TO REDUCE GAS PRESSURE BUILDUP UNDER THE CELL D1 AND D2 GEOMEMBRANE SYSTEM. SEE DETAIL 1 ON SHEET C5.3 FOR ADDITIONAL DETAILS.



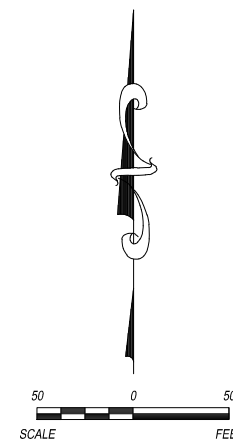
CONSTRUCTION DOCUMENTATION DRAWING

CLIENT		SHEET TITLE		REV.		DATE		CK		BY	
DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION		SUBGRADE & GAS COLLECTION SYSTEM		Δ		2/17/25		MBS		CORRECTED DETAIL REFERENCE	
1818 WEST BURLINGTON AVENUE BURLINGTON, IA 52601		CELL D1-D2 CONSTRUCTION		Δ		-		-		-	
SCS ENGINEERS		1690 ALL STATE COURT, SUITE 100 WEST DES MOINES, IA 50365 PH. (515) 631-6160		EWW		EWW		MBS		CLC	
CADD FILE: C3.0 GAS COLLECTION SYSTEM.DWG		DATE: 3/6/25		DRAWING NO. C3.0		PROJECT NO. 27224417.00		CON BY: EWW		PROJ. MGR. MBS	



Construction Documentation
Drawings were prepared by SCS
Engineers from record information
contained in Addenda, Change
Orders, Drawings, Surveys, electronic
and paper copies of documents, and
other information received from the
Construction Contractor.

NOTES:



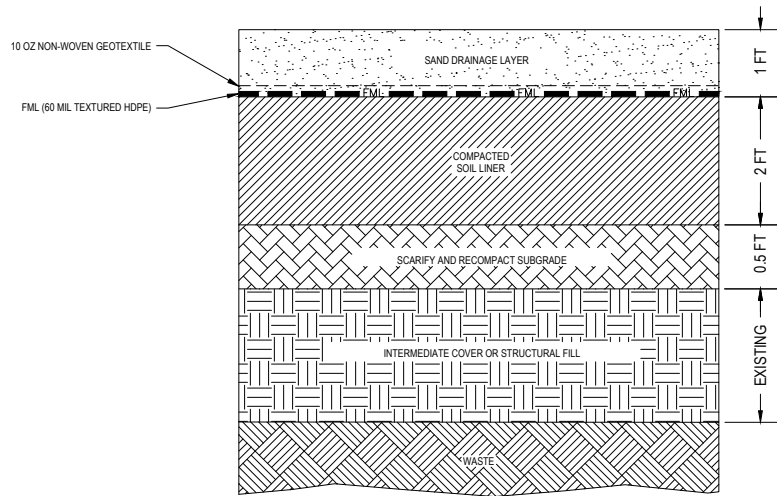
CONSTRUCTION DOCUMENTATION DRAWING

[illegible]

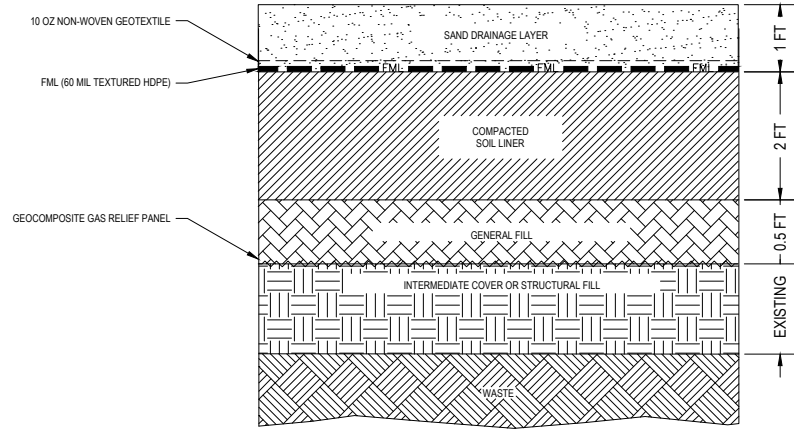


Construction Documentation Drawings were prepared by SCS Engineers from record information contained in Addenda, Change Orders, Drawings, Surveys, electronic and paper copies of documents, and other information received from the Construction Contractor.

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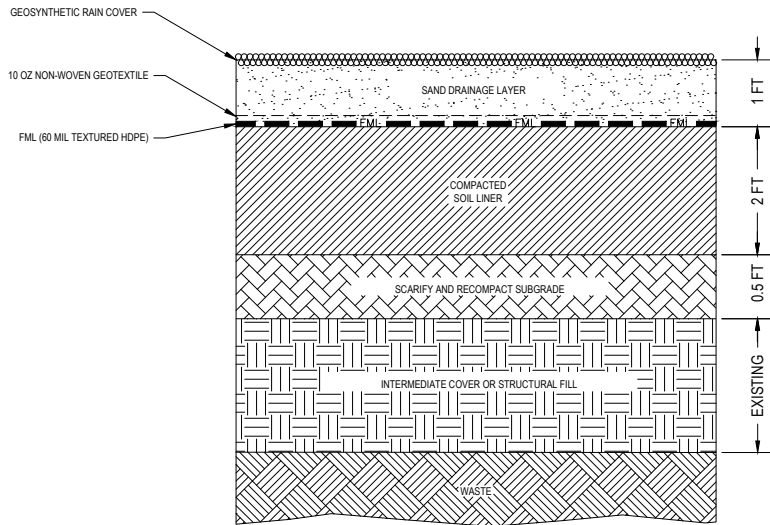


1 ABUTMENT LINER SEQUENCE
NOT TO SCALE



NOTE:
1. GEOCOMPOSITE WILL ONLY BE PRESENT ALONG THE GAS RELIEF PANEL

2 ABUTMENT LINER SEQUENCE WITH GEOCOMPOSITE GAS RELIEF PANEL
NOT TO SCALE



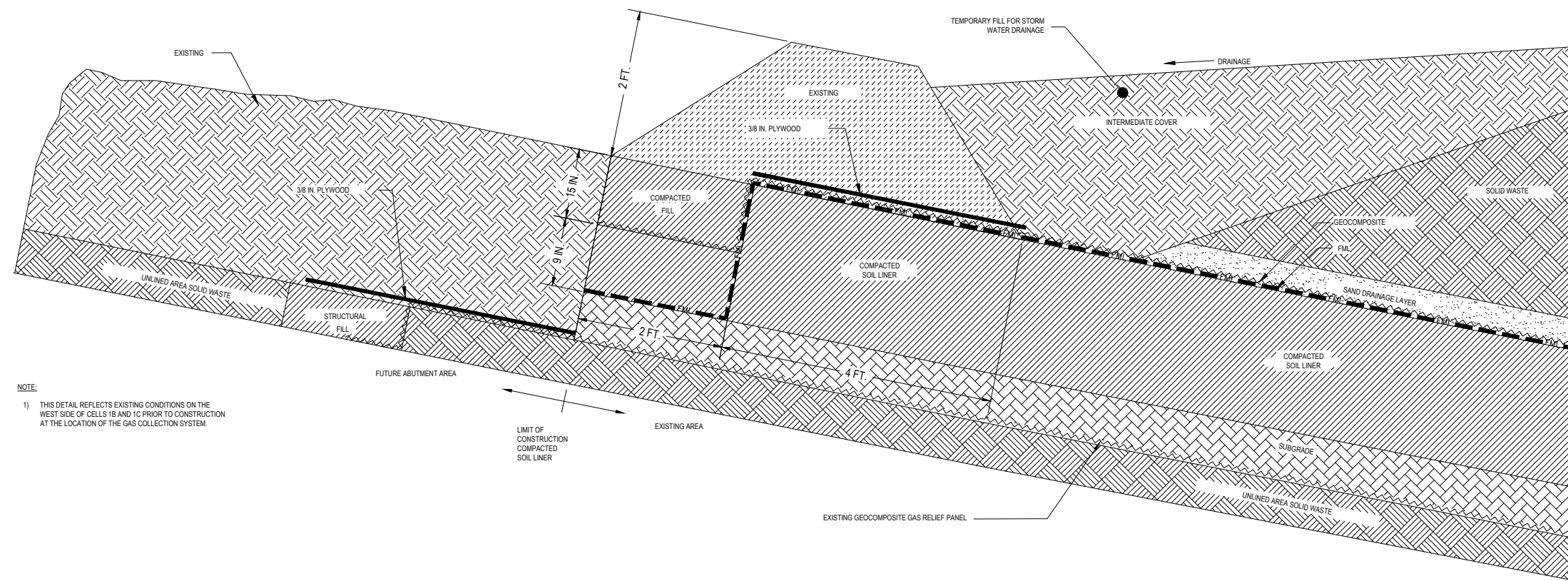
NOTE:
1. GEOCOMPOSITE WILL ONLY BE PRESENT ALONG THE GAS RELIEF PANEL
2. GEOSYNTHETIC RAIN COVER WILL ONLY BE PRESENT IN ABUTMENT D2

3A ABUTMENT LINER SEQUENCE GEOSYNTHETIC RAIN COVER ALTERNATE
NOT TO SCALE

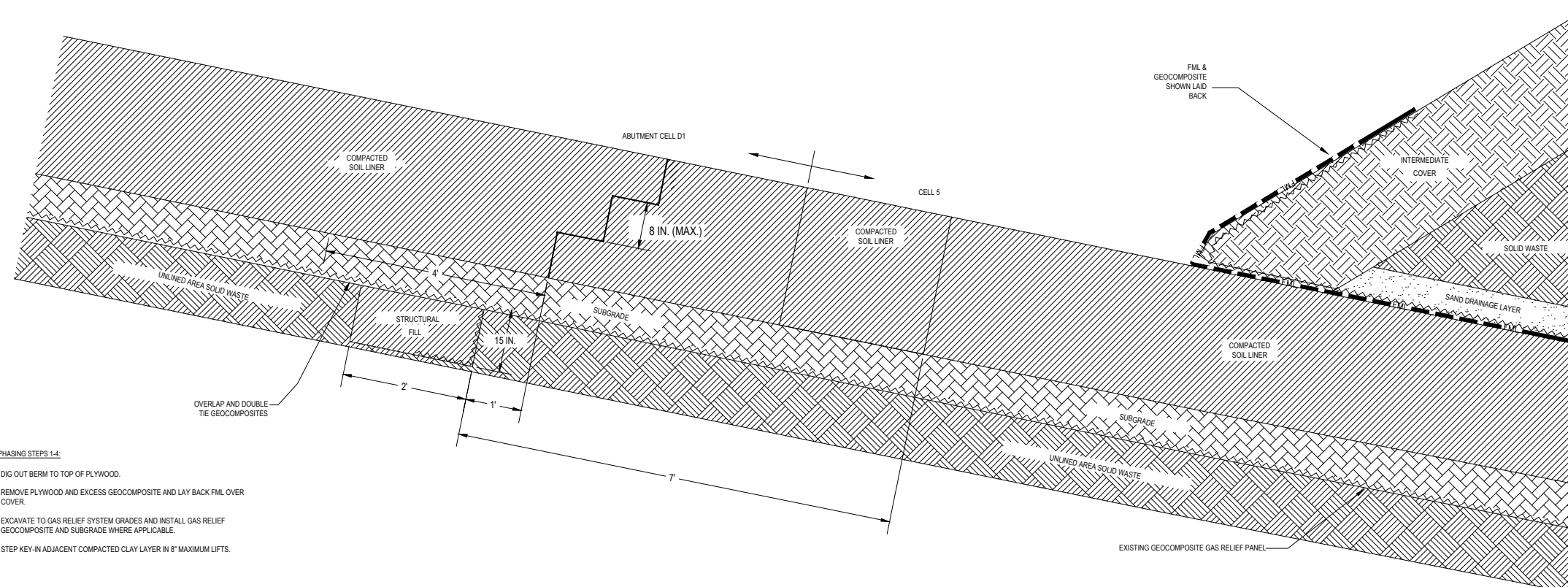
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Modifications made in red text were prepared by SCS Engineers on September 29, 2025

CK BY	DATE	REV.	SHEET TITLE		CLIENT	SCS ENGINEERS 1690 ALL STATE COURT, SUITE 100 WEST DES MOINES, IA 50365 PH. (515) 631-6160	CADD FILE:				DATE: 8/18/25	DRAWING NO. C5.0
			LINER SEQUENCE DETAILS				C5.0 LINER AND LEACHATE DETAIL.DWG					
			PROJECT TITLE									
			CELL D1-D2 CONSTRUCTION									



1 ABUTMENT SYSTEM CONSTRUCTION DETAIL
NOT TO SCALE



2 ABUTMENT SYSTEM CONSTRUCTION DETAIL (CONT.)
NOT TO SCALE

Construction Documentation Drawings were prepared by SCS Engineers from record information contained in Addenda, Change Orders, Drawings, Surveys, electronic and paper copies of documents, and other information received from the Construction Contractor.

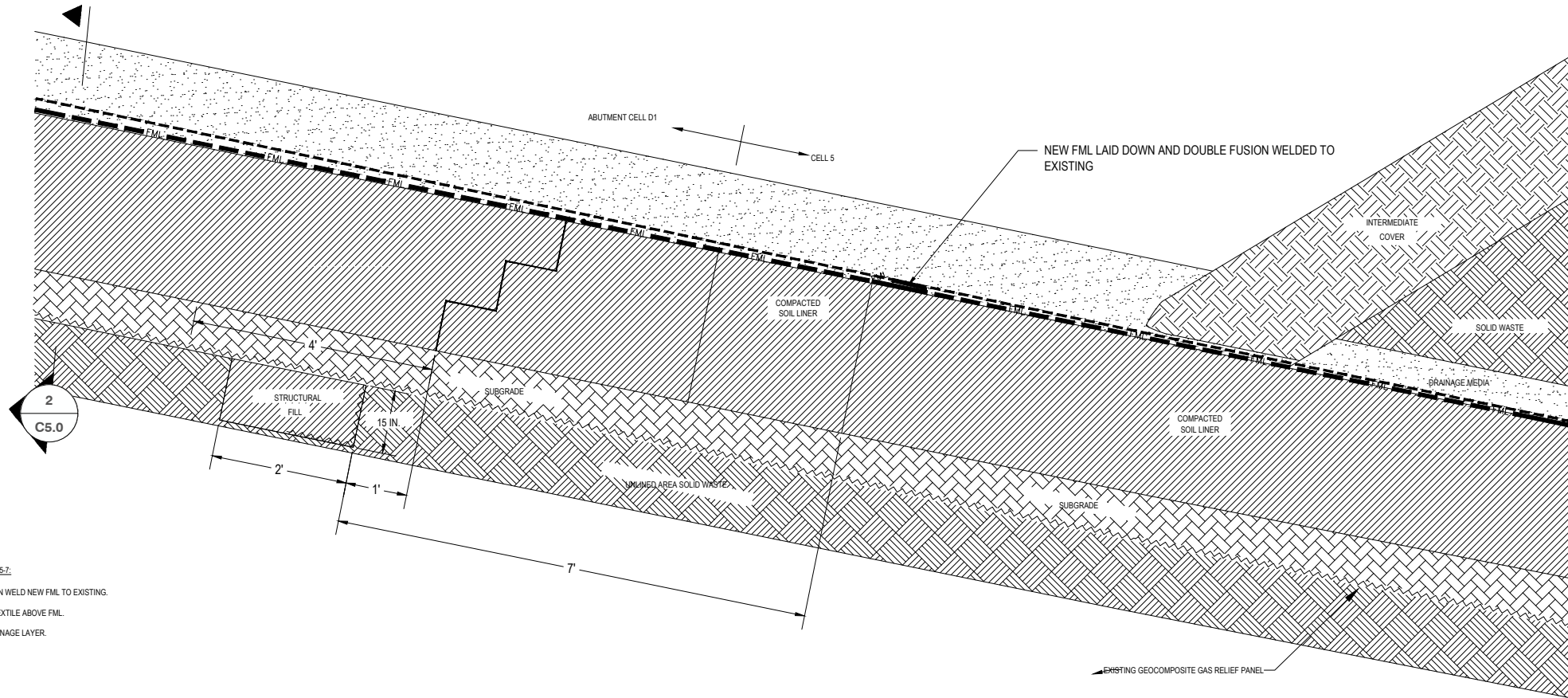
Modifications made in red text were prepared by SCS Engineers on September 29, 2025

SCS ENGINEERS 1680 ALL STATE COURT, SUITE 100 WEST DES MOINES, IA 50285 PH. (515) 631-6160				CLIENT DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION 1818 WEST BURLINGTON AVENUE BURLINGTON, IA 52601				SHEET TITLE TIE-IN DETAILS		REV.	DATE	CK BY
DESIGN NO. 27224417.00 DESIGN BY: EWW DRAWN BY: EWW CHECK BY: MBS PROJECT MGR CLC								PROJECT TITLE CELL D1-D2 CONSTRUCTION		△	△	△
CADD FILE: C5.1 TIE-IN DETAILING.DWG				DATE: 3/6/25				DRAWING NO. C5.1		△	△	△

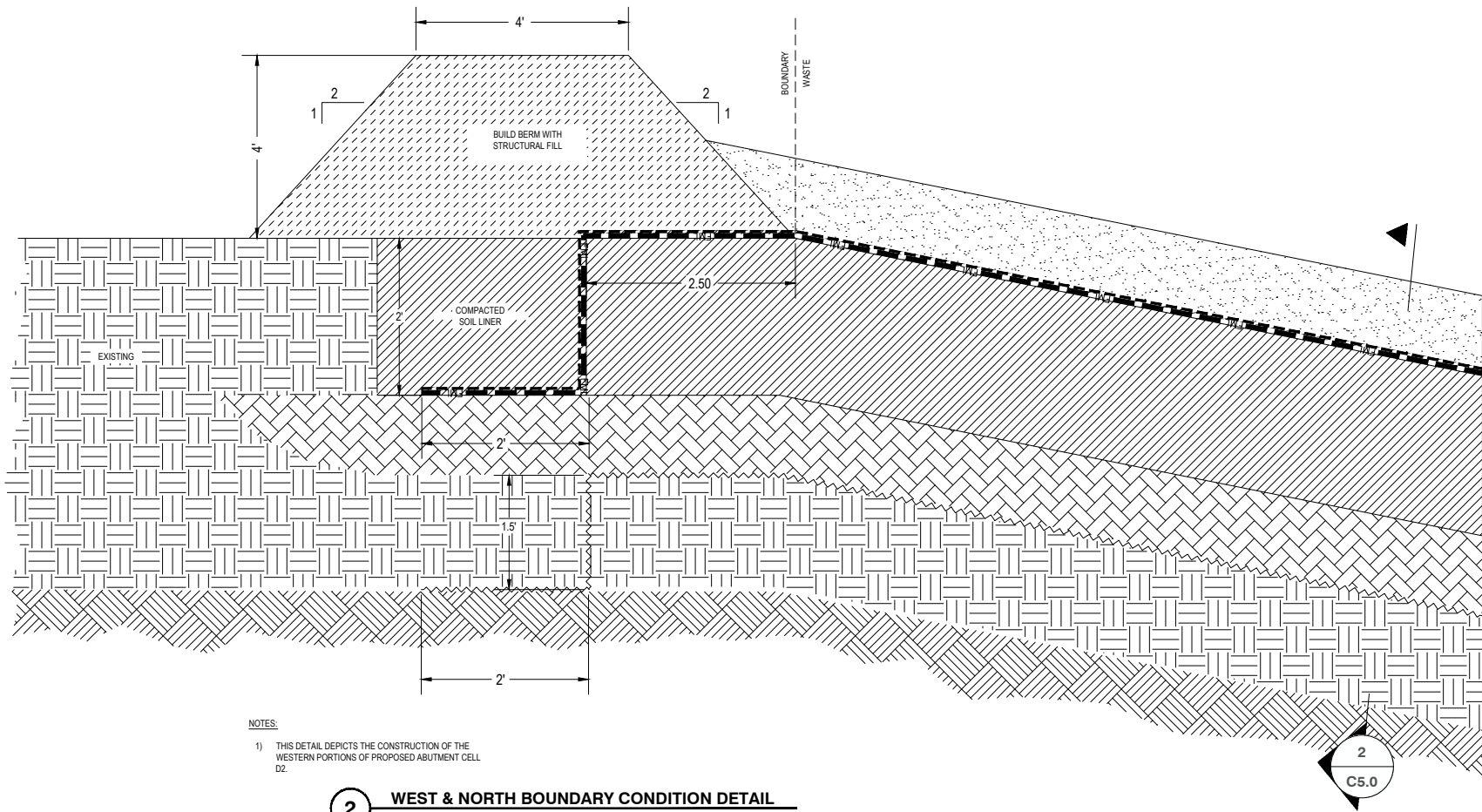
G:\PROJECT\2724417\00\AUTOCAD\SHEETS\CS2 TIE-IN DETAILS (CONT).DWG

LINER PHASING STEPS 5-7:

- DOUBLE FUSION WELD NEW FML TO EXISTING.
- INSTALL GEOTEXTILE ABOVE FML.
- PLACE 12" DRAINAGE LAYER.



1 ABUTMENT SYSTEM CONSTRUCTION DETAIL (CONT.)
NOT TO SCALE



NOTES:

- THIS DETAIL DEPICTS THE CONSTRUCTION OF THE WESTERN PORTIONS OF PROPOSED ABUTMENT CELL D2.

2 WEST & NORTH BOUNDARY CONDITION DETAIL
NOT TO SCALE

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Modifications made in red text were prepared by SCS Engineers on September 29, 2025

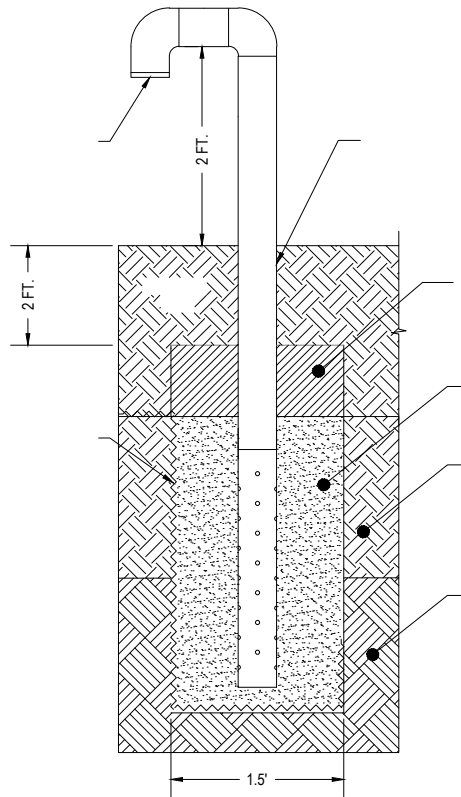
CK	BY	DATE	REV	DATE	REV
-	-	-	Δ	-	Δ
-	-	-	Δ	-	Δ
-	-	-	Δ	-	Δ
-	-	-	Δ	-	Δ
-	-	-	Δ	-	Δ

SHEET TITLE	PROJECT TITLE
TIE-IN DETAILS (CONT.)	CELL D1-D2 CONSTRUCTION

CLIENT	PROJECT NO.	DATE	DATE	DATE	DATE
DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION 1818 WEST BURLINGTON AVENUE BURLINGTON, IA 52601	1690 ALL STATE COURT, SUITE 100 WEST DES MOINES, IA 50385 PH. (515) 831-6160	2724417.00	3/6/25	3/6/25	3/6/25

SCS ENGINEERS	DESIGNER	CHECKER	APPROVER	CLIENT
1690 ALL STATE COURT, SUITE 100 WEST DES MOINES, IA 50385 PH. (515) 831-6160	EWV	MBS	CLC	CLC

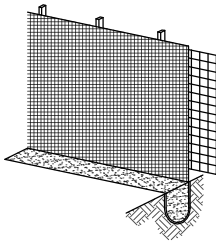
CADD FILE:	DATE:	DRAWING NO.
CS2 TIE-IN DETAILS (CONT).DWG	3/6/25	C5.2



NOTES:

- 1) BENTONITE SEAL LENGTH AND WIDTH IS EQUAL TO "D" (PIPE TRENCH WIDTH).
- 2) AGGREGATE SHALL BE SIZED WITH PERFORATIONS (<5% PASSING PERFORATION DIAMETER).
- 3) EXTEND VENT TRENCH 1' MIN. INTO WASTE.

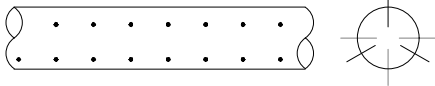
1 PASSIVE GAS VENT DETAIL
NOT TO SCALE



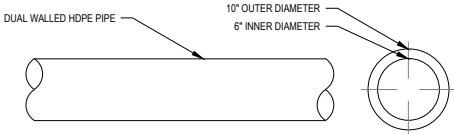
NOTES:

1. ACCEPTABLE SILT FENCE SPECIFICATIONS - AOS (#20 - 50 SIEVE), WATER FLOW RATE (70 GPM/ SQ. FT. OR GREATER), TENSILE STRENGTH (GRAB) - (MIN. 120 WARP OR GREATER) AND ELONGATION (5-25%).
2. ON EACH NEW RUN OF SILT FENCE SPRAY PAINT THE BEGINNING OF THE RUN WITH 0+00 AND SPRAY PAINT THE END WITH THE DATE OF INSTALLATION AND LF OF THE RUN.
3. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POSTS. A MINIMUM OF 3 TIES ARE REQUIRED FOR EACH POST. TO BE LOCATED IN THE TOP 12" OF THE SILT FENCE.
4. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. (INCLINE ALL POSTS 20° MAX. FROM VERTICAL, TOWARD FLOW)
5. SILT FENCE SHALL BE TRENCHED IN WITH A MECHANICAL TRENCHER OR SILT FENCE PLOW SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
6. THE TRENCH SHOULD BE A MINIMUM OF 6" DEEP AND 3-4" WIDE TO ALLOW FOR THE SILT FENCE TO BE LAID IN THE GROUND AND COMPACTED BACKFILLED CAN BE PLACED.
7. SILT FENCE INSTALLED WITH A MECHANICAL TRENCHER SHALL HAVE METAL PINS WITH 6" LEG X 1" THROATS PLACED AT 1'-0" CENTERS IN TRENCH BEFORE IT IS BACKFILLED AND COMPACTED.
8. SILT FENCE THAT IS TRENCHED IN SHALL BE A MINIMUM OF 9" DEEP; TRENCH SHALL BE BACKFILLED AND COMPACTED. COMPACTION CAN BE TESTED AT ENGINEERS/INSPECTORS DISCRETION; AND SHALL MEET A 85% STANDARD AND MOISTURE REQUIREMENTS AS NEEDED FOR COMPACTION. CONTRACTOR IS REQUIRED TO PAY FOR FAILING TEST AND RECOMPACTION TRENCH.
9. SILT FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
10. SEDIMENT TRAPPED BY THIS PRACTICE SHALL BE UNIFORMLY DISTRIBUTED ON THE SOURCE AREA PRIOR TO TOPSOILING.

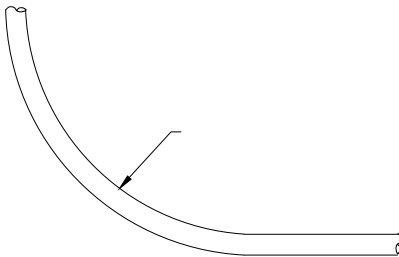
2 TEMPORARY SILT FENCE
NOT TO SCALE



3 PERFORATED PIPE DETAIL
NOT TO SCALE



4 DUAL WALLED SOLID PIPE DETAIL
NOT TO SCALE



NOTES:

- 1) CLEANOUTS SHALL EXTEND 3 FEET ABOVE GRADE AND CAPPED WITH VENTED CAPS (NON-PRESSURIZED LINES) OR THREADED/FLANGED & BOLTED (PRESSURIZED LINES).
- 2) CLEANOUTS SHALL INCLUDE A 30° TO 45° WYE AND SWEEP USING 22.5° OR LESS SEGMENTS.
- 3) ALL CLEANOUTS SHALL BE LABELED WITH WEATHER RESISTANT MARKINGS

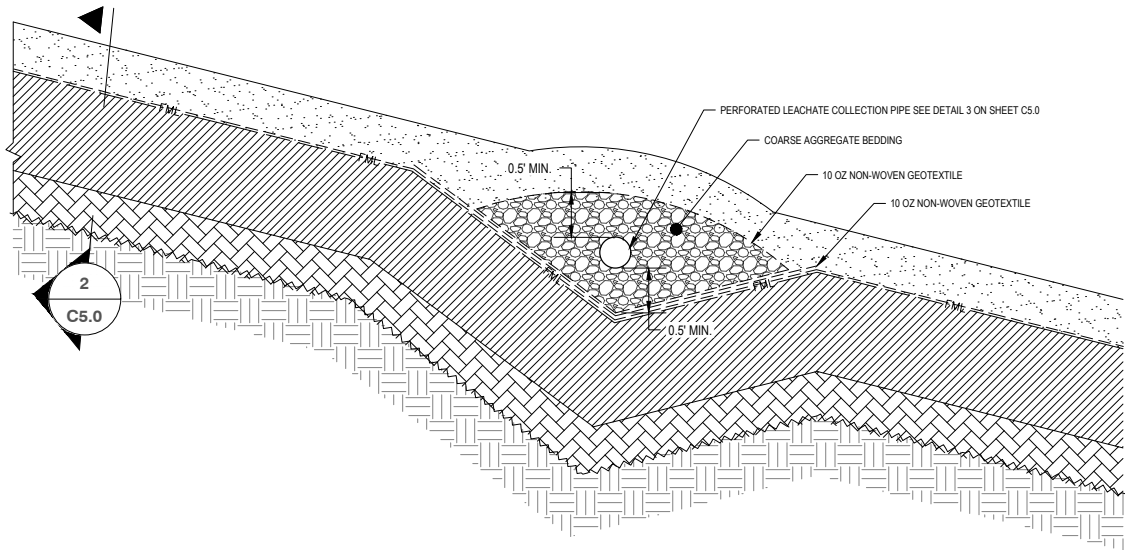
5 TYPICAL CLEANOUT DETAIL
NOT TO SCALE

Construction Documentation Drawings were prepared by SCS Engineers from record information contained in Addenda, Change Orders, Drawings, Surveys, electronic and paper copies of documents, and other information received from the Construction Contractor.

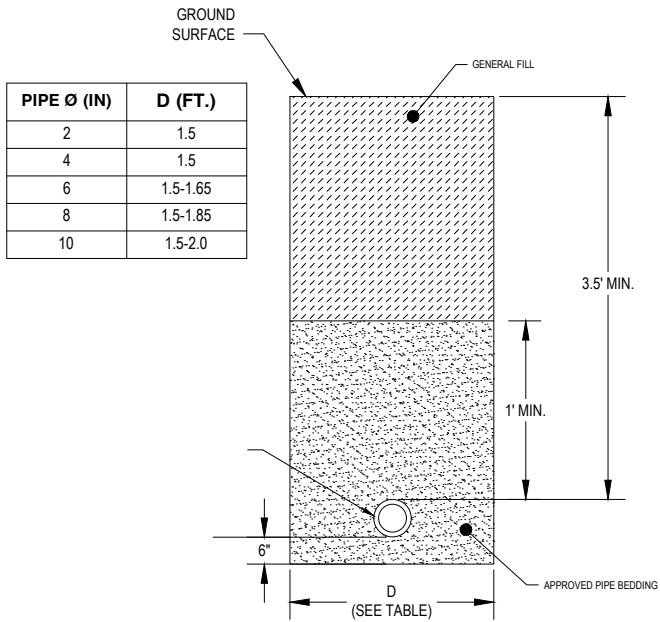
Modifications made in red text were prepared by SCS Engineers on September 29, 2025

CK	BY	DATE	REV	SHEET TITLE	PROJECT TITLE	CLIENT	SCS ENGINEERS	PROJ. NO.	PROJ. MGR.	CLC
-	-	-	Δ	MISCELLANEOUS DETAILS	CELL D1-D2 CONSTRUCTION	DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION 1818 WEST BURLINGTON AVENUE BURLINGTON, IA 52601	1690 ALL STATE COURT, SUITE 100 WEST DES MOINES, IA 50265 PH. (515) 831-6160	27224417.00	ENW	CLC
-	-	-	Δ					ENW	MBS	
-	-	-	Δ					ENW		
-	-	-	Δ					ENW		
-	-	-	Δ					ENW		

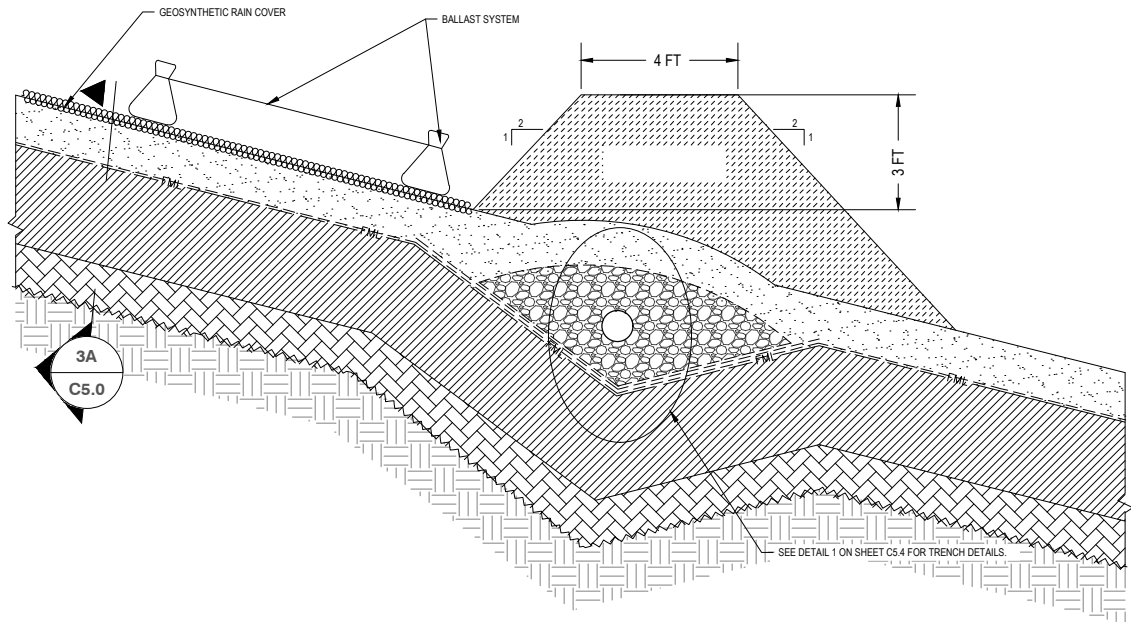
G:\PROJECT\27224\17\DWG\1703\SHETS\CS-4 ALTERNATIVE DETAILS.DWG



1 LEACHATE TRENCH DETAIL
NOT TO SCALE



2 FLEXIBLE OR SEMI-RIGID PIPE TRENCH DETAIL
NOT TO SCALE



3A GEOSYNTHETIC RAIN COVER ALTERNATE
NOT TO SCALE

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September 29, 2025

CLIENT	CK	BY	DATE	REV	DATE	REV	DATE	REV	DATE	REV
SHEET TITLE	LEACHATE AND RAIN COVER DETAILS					CELL D1-D2 CONSTRUCTION				
	PROJECT TITLE					PROJECT TITLE				
CLIENT	DES MOINES COUNTY REGIONAL SOLID WASTE COMMISSION 1818 WEST BURLINGTON AVENUE BURLINGTON, IA 52601									
SCS ENGINEERS	14755 GROVER STREET OMAHA, NE 68144 PH. (402) 984-6202 FAX. (913) 881-0012 AUTHORIZATION NUMBER: CA-0543									
	PROJ. NO. 27224-17.00 CON. BY: EWW CHK. BY: EWW DES. BY: EWW MBS PRG. MGR. CLC									
CADD FILE: CS-4 ALTERNATIVE DETAILS.DWG										
DATE: 3/6/25										
DRAWING NO. C5.4										



Appendix B

Layer Thickness Verification

Point ID	Northing	Easting	Surveyed Subgrade Elevation	Surveyed Top of Compacted Soil Liner Elevation	Compacted Soil Liner Layer Thickness	Surveyed Leachate Drainage Layer Elevation	Leachate Drainage Layer Thickness
1001	2277041.68	318319.87	715.41	717.46	2.05	718.49	1.03
1002	2277088.36	318329.30	710.96	713.08	2.11	714.12	1.05
1003	2277141.68	318317.21	705.87	707.98	2.11	709.02	1.038
1004	2277241.68	318294.53	696.36	698.47	2.11	699.54	1.072
1005	2277341.68	318271.86	686.73	688.88	2.15	689.90	1.026
1006	2277441.68	318249.18	677.22	679.35	2.13	680.40	1.057
1007	2277059.23	318233.39	728.14	730.23	2.10	731.24	1.011
1008	2277141.68	318233.39	718.65	720.73	2.08	721.78	1.042
1009	2277241.68	318233.39	705.68	707.71	2.04	708.77	1.06
1010	2277341.68	318233.39	692.65	694.73	2.08	695.78	1.05
1011	2277441.68	318233.39	679.64	681.78	2.14	682.80	1.019
1012	2277501.49	318233.39	671.46	673.57	2.11	674.64	1.069
1013	2277071.04	318175.15	736.63	738.80	2.17	739.84	1.037
1014	2277141.68	318178.28	726.70	728.76	2.06	729.79	1.026
1015	2277241.68	318182.70	712.54	714.56	2.02	715.58	1.023
1016	2277341.68	318187.13	698.34	700.43	2.09	701.47	1.046
1017	2277441.68	318191.56	684.14	686.25	2.12	687.29	1.039
1018	2277541.68	318195.99	669.90	672.09	2.18	673.15	1.06
1019	2277599.33	318198.22	658.71	660.75	2.04	661.75	1.001
1020	2277082.96	318133.39	738.44	740.54	2.11	741.60	1.064
1021	2277141.68	318133.39	728.05	730.19	2.14	731.22	1.03
1022	2277241.68	318133.39	711.09	713.14	2.05	714.19	1.056
1023	2277341.68	318133.39	696.52	698.68	2.15	699.71	1.031
1024	2277441.68	318133.39	682.22	684.33	2.11	685.35	1.019
1025	2277541.68	318133.39	667.82	669.97	2.15	671.02	1.046
1027	2277120.54	318033.39	741.66	743.78	2.12	744.82	1.042
1028	2277141.68	318033.39	738.50	740.56	2.06	741.62	1.063
1029	2277241.68	318033.39	720.10	722.24	2.14	723.27	1.027
1030	2277341.68	318033.39	701.77	703.82	2.04	704.90	1.084
1031	2277441.68	318033.39	683.38	685.52	2.14	686.57	1.055
1032	2277541.68	318033.39	666.09	668.19	2.10	669.21	1.02
1033	2277555.88	318033.39	663.84	665.98	2.14	667.06	1.08
1034	2277141.68	317990.93	742.53	744.62	2.09	745.67	1.048
1035	2277169.28	317933.39	743.42	745.52	2.10	746.56	1.043
1036	2277241.68	317933.39	730.06	732.15	2.09	733.21	1.066
1037	2277341.68	317933.39	711.64	713.71	2.07	714.74	1.032
1038	2277441.68	317933.39	692.72	694.81	2.09	695.87	1.058
1039	2277541.68	317933.39	675.25	677.33	2.08	678.38	1.055
1040	2277641.68	317933.39	668.13	670.26	2.13	671.32	1.064
1041	2277641.68	317951.36	664.18	666.19	2.01	667.30	1.102
1042	2277741.68	317948.23	662.98	665.00	2.02	666.07	1.068
1043	2277741.68	317933.39	662.66	664.76	2.10	665.80	1.035
1044	2277758.78	317946.58	659.93	661.98	2.05	662.98	1
1045	2277757.06	317933.39	661.00	663.07	2.07	664.11	1.04
1046	2277211.31	317833.39	743.97	746.03	2.06	747.06	1.026
1047	2277241.68	317833.39	738.24	740.31	2.07	741.37	1.06
1048	2277341.68	317833.39	719.47	721.54	2.07	722.58	1.042
1049	2277441.68	317833.39	699.86	701.94	2.08	703.01	1.07
1050	2277541.68	317833.39	692.49	694.59	2.10	695.66	1.062
1051	2277641.68	317833.39	687.77	689.83	2.06	690.92	1.085
1052	2277732.90	317833.39	679.16	681.18	2.02	682.21	1.029
1053	2277241.68	317756.35	743.90	745.99	2.09	747.08	1.089
1054	2277249.41	317733.39	743.78	745.92	2.14	746.98	1.058
1055	2277341.68	317733.39	725.67	727.81	2.13	728.88	1.071
1056	2277441.68	317733.39	716.26	718.31	2.05	719.36	1.05
1057	2277541.68	317733.39	711.51	713.63	2.12	714.69	1.056
1058	2277641.68	317733.39	706.38	708.52	2.14	709.58	1.06
1060	2277284.48	317629.29	743.45	745.56	2.11	746.63	1.07
1061	2277341.68	317633.39	739.21	741.31	2.10	742.38	1.068
1062	2277441.68	317633.39	732.77	734.88	2.11	735.95	1.07
1063	2277541.68	317633.39	726.96	729.10	2.14	730.14	1.036
1064	2277641.68	317633.39	726.49	728.60	2.11	729.65	1.046
1065	2277663.42	317633.39	722.58	724.59	2.01	725.64	1.052
1066	2277341.68	317565.77	748.39	750.50	2.11	751.51	1.009
1067	2277378.99	317528.95	750.92	753.03	2.11	754.04	1.009
1068	2277441.68	317533.39	749.07	751.14	2.06	752.18	1.046
1069	2277441.68	317524.94	750.30	752.41	2.10	753.43	1.023
1070	2277541.68	317533.39	747.20	749.34	2.14	750.38	1.048
1071	2277541.68	317518.55	749.36	751.43	2.07	752.49	1.054
1072	2277595.05	317533.39	743.28	745.31	2.03	746.34	1.034
1073	2277584.59	317515.81	745.88	747.95	2.07	748.98	1.028



Appendix C

Compacted Soil Liner Test Results



Appendix C1

Compacted Soil Liner Source Tests

ALLENDER BUTZKE ENGINEERS INC.

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April 14, 2025

SCS Engineers
1690 All-State Court
West Des Moines, IA 50265
Attn: Kasi Province, P.E.

RE: Laboratory Soil Analyses
Standard Proctor and
Hydraulic Conductivity Testing
Des Moines County Landfill
ABE PN 251157

Dear Ms. Province:

This letter presents the results of laboratory testing conducted on three soil sample submitted from Des Moines County Landfill on February 24, 2025. The results of the hydraulic conductivity tests using flexible wall permeameter equipment are provided on the following Table A. The soils were remolded and compacted to approximately 92 to 94 percent of the material's Standard Proctor (ASTM D-698) maximum dry density near the material's optimum moisture content. The prepared samples were about 2.6 inches in length and the flex wall hydraulic conductivity tests were conducted by passing water through the soil samples under a water head of about 6 feet.

In addition to the hydraulic conductivity tests, Atterberg limits, grain size analysis with hydrometer, and Standard Proctor (ASTM-D698) tests are presented in the attached Figure Nos. Att-1, GS-1, PR-1, PR-2, and PR-3.

TABLE A
HYDRAULIC CONDUCTIVITY TESTS RESULTS

Sample Number	Remolded Moisture Content (%)	Remolded Dry Density (pcf)	Hydraulic Conductivity (cm/sec)	Standard Proctor Compaction (%)	+/- Optimum Moisture
Upper Cut #1	13.8	112.5	1.6×10^{-8}	92.8	+0.4
Middle Cut #2	13.6	112.8	5.0×10^{-8}	93.8	+0.1
Lower Cut #3	13.8	110.7	1.2×10^{-8}	94.4	-0.7

If there are any questions concerning these test results, please contact us at your convenience.

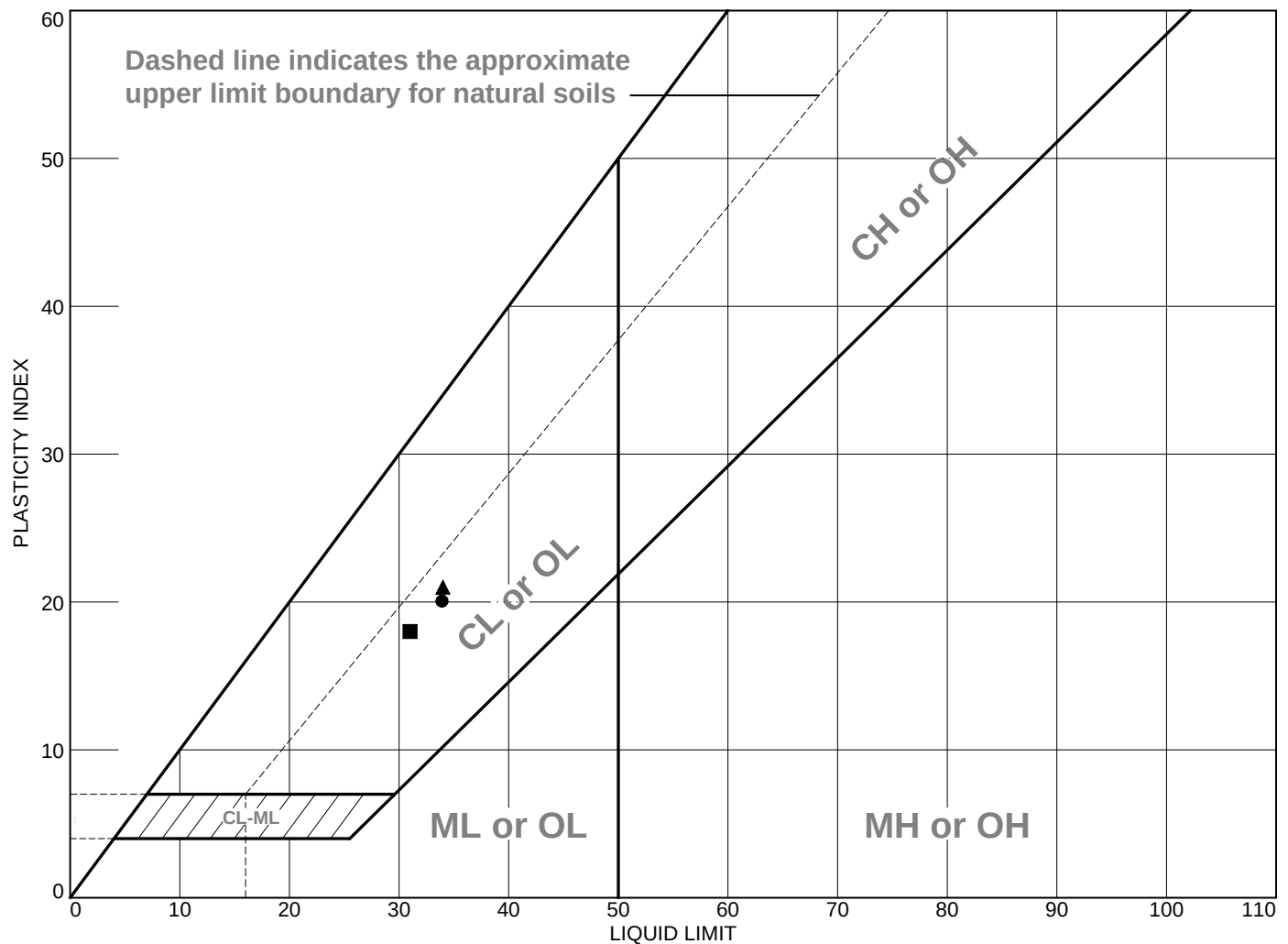
Respectfully submitted,
ALLENDER BUTZKE ENGINEERS INC.

David Logemann, P.E.
Principal Engineer

Stacy G. Brocka, P.E.
Principal Engineer

1 Email Above

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Brown-gray sandy lean clay	34	14	20	90.0	67.0	CL
■	Dark gray sandy lean clay	31	13	18	83.1	59.2	CL
▲	Dark gray lean clay with sand	34	13	21	89.9	68.5	CL

Project No. 251157 Client: SCS

Project: Des Moines County Landfill

● Location: Upper Cut #1

■ Location: Middle Cut #2

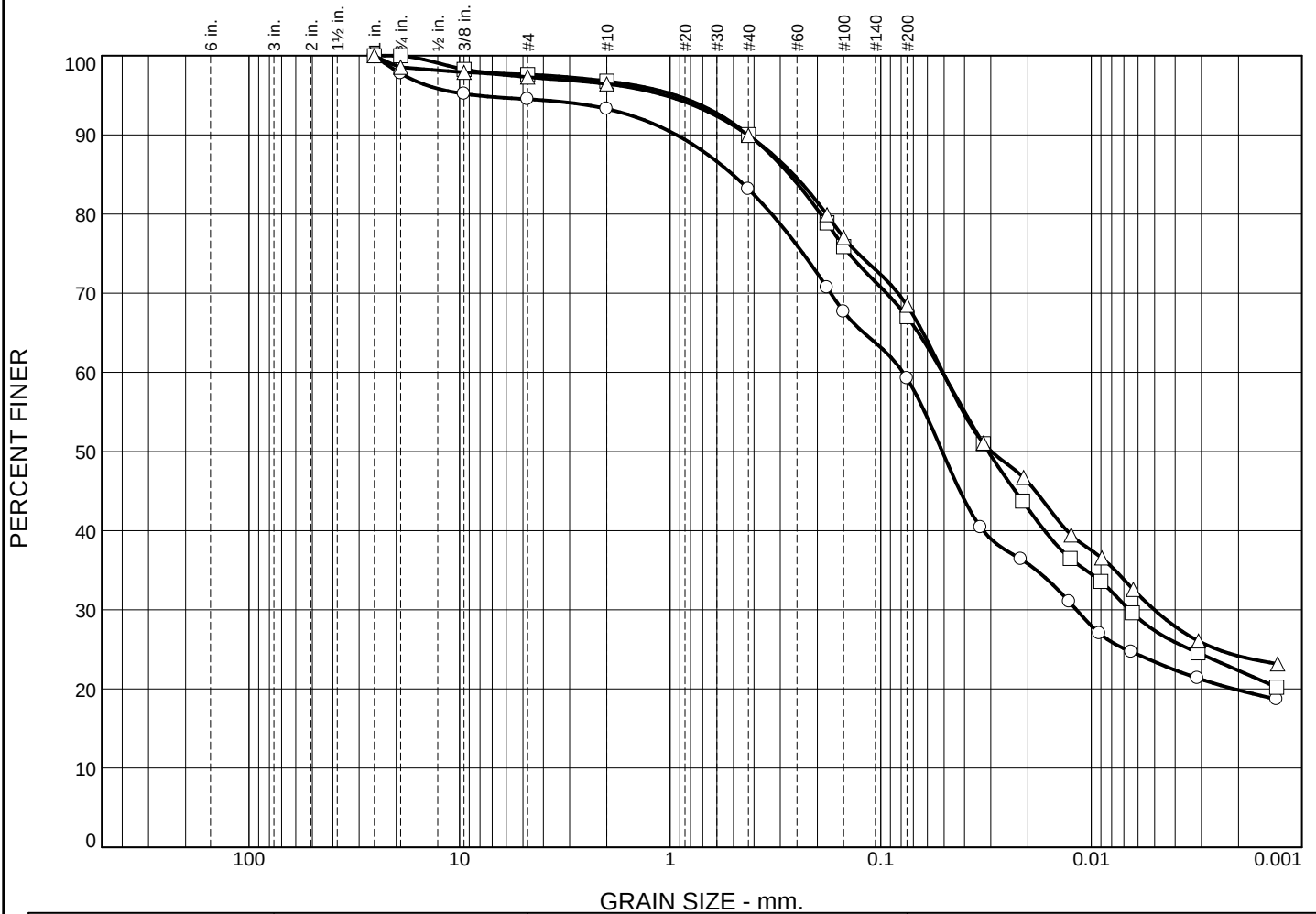
▲ Location: Lower Cut #3

Remarks:

ALLENDER BUTZKE ENGINEERS, INC.

Figure ATT-1

Particle Size Distribution Report



	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		2.2	3.3	1.2	10.2	23.9	39.3		19.9
□	0.0		0.0	2.4	0.8	6.8	23.0	44.7		22.3
△	0.0		1.5	1.2	0.9	6.5	21.4	44.3		24.2
×	LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○	31	18	0.5050	0.0783	0.0510	0.0118				
□	34	20	0.2714	0.0509	0.0309	0.0066				
△	34	21	0.2596	0.0507	0.0298	0.0050				

MATERIAL DESCRIPTION							USCS	AASHTO
○ Dark gray sandy lean clay							CL	A-6(7)
□ Brown-gray sandy lean clay							CL	A-6(11)
△ Dark gray lean clay with sand							CL	A-6(11)

Project No. 251157 **Client:** SCS
Project: Des Moines County Landfill

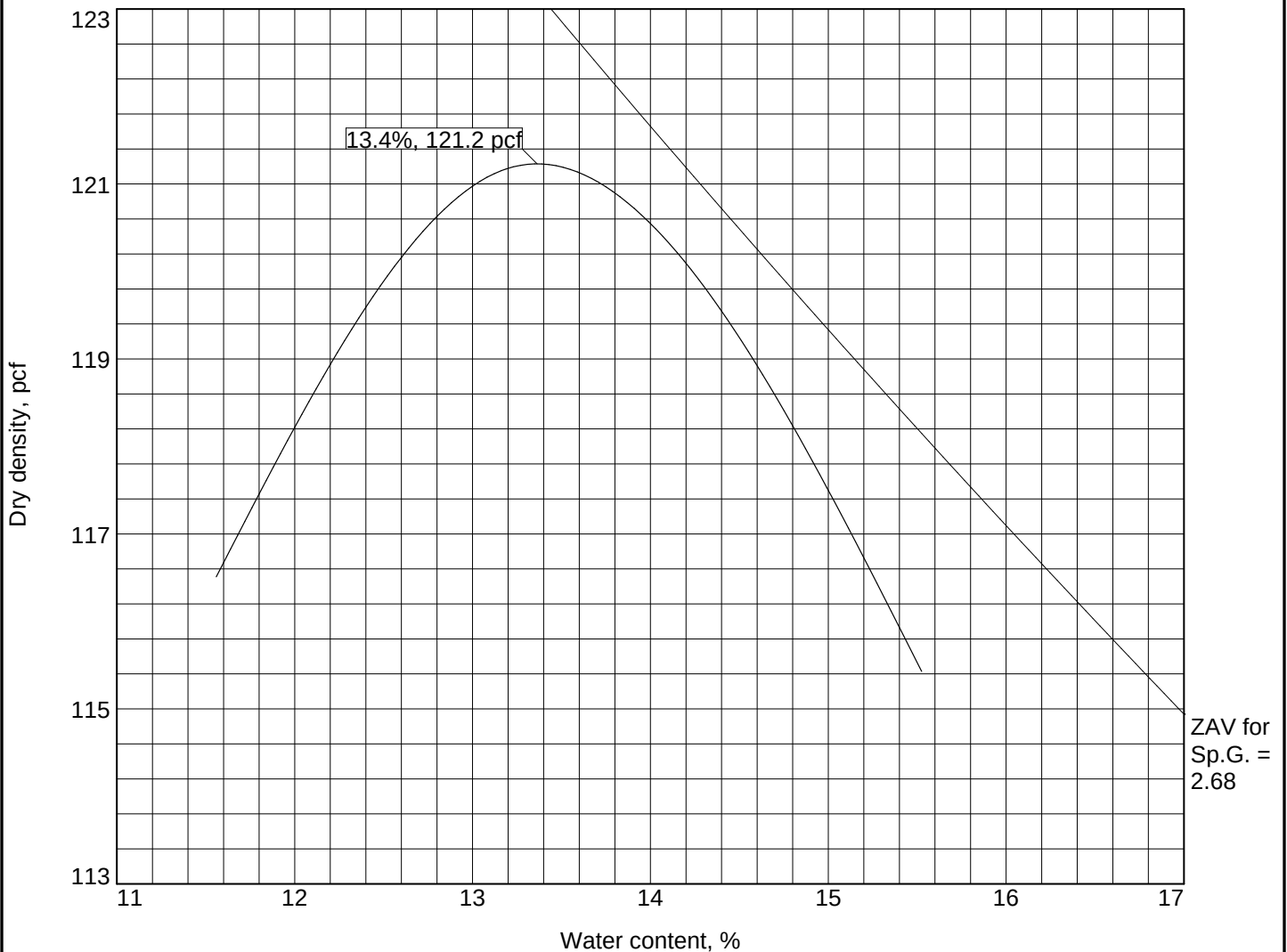
○ **Location:** Middle Cut #2
□ **Location:** Upper Cut #1
△ **Location:** Lower Cut #3

Remarks:

ALLENDER BUTZKE ENGINEERS, INC.

Figure GS-1

PROCTOR TEST REPORT

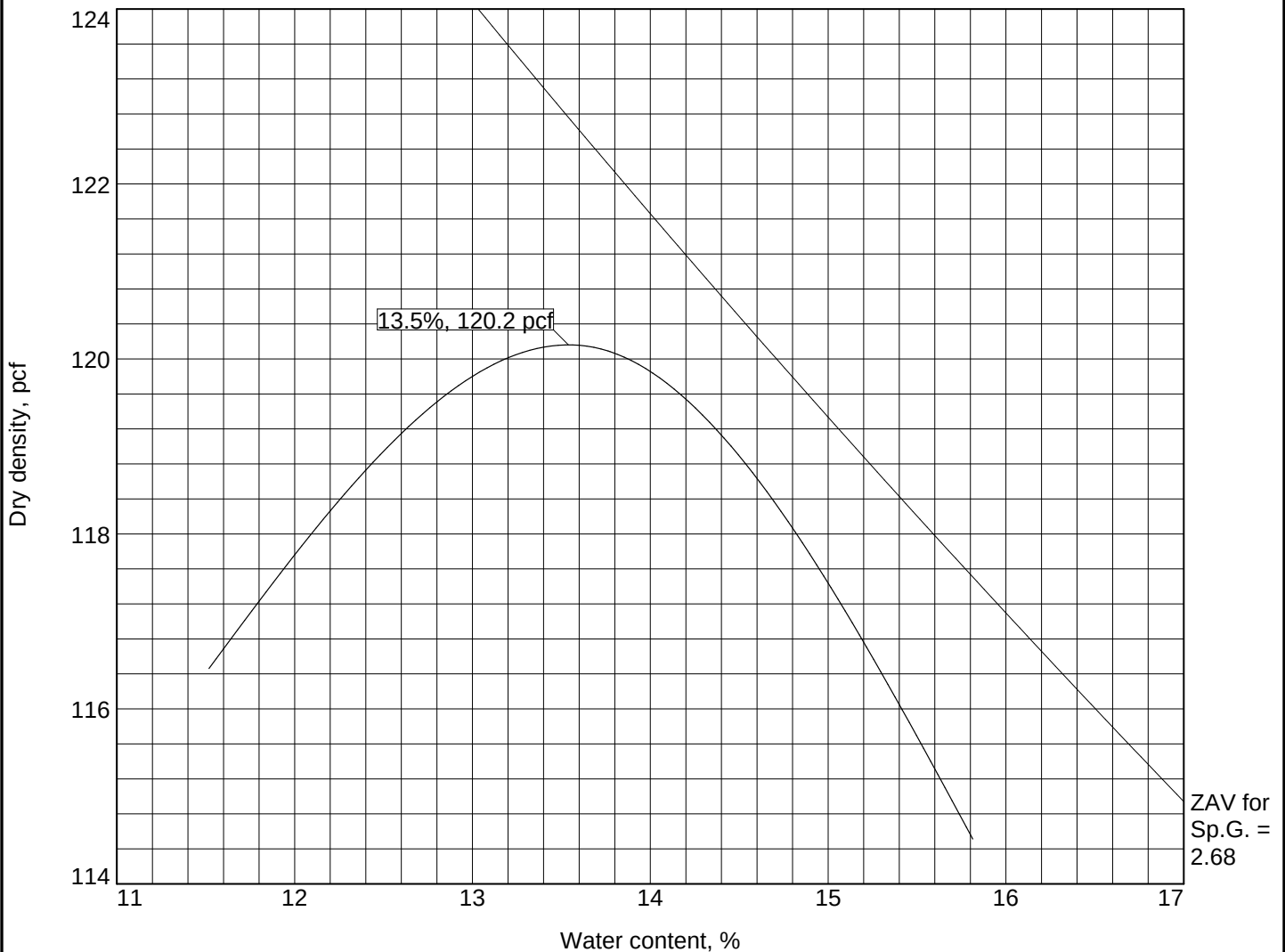


Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(11)		2.68	34	20	2.4	67.0

TEST RESULTS		MATERIAL DESCRIPTION	
Maximum dry density = 121.2 pcf Optimum moisture = 13.4 %		Brown-gray sandy lean clay	
Project No. 251157 Client: SCS Project: Des Moines County Landfill ☐ Location: Upper Cut #1		Remarks:	
ALLENDER BUTZKE ENGINEERS, INC.			
		Figure PR-1	

PROCTOR TEST REPORT



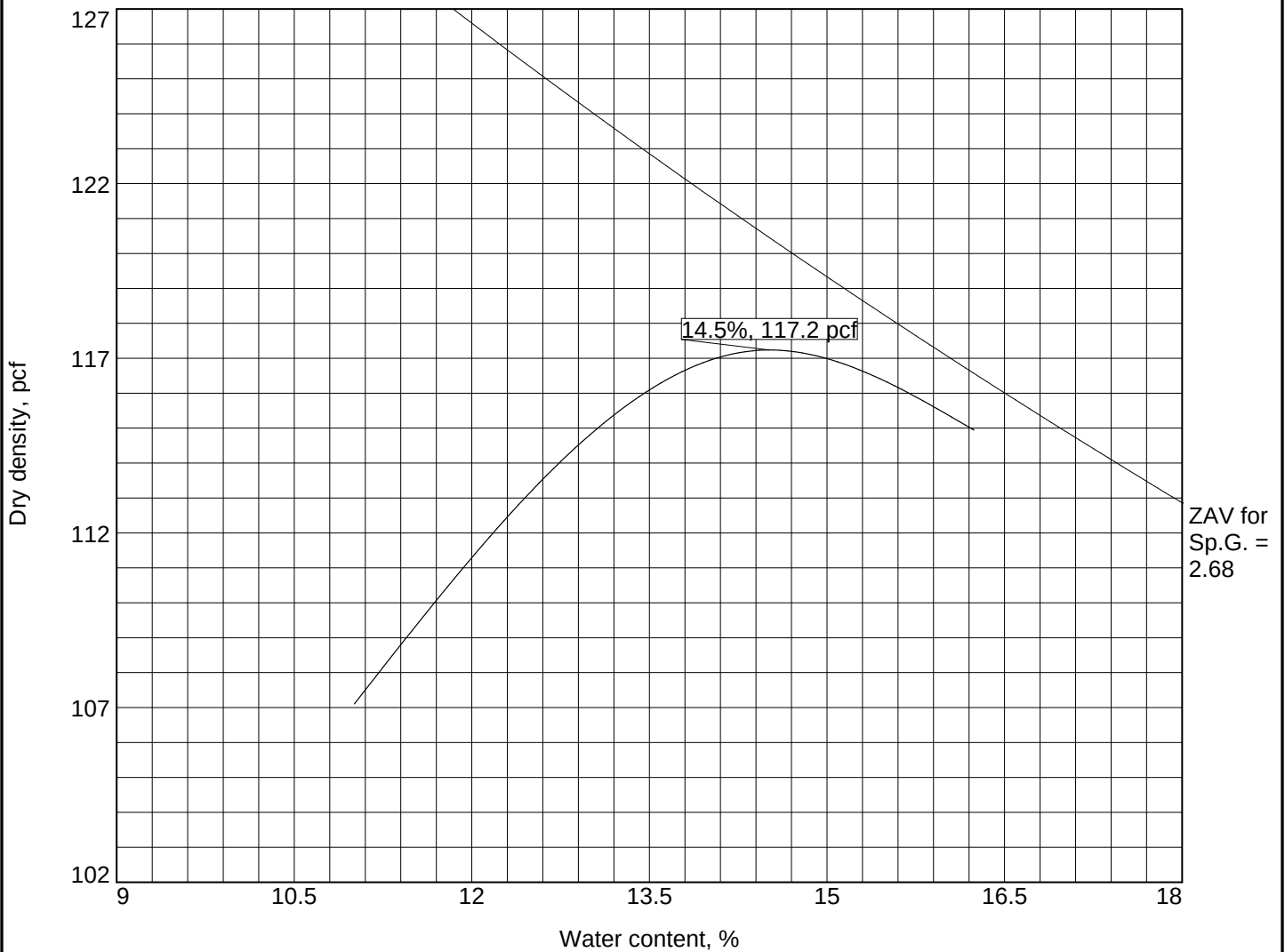
Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(7)		2.68	31	18	5.5	59.2

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 120.2 pcf Optimum moisture = 13.5 %		Dark gray sandy lean clay
Project No. 251157 Client: SCS Project: Des Moines County Landfill ☐ Location: Middle Cut #2		Remarks:
ALLENDER BUTZKE ENGINEERS, INC.		

Figure PR-2

PROCTOR TEST REPORT



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(11)		2.68	34	21	2.7	68.5

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 117.2 pcf Optimum moisture = 14.5 %		Dark gray lean clay with sand
Project No. 251157 Client: SCS Project: Des Moines County Landfill ☐ Location: Lower Cut #3		Remarks:
ALLENDER BUTZKE ENGINEERS, INC.		

Figure PR-3

Appendix C2

Compacted Soil Liner Moisture & Density

Field Test Results

SCS ENGINEERS - Nuclear Density Gauge Test Record

ver 2025 - v7 Beta 1h4 jfh/rdt; valid through 12/31/2025 v1

Note: This is a PROPRIETARY SPREADSHEET for the internal use by SCS Engineers ONLY. Those that use this spreadsheet without authorization by SCS Engineers, INC. should be advised that errors have been programmed into the logic which render the output unreliable should authentication codes not be updated periodically.

CCL

Client Name: Des Moines County Regional Waste Commission
SCS Engineers Proj Name: Des Moines County Abutment Cells D1-D2 Construction
Compacted Soil Liner
SCS Engineers Proj No.: 27224417.00
Project Location: Des Moines County Regional Sanitary Landfill
13758 Washington Road, West Burlington, IA 52655

Plot Failures Only Insert (x)

Mat #	Source Area	% Max DD for ET Cover
1	Upper Cut	
2	Middle Cut	
3	Lower Cut	
4		
5		
6		
7		

Test Number Formatting Legend for GG.LL.TT.R

Grid Designation = GG 0001 - 5199
Lift Designation = LL 000.01 - 000.99
Test Designation = TT 000.00.01 - 000.00.99
Retest Designation = R 000.00.00.1 - 000.00.00.9

Note: Comments on this row apply to the last data density entry above if 6 data sets are not entered.>>>

NDT Range Correction =

Material Designation

Description: USCS / Color

ASTM Test
Max Dry Density
Optimum Moisture Content

Acceptance Zone Point Limits

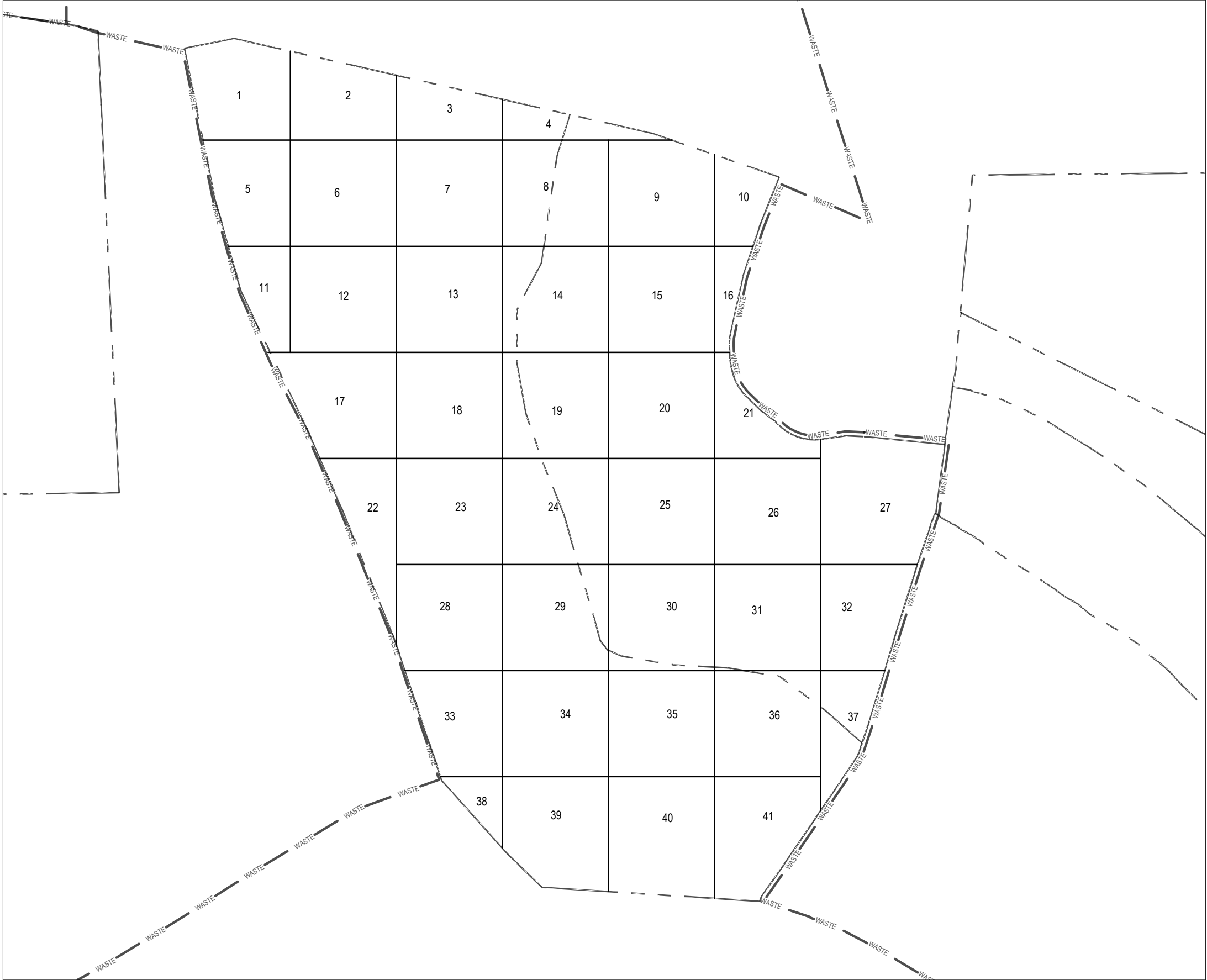
	Upper Cut	Middle Cut	Lower Cut				
	1	2	3	4	5	6	7
PR-1, Upper Cut #1 Brown-gray sandy lean clay		PR-2, Middle Cut #2 Dark gray sandy lean clay	PR-3, Lower Cut #3 Dark gray lean clay with sand				
D-698	D-698	D-698	D-698	D-698	D-698	D-698	D-698
121.2 pcf	120.2 pcf	117.2 pcf					
13.4%	13.5%	14.5%					
2.80	2.80	2.80					
MC ₁	13.800%	13.600%	14.500%				
γ _{d1}	126.02 pcf	126.54 pcf	124.27 pcf				
MC ₂	13.8%	13.6%	14.5%				
γ _{d2}	115.14 pcf	114.19 pcf	111.34 pcf				
MC ₃	16.400%	16.500%	17.500%				
γ _{d3}	115.14 pcf	114.19 pcf	111.34 pcf				
MC ₄	16.40%	16.50%	17.50%				
γ _{d4}	119.74 pcf	119.51 pcf	117.26 pcf				
MC ₅	16.400%	16.500%	17.500%				
γ _{d5}	119.74 pcf	119.51 pcf	117.26 pcf				
MC ₆	16.40%	16.50%	17.50%				
γ _{d6}	119.74 pcf	119.51 pcf	117.26 pcf				

Item	Date	Numeric Input	Test Number	Retest #	Material Designation	Lift (6-inch In-place)	Probe Depth	Wet Density	Water Weight	Dry Density	Moisture Content	Percent Compaction	Pass / Fail	Comments: (Automatic and Manual)		
	MM/DD/YY	GG.LL.TT.R	GG.LL.TT.R			1 to 99	(in)	(pcf)	(pcf)	(pcf)	(%)	(%)		MC or DD	Retest	ET cover
61	06/10/25	01.01.01.	01.01.01.		3	1	8.0 in	131.20 pcf	16.70 pcf	114.5 pcf	14.6%	97.7%	P			
179	06/25/25	01.02.01.	01.02.01.		2	2	8.0 in	131.20 pcf	17.00 pcf	114.2 pcf	14.9%	95.0%	P			
216	06/27/25	01.03.01.	01.03.01.		3	3	8.0 in	123.90 pcf	16.90 pcf	107.0 pcf	15.8%	91.3%	FAIL	Low Dry Den		
217	06/27/25	01.03.01.1	01.03.01.1	R1	3	3	8.0 in	131.60 pcf	16.60 pcf	115.0 pcf	14.4%	98.1%	FAIL	Low MC	and Retest Failed	
218	06/27/25	01.03.01.2	01.03.01.2	R2 OK	3	3	8.0 in	135.50 pcf	18.10 pcf	117.4 pcf	15.4%	100.2%	P		Retest Passed	
62	06/10/25	02.01.01.	02.01.01.		3	1	8.0 in	126.90 pcf	16.20 pcf	110.7 pcf	14.6%	94.5%	FAIL	Low Dry Den		
63	06/10/25	02.01.01.1	02.01.01.1	R1 OK	3	1	8.0 in	129.80 pcf	18.40 pcf	111.4 pcf	16.5%	95.1%	P		Retest Passed	
180	06/25/25	02.02.01.	02.02.01.		2	2	8.0 in	133.90 pcf	18.50 pcf	115.4 pcf	16.0%	96.0%	P			
221	06/27/25	02.03.01.	02.03.01.		3	3	8.0 in	131.90 pcf	17.60 pcf	114.3 pcf	15.4%	97.5%	P			
64	06/10/25	03.01.01.	03.01.01.		3	1	8.0 in	133.80 pcf	17.80 pcf	116.0 pcf	15.3%	99.0%	P			
181	06/25/25	03.02.01.	03.02.01.		2	2	8.0 in	130.40 pcf	18.30 pcf	112.1 pcf	16.3%	93.3%	FAIL	Low Dry Den		
185	06/25/25	03.02.01.1	03.02.01.1	R1 OK	2	2	8.0 in	132.50 pcf	18.10 pcf	114.4 pcf	15.8%	95.2%	P		Retest Passed	
222	06/30/25	03.03.01.	03.03.01.		3	3	8.0 in	133.30 pcf	18.10 pcf	115.2 pcf	15.7%	98.3%	P			
65	06/10/25	04.01.01.	04.01.01.		3	1	8.0 in	129.80 pcf	13.60 pcf	116.2 pcf	11.7%	99.1%	FAIL	Low MC		
66	06/10/25	04.01.01.1	04.01.01.1	R1	3	1	8.0 in	132.10 pcf	11.90 pcf	120.2 pcf	9.9%	102.6%	FAIL	Low MC	and Retest Failed	
67	06/10/25	04.01.01.2	04.01.01.2	R2	3	1	8.0 in	132.00 pcf	15.40 pcf	116.6 pcf	13.2%	99.5%	FAIL	Low MC	and Retest Failed	
140	06/16/25	04.01.02.	04.01.02.		3	1	8.0 in	131.00 pcf	15.40 pcf	115.6 pcf	13.3%	98.6%	FAIL	Low MC		
148	06/18/25	04.01.03.	04.01.03.		3	1	8.0 in	137.60 pcf	12.50 pcf	125.1 pcf	10.0%	106.7%	FAIL	Low MC		
149	06/18/25	04.01.03.1	04.01.03.1	R1 OK	3	1	8.0 in	127.80 pcf	16.40 pcf	111.4 pcf	14.7%	95.1%	P		Retest Passed	
182	06/25/25	04.02.01.	04.02.01.		2	2	8.0 in	135.40 pcf	18.70 pcf	116.7 pcf	16.0%	97.1%	P			
223	06/30/25	04.03.01.	04.03.01.		3	3	8.0 in	134.00 pcf	17.70 pcf	116.3 pcf	15.2%	99.2%	P			
68	06/11/25	05.01.01.	05.01.01.		3	1	8.0 in	130.70 pcf	17.10 pcf	113.6 pcf	15.1%	96.9%	P			
183	06/25/25	05.02.01.	05.02.01.		2	2	8.0 in	131.00 pcf	16.80 pcf	114.2 pcf	14.7%	95.0%	P			
219	06/27/25	05.03.01.	05.03.01.		3	3	8.0 in	130.70 pcf	17.80 pcf	112.9 pcf	15.8%	96.3%	P			
69	06/11/25	06.01.01.	06.01.01.		3	1	8.0 in	138.10 pcf	14.80 pcf	123.3 pcf	12.0%	105.2%	FAIL	Low MC		
70	06/11/25	06.01.01.1	06.01.01.1	R1	3	1	8.0 in	133.00 pcf	14.70 pcf	118.3 pcf	12.4%	100.9%	FAIL	Low MC	and Retest Failed	
71	06/11/25	06.01.01.2	06.01.01.2	R2	3	1	8.0 in	132.10 pcf	16.30 pcf	115.8 pcf	14.1%	98.8%	FAIL	Low MC	and Retest Failed	
72	06/11/25	06.01.01.3	06.01.01.3	R3	3	1	8.0 in	133.00 pcf	14.20 pcf	118.8 pcf	12.0%	101.4%	FAIL	Low MC	and Retest Failed	
131	06/13/25	06.01.02.	06.01.02.		3	1	8.0 in	135.60 pcf	16.30 pcf	119.3 pcf	13.7%	101.8%	FAIL	Low MC		
133	06/13/25	06.01.02.1	06.01.02.1	R1	3	1	8.0 in	136.40 pcf	14.90 pcf	121.5 pcf	12.3%	103.7%	FAIL	Low MC	and Retest Failed	
138	06/16/25	06.01.03.	06.01.03.		3	1	8.0 in	135.40 pcf	13.70 pcf	121.7 pcf	11.3%	103.8%	FAIL	Low MC		
143	06/17/25	06.01.04.	06.01.04.		3	1	8.0 in	131.30 pcf	15.60 pcf	115.7 pcf	13.5%	98.7%	FAIL	Low MC		
155	06/23/25	06.01.05.	06.01.05.		3	1	8.0 in	133.70 pcf	15.50 pcf	118.2 pcf	13.1%	100.9%	FAIL	Low MC		
156	06/23/25	06.01.05.1	06.01.05.1	R1 OK	3	1	8.0 in	131.70 pcf	17.40 pcf	114.3 pcf	15.2%	97.5%	P		Retest Passed	
184	06/25/25	06.02.01.	06.02.01.		2	2	8.0 in	131.50 pcf	17.30 pcf	114.2 pcf	15.1%	95.0%	P			
220	06/27/25	06.03.01.	06.03.01.		3	3	8.0 in	131.10 pcf	17.00 pcf	114.1 pcf	14.9%	97.4%	P			
73	06/11/25	07.01.01.	07.01.01.		3	1	8.0 in	133.00 pcf	15.90 pcf	117.1 pcf	13.6%	99.9%	FAIL	Low MC		
74	06/11/25	07.01.01.1	07.01.01.1	R1	3	1	8.0 in	136.50 pcf	16.90 pcf	119.6 pcf	14.1%	102.0%	FAIL	Low MC	and Retest Failed	
75	06/11/25	07.01.01.2	07.01.01.2	R2	3	1	8.0 in	136.60 pcf	17.00 pcf	119.6 pcf	14.2%	102.0%	FAIL	Low MC	and Retest Failed	
132	06/13/25	07.01.02.	07.01.02.		3	1	8.0 in	133.30 pcf	14.70 pcf	118.6 pcf	12.4%	101.2%	FAIL	Low MC		
134	06/13/25	07.01.02.1	07.01.02.1	R1	3	1	8.0 in	129.20 pcf	15.60 pcf	113.6 pcf	13.7%	96.9%	FAIL	Low MC	and Retest Failed	
139	06/16/25	07.01.03.	07.01.03.		3	1	8.0 in	137.00 pcf	14.40 pcf	122.6 pcf	11.7%	104.6%	FAIL	Low MC		
144	06/17/25	07.01.04.	07.01.04.		3	1	8.0 in	128.60 pcf	14.00 pcf	114.6 pcf	12.2%	97.8%	FAIL	Low MC		
157	06/23/25	07.01.05.	07.01.05.		3	1	8.0 in	132.30 pcf	18.80 pcf	113.5 pcf	16.6%	96.8%	P			
186	06/25/25	07.02.01.	07.02.01.		2	2	8.0 in	132.30 pcf	18.00 pcf	114.3 pcf	15.7%	95.1%	P			
224	06/30/25	07.03.01.	07.03.01.		3	3	8.0 in	117.50 pcf	15.50 pcf	102.0 pcf	15.2%	87.0%	FAIL	Low Dry Den		
225	06/30/25	07.03.01.1	07.03.01.1	R1	3	3	8.0 in	125.90 pcf	18.20 pcf	107.7 pcf	16.9%	91.9%	FAIL	Low Dry Den	and Retest Failed	
226	06/30/25	07.03.01.2	07.03.01.2	R2 OK	3	3	8.0 in	129.90 pcf	16.90 pcf	113.0 pcf	15.0%	96.4%	P		Retest Passed	
32	06/09/25	08.01.01.	08.01.01.		2	1	8.0 in	121.30 pcf	16.30 pcf	105.0 pcf	15.5%	87.4%	FAIL	Low Dry Den		
33	06/09/25	08.01.01.1	08.01.01.1	R1 OK	2	1	8.0 in	132.40 pcf	16.80 pcf	115.6 pcf	14.5%	96.2%	P		Retest Passed	
76	06/11/25	08.01.02.	08.01.02.		3	1	8.0 in	134.80 pcf	12.70 pcf	122.1 pcf	10.4%	104.2%	FAIL	Low MC		
77	06/11/25	08.01.02.1	08.01.02.1	R1 OK	3	1	8.0 in	134.60 pcf	17.70 pcf	116.9 pcf	15.1%	99.7%	P		Retest Passed	Extra test
187	06/25/25	08.02.01.	08.02.01.		2	2	8.0 in	133.00 pcf	18.40 pcf	114.6 pcf	16.1%	95.3%	P			
227	06/30/25	08.03.01.	08.03.01.		3	3	8.0 in	130.10 pcf	16.90 pcf	113.2 pcf	14.9%	96.6%	P			
31	06/09/25	09.01.01.	09.01.01.		2	1	8.0 in	123.10 pcf	18.70 pcf	104.4 pcf	17.9%	86.9%	FAIL	HighMC		
78	06/11/25	09.01.02.	09.01.02.		3	1	8.0 in	136.00 pcf	16.30 pcf	119.7 pcf	13.6%	102.1%	FAIL	Low MC		
79	06/11/25	09.01.02.1	09.01.02.1	R1 OK	3	1	8.0 in	137.50 pcf	17.60 pcf	119.9 pcf	14.7%	102.3%	P		Retest Passed	
188	06/25/25	09.02.01.	09.02.01.		2	2	8.0 in	137.30 pcf	18.30 pcf	119.0 pcf	15.4%	99.0%	P			
228	06/30/25	09.03.01.	09.03.01.		3	3	8.0 in	129.50 pcf	17.30 pcf	112.2 pcf	15.4%	95.7%	P			
80	06/11/25	10.01.01.	10.01.01.		3	1	8.0 in	138.70 pcf	17.40 pcf	121.3 pcf	14.3%	103.5%	FAIL	Low MC		
81	06/11/25	10.01.01.1	10.01.01.1	R1 OK	3	1	8.0 in	132.90 pcf	16.90 pcf	116.0 pcf	14.6%	99.0%	P		Retest Passed	
189	06/25/25	10.02.01.	10.02.01.		2	2	8.0 in	134.90 pcf	16.40 pcf	118.5 pcf	13.8%	98.6%	P			
229	06/30/25	10.03.01.	10.03.01.		2	3	8.0 in	131.50 pcf	16.90 pcf	114.6 pcf	14.7%	95.3%	P			
94	06/11/25	11.01.01.	11.01.01.		2	1	8.0 in	135.20 pcf	16.60 pcf	118.6 pcf	14.0%	98.7%	P			
170	06/25/25	11.02.01.	11.02.01.		1	2	8.0 in	133.90 pcf	15.70 pcf	118.2 pcf	13.3%	97.5%	FAIL	Low MC		
171	06/25/25	11.02.01.1	11.02.01.1	R1 OK	1	2	8.0 in	135.70 pcf	17.00 pcf	118.7 pcf	14.3%	97.9%	P		Retest Passed	
210	06/26/25	11.03.01.	11.03.01.		3	3	8.0 in	132.00 pcf	15.80 pcf	116.2 pcf	13.6%	99.1%	FAIL	Low MC		
212	06/26/25	11.03.01.1	11.03.01.1	R1 OK	3	3	8.0 in	133.70 pcf	19.70 pcf	114.0 pcf	17.3%	97.3%	P		Retest Passed	

Item	Date	Numeric Input	Test Number	Retest #	Material Designation	Lift (6-inch in-place) 1 to 99	Probe Depth	Wet Density	Water Weight	Dry Density	Moisture Content	Percent Compaction	Pass / Fail	Comments: (Automatic and Manual)			
	MM/DD/YY	GG.LLTT.R	GG.LLTT.R				(in)	(pcf)	(pcf)	(pcf)	(%)	(%)		MC or DD	Retest	Manual comments here	ET cover
17	06/09/25	12.01.01.	12.01.01.		2	1	8.0 in	122.90 pcf	17.30 pcf	105.6 pcf	16.4%	87.9%	FAIL	Low Dry Den			
92	06/11/25	12.01.02.	12.01.02.		2	1	8.0 in	133.70 pcf	13.20 pcf	120.5 pcf	11.0%	100.2%	FAIL	Low MC			
93	06/11/25	12.01.02.1	12.01.02.1	R1 OK	2	1	8.0 in	130.80 pcf	16.60 pcf	114.2 pcf	14.5%	95.0%	P		Retest Passed		
172	06/25/25	12.02.01.	12.02.01.		1	2	8.0 in	129.20 pcf	15.70 pcf	113.5 pcf	13.8%	93.6%	FAIL	Low Dry Den			
173	06/25/25	12.02.01.1	12.02.01.1	R1 OK	1	2	8.0 in	135.50 pcf	16.80 pcf	118.7 pcf	14.2%	97.9%	P		Retest Passed		
211	06/26/25	12.03.01.	12.03.01.		3	3	8.0 in	135.00 pcf	19.90 pcf	115.1 pcf	17.3%	98.2%	P				
18	06/09/25	13.01.01.	13.01.01.		2	1	8.0 in	132.90 pcf	19.90 pcf	113.0 pcf	17.6%	94.0%	FAIL	HighMC			
89	06/11/25	13.01.02.	13.01.02.		2	1	8.0 in	135.10 pcf	15.50 pcf	119.6 pcf	13.0%	99.5%	FAIL	Low MC			
90	06/11/25	13.01.02.1	13.01.02.1	R1 OK	2	1	8.0 in	134.80 pcf	16.40 pcf	118.4 pcf	13.9%	98.5%	P		Retest Passed		
174	06/25/25	13.02.01.	13.02.01.		1	2	8.0 in	134.30 pcf	16.60 pcf	117.7 pcf	14.1%	97.1%	P				
230	07/01/25	13.03.01.	13.03.01.		3	3	8.0 in	136.80 pcf	18.30 pcf	118.5 pcf	15.4%	101.1%	P				
19	06/09/25	14.01.01.	14.01.01.		2	1	8.0 in	117.40 pcf	15.90 pcf	101.5 pcf	15.7%	84.4%	FAIL	Low Dry Den			
87	06/11/25	14.01.02.	14.01.02.		2	1	8.0 in	135.70 pcf	16.70 pcf	119.0 pcf	14.0%	99.0%	P				
88	06/11/25	14.01.02.1	14.01.02.1	R1	2	1	8.0 in	136.40 pcf	16.10 pcf	120.3 pcf	13.4%	100.1%	FAIL	Low MC	and Retest Failed		
175	06/25/25	14.02.01.	14.02.01.		1	2	8.0 in	132.00 pcf	16.60 pcf	115.4 pcf	14.4%	95.2%	P				
231	07/01/25	14.03.01.	14.03.01.		3	3	8.0 in	133.70 pcf	19.60 pcf	114.1 pcf	17.2%	97.4%	P				
20	06/09/25	15.01.01.	15.01.01.		1	1	8.0 in	121.80 pcf	15.50 pcf	106.3 pcf	14.6%	87.7%	FAIL	Low Dry Den			
85	06/11/25	15.01.02.	15.01.02.		2	1	8.0 in	131.80 pcf	16.50 pcf	115.3 pcf	14.3%	95.9%	P				
86	06/11/25	15.01.02.1	15.01.02.1	R1	2	1	8.0 in	122.30 pcf	11.90 pcf	110.4 pcf	10.8%	91.8%	FAIL	Low MC	and Retest Failed		
176	06/25/25	15.02.01.	15.02.01.		2	2	8.0 in	130.30 pcf	14.70 pcf	115.6 pcf	12.7%	96.2%	FAIL	Low MC			
177	06/25/25	15.02.01.1	15.02.01.1	R1 OK	2	2	8.0 in	131.10 pcf	16.50 pcf	114.6 pcf	14.4%	95.3%	P		Retest Passed		
232	07/01/25	15.03.01.	15.03.01.		3	3	8.0 in	131.00 pcf	18.50 pcf	112.5 pcf	16.4%	96.0%	P				
82	06/11/25	16.01.01.	16.01.01.		3	1	8.0 in	131.70 pcf	16.50 pcf	115.2 pcf	14.3%	98.3%	FAIL	Low MC			
83	06/11/25	16.01.01.1	16.01.01.1	R1	2	1	8.0 in	136.10 pcf	15.70 pcf	120.4 pcf	13.0%	100.2%	FAIL	Low MC	and Retest Failed		
84	06/11/25	16.01.01.2	16.01.01.2	R2 OK	2	1	8.0 in	138.00 pcf	17.40 pcf	120.6 pcf	14.4%	100.3%	P		Retest Passed		
135	06/13/25	16.01.02.	16.01.02.		2	1	8.0 in	136.50 pcf	16.40 pcf	120.1 pcf	13.7%	99.9%	P				
178	06/25/25	16.02.01.	16.02.01.		2	2	8.0 in	133.60 pcf	16.00 pcf	117.6 pcf	13.6%	97.8%	P				
233	07/01/25	16.03.01.	16.03.01.		3	3	8.0 in	131.00 pcf	18.10 pcf	112.9 pcf	16.0%	96.3%	P				
24	06/09/25	17.01.01.	17.01.01.		2	1	8.0 in	134.90 pcf	17.60 pcf	117.3 pcf	15.0%	97.6%	P				
169	06/25/25	17.02.01.	17.02.01.		1	2	8.0 in	134.30 pcf	17.00 pcf	117.3 pcf	14.5%	96.8%	P				
209	06/26/25	17.03.01.	17.03.01.		3	3	8.0 in	134.20 pcf	18.20 pcf	116.0 pcf	15.7%	99.0%	P				
23	06/09/25	18.01.01.	18.01.01.		2	1	8.0 in	134.90 pcf	16.30 pcf	118.6 pcf	13.7%	98.7%	P				
168	06/25/25	18.02.01.	18.02.01.		1	2	8.0 in	134.50 pcf	16.50 pcf	118.0 pcf	14.0%	97.4%	P				
208	06/26/25	18.03.01.	18.03.01.		3	3	8.0 in	130.50 pcf	18.20 pcf	112.3 pcf	16.2%	95.8%	P				
22	06/09/25	19.01.01.	19.01.01.		2	1	8.0 in	127.50 pcf	17.20 pcf	110.3 pcf	15.6%	91.8%	FAIL	Low Dry Den			
91	06/11/25	19.01.02.	19.01.02.		2	1	8.0 in	135.80 pcf	14.60 pcf	121.2 pcf	12.0%	100.8%	FAIL	Low MC			
122	06/12/25	19.01.03.	19.01.03.		2	1	8.0 in	119.20 pcf	12.10 pcf	107.1 pcf	11.3%	89.1%	FAIL	Low MC			
137	06/13/25	19.01.04.	19.01.04.		2	1	8.0 in	127.90 pcf	16.80 pcf	111.1 pcf	15.1%	92.4%	FAIL	Low Dry Den			
141	06/16/25	19.01.05.	19.01.05.		2	1	8.0 in	127.70 pcf	13.20 pcf	114.5 pcf	11.5%	95.3%	FAIL	Low MC			
147	06/17/25	19.01.06.	19.01.06.		2	1	8.0 in	119.60 pcf	11.40 pcf	108.2 pcf	10.5%	90.0%	FAIL	Low MC			
151	06/20/25	19.01.07.	19.01.07.		2	1	8.0 in	133.70 pcf	14.70 pcf	119.0 pcf	12.4%	99.0%	FAIL	Low MC			
152	06/20/25	19.01.07.1	19.01.07.1	R1 OK	2	1	8.0 in	133.90 pcf	18.90 pcf	115.0 pcf	16.4%	95.7%	P		Retest Passed		
167	06/25/25	19.02.01.	19.02.01.		3	2	8.0 in	135.00 pcf	17.40 pcf	117.6 pcf	14.8%	100.3%	P				
207	06/26/25	19.03.01.	19.03.01.		3	3	8.0 in	132.00 pcf	16.80 pcf	115.2 pcf	14.6%	98.3%	P				
21	06/09/25	20.01.01.	20.01.01.		1	1	8.0 in	121.60 pcf	16.60 pcf	105.0 pcf	15.8%	86.6%	FAIL	Low Dry Den			
142	06/16/25	20.01.02.	20.01.02.		1	1	8.0 in	121.60 pcf	15.40 pcf	106.2 pcf	14.5%	87.6%	FAIL	Low Dry Den			
153	06/20/25	20.01.03.	20.01.03.		1	1	8.0 in	130.60 pcf	16.10 pcf	114.5 pcf	14.1%	94.5%	FAIL	Low Dry Den			
154	06/20/25	20.01.03.1	20.01.03.1	R1 OK	1	1	8.0 in	136.80 pcf	17.20 pcf	119.6 pcf	14.4%	98.7%	P		Retest Passed		
166	06/25/25	20.02.01.	20.02.01.		3	2	8.0 in	136.00 pcf	17.30 pcf	118.7 pcf	14.6%	101.3%	P				
206	06/26/25	20.03.01.	20.03.01.		3	3	8.0 in	134.50 pcf	19.70 pcf	114.8 pcf	17.2%	98.0%	P				
5	06/06/25	21.01.01.	21.01.01.		2	1	8.0 in	126.90 pcf	18.10 pcf	108.8 pcf	16.6%	90.5%	FAIL	HighMC			
42	06/10/25	21.01.02.	21.01.02.		3	1	8.0 in	132.20 pcf	18.30 pcf	113.9 pcf	16.1%	97.2%	P				
102	06/11/25	21.02.01.	21.02.01.		3	2	8.0 in	124.00 pcf	15.00 pcf	109.0 pcf	13.8%	93.0%	FAIL	Low MC			
165	06/25/25	21.02.02.	21.02.02.		3	2	8.0 in	131.60 pcf	19.40 pcf	112.2 pcf	17.3%	95.7%	P				
234	07/02/25	21.03.01.	21.03.01.		3	3	8.0 in	124.70 pcf	16.40 pcf	108.3 pcf	15.1%	92.4%	FAIL	Low Dry Den			
235	07/02/25	21.03.01.1	21.03.01.1	R1 OK	3	3	8.0 in	129.30 pcf	16.90 pcf	112.4 pcf	15.0%	95.9%	P		Retest Passed		
16	06/09/25	22.01.01.	22.01.01.		2	1	8.0 in	129.60 pcf	13.60 pcf	116.0 pcf	11.7%	96.5%	FAIL	Low MC			
59	06/10/25	22.01.02.	22.01.02.		2	1	8.0 in	141.20 pcf	16.60 pcf	124.6 pcf	13.3%	103.7%	FAIL	Low MC			
60	06/10/25	22.01.02.1	22.01.02.1	R1	2	1	8.0 in	140.20 pcf	15.20 pcf	125.0 pcf	12.2%	104.0%	FAIL	Low MC	and Retest Failed		
120	06/12/25	22.01.03.	22.01.03.		2	1	8.0 in	129.00 pcf	12.10 pcf	116.9 pcf	10.4%	97.3%	FAIL	Low MC			
124	06/13/25	22.01.04.	22.01.04.		2	1	8.0 in	128.40 pcf	14.10 pcf	114.3 pcf	12.3%	95.1%	FAIL	Low MC			
125	06/13/25	22.01.04.1	22.01.04.1	R1	2	1	8.0 in	130.30 pcf	13.80 pcf	116.5 pcf	11.8%	96.9%	FAIL	Low MC	and Retest Failed		
126	06/13/25	22.01.04.2	22.01.04.2	R2	2	1	8.0 in	132.80 pcf	14.30 pcf	118.5 pcf	12.1%	98.6%	FAIL	Low MC	and Retest Failed		
127	06/13/25	22.01.04.3	22.01.04.3	R3	2	1	8.0 in	128.40 pcf	14.90 pcf	113.5 pcf	13.1%	94.4%	FAIL	Low MC	and Retest Failed		
128	06/13/25	22.01.04.4	22.01.04.4	R4	2	1	8.0 in	136.90 pcf	15.40 pcf	121.5 pcf	12.7%	101.1%	FAIL	Low MC	and Retest Failed		
129	06/13/25	22.01.04.5	22.01.04.5	R5	2	1	8.0 in	136.20 pcf	14.40 pcf	121.8 pcf	11.8%	101.3%	FAIL	Low MC	and Retest Failed		
136	06/13/25	22.01.05.	22.01.05.		2	1	8.0 in	130.50 pcf	16.30 pcf	114.2 pcf	14.3%	95.0%	P				
160	06/25/25	22.02.01.	22.02.01.		2	2	8.0 in	135.30 pcf	16.20 pcf	119.1 pcf	13.6%	99.1%	P				
201	06/26/25	22.03.01.	22.03.01.		3	3	8.0 in	133.90 pcf	18.10 pcf	115.8 pcf	15.6%	98.8%	P				
15	06/09/25	23.01.01.	23.01.01.		2	1	8.0 in	131.90 pcf	16.20 pcf	115.7 pcf	14.0%	96.3%	P				
54	06/10/25	23.01.02.	23.01.02.		2	1	8.0 in	134.60 pcf	20.10 pcf	114.5 pcf	17.6%	95.3%	FAIL	HighMC			
55	06/10/25	23.01.02.1	23.01.02.1	R1 OK	2	1	8.0 in	138.90 pcf	17.80 pcf	121.1 pcf	14.7%	100.7%	P		Retest Passed		
161	06/25/25	23.02.01.	23.02.01.		2	2	8.0 in	139.40 pcf	14.90 pcf	124.5 pcf	12.0%	103.6%	FAIL	Low MC			
162	06/25/25	23.02.01.1	23.02.01.1	R1 OK	2	2	8.0 in	134.60 pcf	17.00 pcf	117.6 pcf	14.5%	97.8%	P		Retest Passed		
202	06/26/25	23.03.01.	23.03.01.		3	3	8.0 in	132.20 pcf	18.90 pcf	113.3 pcf	16.7%	96.7%	P				
14	06/09/25	24.01.01.	24.01.01.		2	1	8.0 in	114.90 pcf	14.90 pcf	100.0 pcf	14.9%	83.2%	FAIL	Low Dry Den			
56	06/10/25	24.01.02.	24.01.02.		2	1	8.0 in	128.90 pcf	14.60 pcf	114.3 pcf	12.8%	95.1%	FAIL	Low MC			

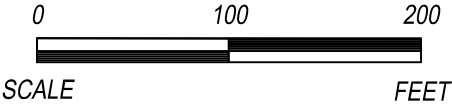
Item	Date	Numeric Input	Test Number	Retest #	Material Designation	Lift (6-inch in-place) 1 to 99	Probe Depth	Wet Density	Water Weight	Dry Density	Moisture Content	Percent Compaction	Pass / Fail	Comments: (Automatic and Manual)			
	MM/DD/YY	GG.LL.TT.R	GG.LL.TT.R				(in)	(pcf)	(pcf)	(pcf)	(%)	(%)		MC or DD	Retest	Manual comments here	ET cover
101	06/11/25	26.02.01.1	26.02.01.1	R1	3	2	8.0 in	124.50 pcf	16.30 pcf	108.2 pcf	15.1%	92.3%	FAIL	Low Dry Den	and Retest Failed		
164	06/25/25	26.02.02.	26.02.02.		3	2	8.0 in	135.40 pcf	16.40 pcf	119.0 pcf	13.8%	101.5%	FAIL	Low MC			
193	06/26/25	26.02.03.	26.02.03.		3	2	8.0 in	129.20 pcf	17.50 pcf	111.7 pcf	15.7%	95.3%	P				
239	07/02/25	26.03.01.	26.03.01.		2	3	8.0 in	134.40 pcf	17.80 pcf	116.6 pcf	15.3%	97.0%	P				
4	06/06/25	27.01.01.	27.01.01.		2	1	8.0 in	134.70 pcf	18.00 pcf	116.7 pcf	15.4%	97.1%	P				
103	06/11/25	27.02.01.	27.02.01.		3	2	8.0 in	133.90 pcf	14.60 pcf	119.3 pcf	12.2%	101.8%	FAIL	Low MC			
145	06/17/25	27.02.02.	27.02.02.		3	2	8.0 in	119.30 pcf	17.10 pcf	102.2 pcf	16.7%	87.2%	FAIL	Low Dry Den			
146	06/17/25	27.02.02.1	27.02.02.1	R1	3	2	8.0 in	131.80 pcf	16.40 pcf	115.4 pcf	14.2%	98.5%	FAIL	Low MC	and Retest Failed		
194	06/26/25	27.02.03.	27.02.03.		3	2	8.0 in	129.10 pcf	16.40 pcf	112.7 pcf	14.6%	96.2%	P				
245	07/03/25	27.03.01.	27.03.01.		3	3	8.0 in	132.50 pcf	18.50 pcf	114.0 pcf	16.2%	97.3%	P				
30	06/09/25	28.01.01.	28.01.01.		2	1	8.0 in	133.70 pcf	15.90 pcf	117.8 pcf	13.5%	98.0%	FAIL	Low MC			
53	06/10/25	28.01.02.	28.01.02.		2	1	8.0 in	136.20 pcf	18.60 pcf	117.6 pcf	15.8%	97.8%	P				
115	06/12/25	28.02.01.	28.02.01.		2	2	8.0 in	137.20 pcf	16.80 pcf	120.4 pcf	14.0%	100.2%	P				
236	07/02/25	28.03.01.	28.03.01.		3	3	8.0 in	128.90 pcf	17.20 pcf	111.7 pcf	15.4%	95.3%	P				
28	06/09/25	29.01.01.	29.01.01.		2	1	8.0 in	133.30 pcf	17.90 pcf	115.4 pcf	15.5%	96.0%	P				
50	06/10/25	29.01.02.	29.01.02.		3	1	8.0 in	132.40 pcf	19.20 pcf	113.2 pcf	17.0%	96.6%	P			Extra test	
110	06/11/25	29.02.01.	29.02.01.		2	2	8.0 in	134.40 pcf	17.30 pcf	117.1 pcf	14.8%	97.4%	P				
237	07/02/25	29.03.01.	29.03.01.		3	3	8.0 in	134.20 pcf	17.70 pcf	116.5 pcf	15.2%	99.4%	P				
45	06/10/25	30.01.01.	30.01.01.		3	1	8.0 in	131.40 pcf	19.50 pcf	111.9 pcf	17.4%	95.5%	P				
118	06/12/25	30.02.01.	30.02.01.		2	2	8.0 in	132.70 pcf	16.20 pcf	116.5 pcf	13.9%	96.9%	P				
238	07/02/25	30.03.01.	30.03.01.		3	3	8.0 in	136.20 pcf	17.70 pcf	118.5 pcf	14.9%	101.1%	P				
7	06/06/25	31.01.01.	31.01.01.		2	1	8.0 in	130.10 pcf	17.80 pcf	112.3 pcf	15.9%	93.4%	FAIL	Low Dry Den			
12	06/09/25	31.01.01.1	31.01.01.1	R1	2	1	8.0 in	132.50 pcf	14.40 pcf	118.1 pcf	12.2%	98.3%	FAIL	Low MC	and Retest Failed		
38	06/10/25	31.01.02.	31.01.02.		2	1	8.0 in	130.30 pcf	15.00 pcf	115.3 pcf	13.0%	95.9%	FAIL	Low MC			
39	06/10/25	31.01.02.1	31.01.02.1	R1 OK	2	1	8.0 in	130.20 pcf	15.60 pcf	114.6 pcf	13.6%	95.3%	P		Retest Passed		
98	06/11/25	31.02.01.	31.02.01.		3	2	8.0 in	130.80 pcf	16.40 pcf	114.4 pcf	14.3%	97.6%	FAIL	Low MC			
99	06/11/25	31.02.01.1	31.02.01.1	R1 OK	3	2	8.0 in	128.60 pcf	16.30 pcf	112.3 pcf	14.5%	95.8%	P		Retest Passed		
246	07/07/25	31.03.01.	31.03.01.		3	3	8.0 in	127.50 pcf	17.30 pcf	110.2 pcf	15.7%	94.0%	FAIL	Low Dry Den			
247	07/07/25	31.03.01.1	31.03.01.1	R1 OK	3	3	8.0 in	135.80 pcf	17.20 pcf	118.6 pcf	14.5%	101.2%	P		Retest Passed		
3	06/06/25	32.01.01.	32.01.01.		2	1	8.0 in	135.00 pcf	19.30 pcf	115.7 pcf	16.7%	96.3%	FAIL	HighMC			
25	06/09/25	32.01.01.1	32.01.01.1	R1 OK	2	1	8.0 in	135.10 pcf	16.20 pcf	118.9 pcf	13.6%	98.9%	P		Retest Passed		
104	06/11/25	32.02.01.	32.02.01.		3	2	8.0 in	127.30 pcf	12.50 pcf	114.8 pcf	10.9%	98.0%	FAIL	Low MC			
195	06/26/25	32.02.02.	32.02.02.		3	2	8.0 in	130.50 pcf	17.00 pcf	113.5 pcf	15.0%	96.8%	P				
251	07/08/25	32.03.01.	32.03.01.		3	3	8.0 in	130.60 pcf	17.10 pcf	113.5 pcf	15.1%	96.8%	P				
29	06/09/25	33.01.01.	33.01.01.		2	1	8.0 in	137.40 pcf	15.30 pcf	122.1 pcf	12.5%	101.6%	FAIL	Low MC			
52	06/10/25	33.01.02.	33.01.02.		3	1	8.0 in	132.80 pcf	19.70 pcf	113.1 pcf	17.4%	96.5%	P				
108	06/11/25	33.02.01.	33.02.01.		2	2	8.0 in	112.00 pcf	14.40 pcf	97.6 pcf	14.8%	81.2%	FAIL	Low Dry Den			
114	06/12/25	33.02.02.	33.02.02.		2	2	8.0 in	126.20 pcf	15.00 pcf	111.2 pcf	13.5%	92.5%	FAIL	Low MC			
190	06/26/25	33.02.03.	33.02.03.		2	2	8.0 in	135.90 pcf	17.90 pcf	118.0 pcf	15.2%	98.2%	P				
240	07/02/25	33.03.01.	33.03.01.		3	3	8.0 in	130.70 pcf	17.40 pcf	113.3 pcf	15.4%	96.7%	P				
27	06/09/25	34.01.01.	34.01.01.		2	1	8.0 in	131.10 pcf	15.40 pcf	115.7 pcf	13.3%	96.3%	FAIL	Low MC			
49	06/10/25	34.01.02.	34.01.02.		3	1	8.0 in	134.20 pcf	19.00 pcf	115.2 pcf	16.5%	98.3%	P				
109	06/11/25	34.02.01.	34.02.01.		2	2	8.0 in	132.20 pcf	16.50 pcf	115.7 pcf	14.3%	96.3%	P				
241	07/02/25	34.03.01.	34.03.01.		3	3	8.0 in	129.40 pcf	17.90 pcf	111.5 pcf	16.1%	95.1%	P				
46	06/10/25	35.01.01.	35.01.01.		3	1	8.0 in	137.80 pcf	18.10 pcf	119.7 pcf	15.1%	102.1%	P				
117	06/12/25	35.02.01.	35.02.01.		2	2	8.0 in	124.30 pcf	15.50 pcf	108.8 pcf	14.2%	90.5%	FAIL	Low Dry Den			
197	06/26/25	35.02.02.	35.02.02.		2	2	8.0 in	133.00 pcf	17.60 pcf	115.4 pcf	15.3%	96.0%	P				
243	07/02/25	35.03.01.	35.03.01.		3	3	8.0 in	133.60 pcf	17.40 pcf	116.2 pcf	15.0%	99.1%	P				
8	06/06/25	36.01.01.	36.01.01.		2	1	8.0 in	131.70 pcf	16.00 pcf	115.7 pcf	13.8%	96.3%	P				
10	06/09/25	36.01.01.1	36.01.01.1	R1	2	1	8.0 in	128.60 pcf	14.40 pcf	114.2 pcf	12.6%	95.0%	FAIL	Low MC	and Retest Failed		
36	06/10/25	36.01.02.	36.01.02.		2	1	8.0 in	119.50 pcf	15.80 pcf	103.7 pcf	15.2%	86.3%	FAIL	Low Dry Den			
37	06/10/25	36.01.02.1	36.01.02.1	R1 OK	2	1	8.0 in	137.50 pcf	17.80 pcf	119.7 pcf	14.9%	99.6%	P		Retest Passed	Extra test	
97	06/11/25	36.02.01.	36.02.01.		3	2	8.0 in	131.20 pcf	17.70 pcf	113.5 pcf	15.6%	96.8%	P				
250	07/07/25	36.03.01.	36.03.01.		3	3	8.0 in	134.70 pcf	18.20 pcf	116.5 pcf	15.6%	99.4%	P				
2	06/06/25	37.01.01.	37.01.01.		2	1	8.0 in	134.40 pcf	17.70 pcf	116.7 pcf	15.2%	97.1%	P				
105	06/11/25	37.02.01.	37.02.01.		3	2	8.0 in	122.20 pcf	14.50 pcf	107.7 pcf	13.5%	91.9%	FAIL	Low MC			
106	06/11/25	37.02.01.1	37.02.01.1	R1	3	2	8.0 in	133.90 pcf	13.40 pcf	120.5 pcf	11.1%	102.8%	FAIL	Low MC	and Retest Failed		
159	06/23/25	37.02.02.	37.02.02.		3	2	8.0 in	137.90 pcf	16.60 pcf	121.3 pcf	13.7%	103.5%	FAIL	Low MC			
196	06/26/25	37.02.03.	37.02.03.		3	2	8.0 in	134.60 pcf	16.00 pcf	118.6 pcf	13.5%	101.2%	FAIL	Low MC			
215	06/27/25	37.02.04.	37.02.04.		3	2	8.0 in	135.10 pcf	17.90 pcf	117.2 pcf	15.3%	100.0%	P				
252	07/08/25	37.03.01.	37.03.01.		3	3	8.0 in	135.70 pcf	17.80 pcf	117.9 pcf	15.1%	100.6%	P				
51	06/10/25	38.01.01.	38.01.01.		3	1	8.0 in	133.70 pcf	18.50 pcf	115.2 pcf	16.1%	98.3%	P				
113	06/12/25	38.02.01.	38.02.01.		2	2	8.0 in	128.40 pcf	15.00 pcf	113.4 pcf	13.2%	94.3%	FAIL	Low MC			
191	06/26/25	38.02.02.	38.02.02.		2	2	8.0 in	132.90 pcf	16.00 pcf	116.9 pcf	13.7%	97.3%	P				
242	07/02/25	38.03.01.	38.03.01.		3	3	8.0 in	133.90 pcf	18.00 pcf	115.9 pcf	15.5%	98.9%	P				
26	06/09/25	39.01.01.	39.01.01.		2	1	8.0 in	134.20 pcf	14.90 pcf	119.3 pcf	12.5%	99.3%	FAIL	Low MC			
47	06/10/25	39.01.02.	39.01.02.		3	1	8.0 in	136.20 pcf	17.00 pcf	119.2 pcf	14.3%	101.7%	FAIL	Low MC			
48	06/10/25	39.01.02.1	39.01.02.1	R1 OK	3	1	8.0 in	135.50 pcf	17.70 pcf	117.8 pcf	15.0%	100.5%	P		Retest Passed		
116	06/12/25	39.02.01.	39.02.01.		2	2	8.0 in	135.20 pcf	15.90 pcf	119.3 pcf	13.3%	99.3%	FAIL	Low MC			
192	06/26/25	39.02.02.	39.02.02.		2	2	8.0 in	132.30 pcf	14.80 pcf	117.5 pcf	12.6%	97.8%	FAIL	Low MC			
200	06/26/25	39.02.02.1	39.02.02.1	R1	2	2	8.0 in	136.60 pcf	15.30 pcf	121.3 pcf	12.6%	100.9%	FAIL	Low MC	and Retest Failed		
213	06/27/25	39.02.03.	39.02.03.		2	2	8.0 in	135.00 pcf	17.90 pcf	117.1 pcf	15.3%	97.4%	P				
244	07/03/25	39.03.01.	39.03.01.		3	3	8.0 in	132.00 pcf	17.50 pcf	114.5 pcf	15.3%	97.7%	P				
35	06/10/25	40.01.01.1	40.01.01.1	R1 OK	2	1	8.0 in	131.50 pcf	17.30 pcf	114.2 pcf	15.1%	95.0%	P		Retest Passed		
34	06/10/25	40.01.10.	40.01.10.		2	1	8.0 in	128.40 pcf	20.80 pcf	107.6 pcf	19.3%	89.5%	FAIL	HighMC			
107	06/11/25	40.02.01.	40.02.01.		2	2	8.0 in	132.40 pcf	15.10 pcf	117.3 pcf	12.9%	97.6%	FAIL	Low MC			
199	06/26/25	40.02.02.	40.02.02.		2	2	8.0 in	137.10 pcf	16.70 pcf	120.4 pcf	13.9%	100.2%	P				
248	07/07/25	40.03.01.	40.03.01.		3	3	8.0 in	138.80 pcf	17.60 pcf								

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- NOTES:
1. CELL D1-D2 IS CONSTRUCTING APPROXIMATELY 8.1 ACRES OF CONSTRUCTED SOIL LINER.
 2. THE TESTING GRID SHOWN ABOVE WAS DESIGNED TO MEET THE MINIMUM NUMBER OF PASSING TESTS PER LIFT. ONE PASSING TEST IS REQUIRED FOR EACH GRID PER LIFT.
 3. FAILED MOISTURE/DENSITY TEST SHALL BE RETESTED. IF THE RETEST FAILS, THE LIMIT OF THE FAILED AREA SHALL BE REWORKED AND TESTED AGAIN.
 4. CONTRACTOR IS RESPONSIBLE FOR COLLECTING AND ANALYZING SHELBY TUBE SAMPLES AFTER CONSTRUCTION. AT LEAST 5 AND UP TO 8 SHELBY TUBES SHALL BE PUSHED FOR LAB ANALYSIS.

ISSUED FOR REVIEW



**COMPACTED SOIL LINER TESTING
GRID**

June 2, 2025

SCS ENGINEERS

14755 Grover Street
Omaha, NE 68144
PH. (402) 884-6202 FAX. (913) 681-0012



Appendix C3

Shelby Tube Laboratory Reports



July 18, 2025

Bryan C. Bross, P.E., R.G.
Klingner & Associates, P.C.
610 N. 4th Street, Suite 100
Burlington, IA 52601
bcb@klingner.com

RE: FINAL LABORATORY TEST RESULTS
DES MOINES COUNTY LANDFILL - DELONG
DES MOINES COUNTY, IOWA

Dear Mr. Bross:

Enclosed are the final laboratory test results for the Des Moines County Landfill – Delong samples requested by Klingner for your project located in Des Moines County, Iowa. Our services included extrusion of Shelby tubes and performing hydraulic conductivity testing. This submission is your notice that the requested services are now completed.

We appreciate this opportunity to be of service to you and look forward to assisting you on future projects. If you have questions or comments concerning this project, please contact me directly at 314-564-8137 or cmb@shanwil.com.

Sincerely,

SHANNON & WILSON

A handwritten signature in cursive script that reads 'Craig Brooks'.

Craig M. Brooks
Laboratory Manager

CMB/cmb

Enc. Hydraulic Conductivity Test Results (6)
Shelby Tube Logs (6)

HYDRAULIC CONDUCTIVITY

Project	Des Moines County Landfill - Delong
Location	Des Moines County, Iowa
Job No.	115619-002
Boring	Liner
Sample	ST-1
Depth (ft)	1.0 - 2.0
Description	Gray and yellow-brown, Fat Clay with Sand (CH).

Date

Tested By	JRZ	7/1/25
Calculated By	JRZ	7/18/25
Checked By	CMB	7/18/25
File	115619-002 Liner ST-1 D5084	
Procedure	ASTM D5084	
Permeant	Deaired Water	

Permeameter No.	14	Standpipe Vol (cm ³ /cm)	Inflow:	1.241	Outflow:	1.239	
Before Test		After Test		Before Test		After Test	
Sample Diameter (in)	2.878	2.861	Tare No.	TG-3	107		
Sample Length (in)	2.154	2.145	Tare Wt. (g)	82.84	82.91		
Sample Area (cm ²)	41.97	41.48	Wet Soil + Tare (g)	257.82	591.24		
Sample Volume (cm ³)	229.62	225.97	Dry Soil + Tare (g)	235.72	516.30		
Sample Wt. (g)	498.55	508.33	Water Content (%)	14.5	17.3		
Wet Density (pcf)	135.5	140.4	Porosity	0.292			
Dry Density (pcf)	118.4	119.7	Pore Volume (CC)	67.09			
Saturation (%)	93.8	116.6	Starting B.P. Saturation (%)	95			
Consolidation (psi)	2 min	5 max	Specific Gravity 2.68 (estimated)				

Read Time			P _{cell}	P _{in}	P _{out}	Readings (cm)		Water	Inflow	Outflow	Storage	Total	i	K @ 20°C
day	hr	min	psi	psi	psi	h _{in}	h _{out}	Temp. °C	PV	PV	PV	PV		cm/s
2	9	4	95.0	93.0	92.0	53.70	68.65	22.6	---	---	---	---	10.1	---
2	10	43	95.0	93.0	92.0	53.15	68.45	23.3					10.1	
2	13	12	95.0	93.0	92.0	52.70	68.20	23.1					10.0	
2	15	52	95.0	93.0	92.0	52.25	68.00	23.0					10.0	
3	6	52	95.0	93.0	92.0	51.00	67.15	24.3					9.9	
3	9	52	95.0	93.0	92.0	51.00	67.15	23.3					9.9	
3	9	53	95.0	93.0	91.0	50.80	67.15	23.3	---	---	---	---	22.7	---
3	15	25	95.0	93.0	91.0	50.50	67.05	23.6					22.7	
7	7	36	95.0	93.0	91.0	47.95	66.15	22.9					22.4	
7	15	6	95.0	93.0	91.0	47.95	66.10	24.3					22.4	
7	15	7	95.0	93.0	90.0	47.95	66.10	24.3	---	---	---	---	35.3	---
8	6	22	95.0	93.0	90.0	47.40	66.10	23.7					35.2	
8	13	52	95.0	93.0	90.0	47.25	66.15	23.7	0.00	0.00	0.00	0.00	35.1	2.9E-09
9	7	12	95.0	93.0	90.0	46.80	66.10	24.3					35.1	
9	13	44	95.0	93.0	90.0	46.65	66.15	22.8	0.00	0.00	0.00	0.00	35.0	3.3E-09
10	7	18	95.0	93.0	90.0	46.20	66.15	24.0					34.9	
10	13	47	95.0	93.0	90.0	46.15	66.15	23.0					34.9	
11	6	39	95.0	93.0	90.0	45.70	66.15	24.0					34.9	
14	8	6	95.0	93.0	91.0	38.70	41.20	23.1	---	---	---	---	25.3	---
14	9	37	95.0	93.0	91.0	38.65	41.35	23.9	0.00	0.00	0.00	0.00	25.2	2.0E-08
14	11	31	95.0	93.0	91.0	38.70	41.45	23.6					25.2	
14	14	8	95.0	93.0	91.0	38.60	41.56	23.4	0.00	0.00	0.00	0.01	25.2	1.2E-08
15	6	46	95.0	93.0	91.0	37.95	41.65	23.7	-0.01	0.00	-0.01	0.01	25.1	6.7E-09
15	12	45	95.0	93.0	91.0	37.80	41.80	23.7	0.00	0.00	0.00	0.01	25.0	7.5E-09
16	7	53	95.0	93.0	91.0	37.35	41.95	24.0	-0.01	0.00	0.00	0.01	24.9	4.7E-09
16	13	29	95.0	93.0	91.0	37.25	42.00	23.4	0.00	0.00	0.00	0.01	24.9	4.0E-09
17	7	22	95.0	93.0	91.0	36.85	42.20	24.2	-0.01	0.00	0.00	0.02	24.7	5.1E-09
17	11	45	95.0	93.0	91.0	36.75	42.25	23.8	0.00	0.00	0.00	0.02	24.7	5.2E-09

Average Hydraulic Conductivity at Completion @ 20°C (m/s) 4.8E-11

Average Hydraulic Conductivity at Completion @ 20°C (cm/s) 4.8E-09

HYDRAULIC CONDUCTIVITY

Project	Des Moines County Landfill - Delong
Location	Des Moines County, Iowa
Job No.	115619-002
Boring	Liner
Sample	ST-2
Depth (ft)	1.0 - 2.0
Description	Gray and yellow-brown, Fat Clay with Sand (CH).

Date

Tested By	JRZ	7/1/25
Calculated By	JRZ	7/11/25
Checked By	DPM	7/11/25
File	115619-002 Liner ST-2 D5084	
Procedure	ASTM D5084	
Permeant	Deaired Water	

Permeameter No.	13	Standpipe Vol (cm ³ /cm)	Inflow:	1.251	Outflow:	1.235
Before Test		After Test	Before Test		After Test	
Sample Diameter (in)	2.862	2.851	Tare No.	BG	58	
Sample Length (in)	2.051	2.005	Tare Wt. (g)	83.40	82.92	
Sample Area (cm ²)	41.50	41.19	Wet Soil + Tare (g)	184.87	572.73	
Sample Volume (cm ³)	216.22	209.75	Dry Soil + Tare (g)	170.58	504.56	
Sample Wt. (g)	478.77	489.81	Water Content (%)	16.4	16.2	
Wet Density (pcf)	138.2	145.7	Porosity	0.290		
Dry Density (pcf)	118.7	125.4	Pore Volume (CC)	62.73		
Saturation (%)	107.5	130.0	Starting B.P. Saturation (%)	96		
Consolidation (psi)	2 min	4 max	Specific Gravity 2.68 (estimated)			

Read Time	P _{cell}	P _{in}	P _{out}	Readings (cm)	Water	Inflow	Outflow	Storage	Total	i	K @ 20°C
day hr min	psi	psi	psi	h _{in}	h _{out}	Temp. °C	PV	PV	PV	PV	cm/s
2 9 8	95.0	93.0	92.0	56.20	68.75	22.9	---	---	---	---	11.1
2 10 44	95.0	93.0	92.0	56.20	68.95	23.2		0.00	0.00	0.00	11.1
2 13 13	95.0	93.0	92.0	56.15	69.10	23.1	0.00	0.00	0.00	0.01	11.0
2 15 53	95.0	93.0	92.0	56.00	69.20	23.3	0.00	0.00	0.00	0.01	11.0
3 6 54	95.0	93.0	92.0	55.25	69.95	24.2	-0.01	0.01	0.00	0.02	10.7
3 13 12	95.0	93.0	92.0	55.15	70.20	23.2	0.00	0.00	0.00	0.03	10.6
3 15 26	95.0	93.0	92.0	55.10	70.25	23.4	0.00	0.00	0.00	0.03	10.6
7 7 37	95.0	93.0	92.0	53.20	71.55	23.0	-0.04	0.03	-0.01	0.06	10.0
7 15 8	95.0	93.0	92.0	53.05	71.70	23.7	0.00	0.00	0.00	0.06	9.9
7 15 13	95.0	93.0	91.0	53.05	71.70	23.7	---	---	---	---	23.4
8 6 24	95.0	93.0	91.0	52.50	72.10	23.8	-0.01	0.01	0.00	0.07	23.3
8 13 53	95.0	93.0	91.0	52.40	72.30	23.4	0.00	0.00	0.00	0.07	23.2
9 7 13	95.0	93.0	91.0	51.85	72.65	24.3	-0.01	0.01	0.00	0.08	23.0
9 13 45	95.0	93.0	91.0	51.80	72.80	22.9	0.00	0.00	0.00	0.08	23.0
10 13 48	95.0	93.0	91.0	51.20	73.20	23.1	-0.01	0.01	0.00	0.09	22.8

Average Hydraulic Conductivity at Completion @ 20°C (m/s) 6.8E-11

Average Hydraulic Conductivity at Completion @ 20°C (cm/s) 6.8E-09

HYDRAULIC CONDUCTIVITY

Project	Des Moines County Landfill - Delong
Location	Des Moines County, Iowa
Job No.	115619-002
Boring	Liner
Sample	ST-3
Depth (ft)	1.0 - 2.0
Description	Gray and yellow-brown, Fat Clay with Sand (CH).

Date

Tested By	JRZ	7/1/25
Calculated By	JRZ	7/14/25
Checked By	<i>DPM</i>	7/17/25
File	115619-002 Liner ST-3 D5084	
Procedure	ASTM D5084	
Permeant	Deaired Water	

Permeameter No.	14	Standpipe Vol (cm ³ /cm)	Inflow:	1.241	Outflow:	1.239	
Before Test		After Test		Before Test		After Test	
Sample Diameter (in)	2.873	2.854	Tare No.	115			199
Sample Length (in)	2.071	2.052	Tare Wt. (g)	81.94			84.98
Sample Area (cm ²)	41.82	41.27	Wet Soil + Tare (g)	263.76			576.27
Sample Volume (cm ³)	220.01	215.12	Dry Soil + Tare (g)	241.50			507.27
Sample Wt. (g)	481.95	491.29	Water Content (%)	14.0			16.3
Wet Density (pcf)	136.7	142.5	Porosity	0.283			
Dry Density (pcf)	120.0	122.5	Pore Volume (CC)	62.19			
Saturation (%)	94.9	119.9	Starting B.P. Saturation (%)	95			
Consolidation (psi)	2 min	3 max	Specific Gravity				2.68 (estimated)

Read Time	P _{cell}	P _{in}	P _{out}	Readings (cm)	Water	Inflow	Outflow	Storage	Total	i	K @ 20°C
day hr min	psi	psi	psi	h _{in}	h _{out}	Temp. °C	PV	PV	PV	PV	cm/s
2 9 15	95.0	93.0	92.0	53.80	69.60	23.1	---	---	---	---	10.4
2 10 47	95.0	93.0	92.0	53.85	69.80	23.6					10.3
2 13 17	95.0	93.0	92.0	53.75	70.00	23.4	0.00	0.00	0.00	0.00	10.3
2 15 55	95.0	93.0	92.0	53.60	70.20	23.8	0.00	0.00	0.00	0.01	10.2
3 6 57	95.0	93.0	92.0	52.85	70.90	24.2	-0.01	0.01	0.00	0.02	9.9
3 13 15	95.0	93.0	92.0	52.60	71.15	23.8	0.00	0.00	0.00	0.03	9.9
3 15 28	95.0	93.0	92.0	52.55	71.25	23.6	0.00	0.00	0.00	0.03	9.8
7 7 40	95.0	93.0	92.0	50.90	72.35	23.3	-0.03	0.02	-0.01	0.05	9.3
7 15 10	95.0	93.0	92.0	50.80	72.45	24.4	0.00	0.00	0.00	0.05	9.3
7 15 19	95.0	93.0	91.0	50.80	72.45	24.4	---	---	---	---	22.6
8 6 27	95.0	93.0	91.0	50.35	72.85	24.2	-0.01	0.01	0.00	0.06	22.5
8 13 57	95.0	93.0	91.0	50.25	73.10	23.4	0.00	0.00	0.00	0.07	22.4
9 7 16	95.0	93.0	91.0	49.80	73.20	24.2	-0.01	0.00	0.00	0.07	22.3
9 13 48	95.0	93.0	91.0	49.70	73.55	23.0	0.00	0.01	0.00	0.07	22.2
10 7 19	95.0	93.0	91.0	49.25	73.85	23.9	-0.01	0.01	0.00	0.08	22.1
10 13 52	95.0	93.0	91.0	49.20	74.00	23.3	0.00	0.00	0.00	0.08	22.0
11 6 42	95.0	93.0	91.0	48.75	74.20	23.9	-0.01	0.00	0.00	0.09	21.9
11 13 31	95.0	93.0	91.0	48.65	74.40	23.5	0.00	0.00	0.00	0.09	21.9

Average Hydraulic Conductivity at Completion @ 20°C (m/s)	6.7E-11
Average Hydraulic Conductivity at Completion @ 20°C (cm/s)	6.7E-09

HYDRAULIC CONDUCTIVITY

Project	Des Moines County Landfill - Delong
Location	Des Moines County, Iowa
Job No.	115619-002
Boring	Liner
Sample	ST-4
Depth (ft)	1.0 - 2.0
Description	Gray and yellow-brown, Fat Clay with Sand (CH).

Date

Tested By	JRZ	7/1/25
Calculated By	JRZ	7/18/25
Checked By	CWB	7/18/25
File	115619-002 Liner ST-4 D5084	
Procedure	ASTM D5084	
Permeant	Deaired Water	

Permeameter No.	16	Standpipe Vol (cm ³ /cm)	Inflow:	1.241	Outflow:	1.238	
Before Test		After Test		Before Test		After Test	
Sample Diameter (in)	2.870	2.859		Tare No.	505	97	
Sample Length (in)	1.252	1.231		Tare Wt. (g)	82.96	82.79	
Sample Area (cm ²)	41.74	41.42		Wet Soil + Tare (g)	265.51	378.54	
Sample Volume (cm ³)	132.73	129.50		Dry Soil + Tare (g)	245.50	332.14	
Sample Wt. (g)	283.32	295.75		Water Content (%)	12.3	18.6	
Wet Density (pcf)	133.2	142.5		Porosity	0.291		
Dry Density (pcf)	118.6	120.1		Pore Volume (CC)	38.60		
Saturation (%)	80.5	127.3		Starting B.P. Saturation (%)	96		
Consolidation (psi)	2 min	4 max		Specific Gravity 2.68 (estimated)			

Read Time	P _{cell}	P _{in}	P _{out}	Readings (cm)	Water	Inflow	Outflow	Storage	Total	i	K @ 20°C
day hr min	psi	psi	psi	h _{in}	h _{out}	Temp. °C	PV	PV	PV	PV	cm/s
9 14 17	95.0	93.0	91.0	60.05	64.85	23.2	---	---	---	---	42.8
10 7 23	95.0	93.0	91.0	57.25	65.55	23.5	-0.09	0.02	-0.07	0.02	41.7
10 13 52	95.0	93.0	91.0	56.40	65.90	23.5	-0.03	0.01	-0.02	0.03	41.3
11 6 42	95.0	93.0	91.0	54.20	66.60	23.6	-0.07	0.02	-0.05	0.06	40.4
11 13 31	95.0	93.0	91.0	53.50	66.95	24.3	-0.02	0.01	-0.01	0.07	40.0
14 8 7	95.0	93.0	91.0	53.35	62.20	23.3	---	---	---	---	41.5
14 9 38	95.0	93.0	91.0	52.60	63.05	23.9	-0.02	0.03	0.00	0.09	41.0
14 11 28	95.0	93.0	91.0	51.80	63.80	23.6	-0.03	0.02	0.00	0.12	40.5
14 14 8	95.0	93.0	91.0	51.75	64.70	23.6	0.00	0.03	0.03	0.15	40.2
15 6 48	95.0	93.0	91.0	45.80	69.00	23.8	-0.19	0.14	-0.05	0.29	37.0
15 8 12	95.0	93.0	92.0	60.25	34.70	23.3	---	---	---	---	30.2
15 12 47	95.0	93.0	92.0	59.65	38.25	23.5	-0.02	0.11	0.09	0.40	28.9
16 7 55	95.0	93.0	92.0	57.20	40.60	23.9	-0.08	0.08	0.00	0.47	27.4
16 13 28	95.0	93.0	92.0	56.50	41.10	23.7	-0.02	0.02	0.00	0.49	27.0
17 7 24	95.0	93.0	92.0	54.50	42.70	23.9	-0.06	0.05	-0.01	0.54	25.8
17 11 49	95.0	93.0	92.0	54.10	43.10	23.7	-0.01	0.01	0.00	0.55	25.6

Average Hydraulic Conductivity at Completion @ 20°C (m/s)	3.0E-10
Average Hydraulic Conductivity at Completion @ 20°C (cm/s)	3.0E-08

HYDRAULIC CONDUCTIVITY

Project	Des Moines County Landfill - Delong
Location	Des Moines County, Iowa
Job No.	115619-002
Boring	Liner
Sample	ST-5
Depth (ft)	1.0 - 2.0
Description	Gray and yellow-brown, Fat Clay with Sand (CH).

Date

Tested By	JRZ	7/1/25
Calculated By	JRZ	7/10/25
Checked By	<i>JPm</i>	7/10/2025
File	115619-002 Liner ST-5 D5084	
Procedure	ASTM D5084	
Permeant	Deaired Water	

Permeameter No.	16	Standpipe Vol (cm ³ /cm)	Inflow:	1.241	Outflow:	1.238
Before Test		After Test		Before Test		After Test
Sample Diameter (in)	2.878	2.862		Tare No.	106	109
Sample Length (in)	1.930	1.909		Tare Wt. (g)	83.15	82.78
Sample Area (cm ²)	41.97	41.50		Wet Soil + Tare (g)	292.55	527.71
Sample Volume (cm ³)	205.75	201.25		Dry Soil + Tare (g)	261.05	459.44
Sample Wt. (g)	440.52	444.93		Water Content (%)	17.7	18.1
Wet Density (pcf)	133.6	138.0		Porosity	0.321	
Dry Density (pcf)	113.5	116.8		Pore Volume (CC)	66.10	
Saturation (%)	100.3	112.5		Starting B.P. Saturation (%)	95	
Consolidation (psi)	2	min	4	max	Specific Gravity 2.68 (estimated)	

Read Time	P _{cell}	P _{in}	P _{out}	Readings (cm)	Water	Inflow	Outflow	Storage	Total	i	K @ 20°C
day hr min	psi	psi	psi	h _{in}	h _{out}	Temp. °C	PV	PV	PV	PV	cm/s
2 9 37	95.0	93.0	92.0	54.20	65.20	23.3	---	---	---	---	12.1
2 10 49	95.0	93.0	92.0	54.20	65.15	23.4					12.1
2 13 20	95.0	93.0	92.0	54.05	65.05	23.6					12.1
2 15 57	95.0	93.0	92.0	53.95	65.05	24.0					12.1
3 7 4	95.0	93.0	92.0	53.55	64.80	23.8					12.1
3 10 23	95.0	93.0	91.0	53.55	65.00	23.0	---	---	---	---	26.4
3 13 24	95.0	93.0	91.0	53.40	65.10	23.5	0.00	0.00	0.00	0.00	26.3
3 15 29	95.0	93.0	91.0	53.35	65.15	24.2	0.00	0.00	0.00	0.00	26.3
7 7 41	95.0	93.0	91.0	51.25	66.05	23.3	-0.04	0.02	-0.02	0.02	25.7
7 15 10	95.0	93.0	91.0	51.10	66.20	24.6	0.00	0.00	0.00	0.02	25.6
8 13 58	95.0	93.0	91.0	50.60	66.35	23.5	-0.01	0.00	0.00	0.03	25.5
9 7 15	95.0	93.0	91.0	50.20	66.40	24.0	-0.01	0.00	0.00	0.03	25.4
9 13 48	95.0	93.0	91.0	50.10	66.50	23.5	0.00	0.00	0.00	0.03	25.4

Average Hydraulic Conductivity at Completion @ 20°C (m/s)

Average Hydraulic Conductivity at Completion @ 20°C (cm/s)

4.6E-11

4.6E-09

HYDRAULIC CONDUCTIVITY

Project	Des Moines County Landfill - Delong
Location	Des Moines County, Iowa
Job No.	115619-002
Boring	Liner
Sample	ST-6
Depth (ft)	1.0 - 2.0
Description	Gray and yellow-brown, Fat Clay with Sand (CH).

Date

Tested By	JRZ	7/1/25
Calculated By	JRZ	7/14/25
Checked By	<i>DPM</i>	7/14/25
File	115619-002 Liner ST-6 D5084	
Procedure	ASTM D5084	
Permeant	Deaired Water	

Permeameter No.	17	Standpipe Vol (cm ³ /cm)	Inflow:	1.240	Outflow:	1.240
Before Test		After Test	Before Test		After Test	
Sample Diameter (in)	2.863	2.851	Tare No.	112	71	
Sample Length (in)	2.114	2.109	Tare Wt. (g)	83.00	85.70	
Sample Area (cm ²)	41.53	41.19	Wet Soil + Tare (g)	271.61	577.14	
Sample Volume (cm ³)	223.02	220.63	Dry Soil + Tare (g)	254.96	500.56	
Sample Wt. (g)	484.77	491.44	Water Content (%)	9.7	18.5	
Wet Density (pcf)	135.6	139.0	Porosity	0.261		
Dry Density (pcf)	123.7	117.3	Pore Volume (CC)	58.10		
Saturation (%)	73.7	116.3	Starting B.P. Saturation (%)	95		
Consolidation (psi)	2 min	4 max	Specific Gravity <u>2.68</u> (estimated)			

Read Time	P _{cell}	P _{in}	P _{out}	Readings (cm)	Water	Inflow	Outflow	Storage	Total	i	K @ 20°C
day hr min	psi	psi	psi	h _{in} h _{out}	Temp. °C	PV	PV	PV	PV		cm/s
2 9 4	95.0	93.0	92.0	56.00 71.00	23.2	---	---	---	---	10.3	---
2 10 50	95.0	93.0	92.0	56.15 71.20	23.6					10.3	
2 13 21	95.0	93.0	92.0	56.10 71.40	23.8	0.00	0.00	0.00	0.00	10.3	3.7E-08
2 15 58	95.0	93.0	92.0	56.10 71.55	24.2		0.00	0.00	0.01	10.2	2.1E-08
3 7 5	95.0	93.0	92.0	56.45 71.50	23.2					10.3	
3 10 1	95.0	93.0	92.0	56.25 71.55	24.4	0.00	0.00	0.00	0.01	10.3	3.1E-08
3 10 2	95.0	93.0	91.0	56.25 71.60	24.4	---	---	---	---	23.4	---
3 13 23	95.0	93.0	91.0	56.10 71.85	23.2	0.00	0.01	0.00	0.01	23.3	1.9E-08
3 15 30	95.0	93.0	91.0	56.00 72.00	23.9	0.00	0.00	0.00	0.02	23.2	1.9E-08
7 7 42	95.0	93.0	91.0	55.70 72.60	23.6	-0.01	0.01	0.00	0.03	23.1	1.7E-09
8 13 59	95.0	93.0	91.0	55.65 72.65	24.0	0.00	0.00	0.00	0.03	23.0	5.4E-10
9 7 16	95.0	93.0	91.0	55.00 73.05	23.6	-0.01	0.01	0.00	0.04	22.9	1.0E-08
9 13 49	95.0	93.0	91.0	54.90 73.30	23.8	0.00	0.01	0.00	0.04	22.8	8.9E-09
10 7 24	95.0	93.0	91.0	54.45 73.60	23.0	-0.01	0.01	0.00	0.05	22.6	7.2E-09
10 13 53	95.0	93.0	91.0	54.35 73.80	23.7	0.00	0.00	0.00	0.06	22.6	7.8E-09
11 6 43	95.0	93.0	91.0	54.00 74.05	23.2	-0.01	0.01	0.00	0.06	22.5	6.0E-09

Average Hydraulic Conductivity at Completion @ 20°C (m/s)	7.5E-11
Average Hydraulic Conductivity at Completion @ 20°C (cm/s)	7.5E-09



Appendix D

Geosynthetics Installation Documentation



Appendix D1

Geomembrane Material Inventory Records



Product: 60-HD-11-BLK-BLK-GRI-STD-24.00
Project : Des Moines Landfill, IA
Customer: Texas Environmental Plastics, Ltd.
Cust PO: 202507

QC'd By: *Malkesh Patel*
Date: May 8, 2025

We hereby certify the following test results for the above referenced product/project :

Count	Roll Number	Area (sq ft)	Gross Weight (lb)	Thick ness MAV (mil)	Thick ness MIN (mil)	Asperity Height (mil)		Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Punct Resist (lb)	Density (g/cc)	Carbon Black (%)	CB Disp (Views in Cat 1 or 2)	Resin OIT (Minute)	Resin Lot #
				ASTM D 5994	ASTM D 5994	ASTM D 7466		ASTM D 6693		ASTM D 6693		ASTM D 6693		ASTM D 6693		ASTM D 1004		ASTM D 4833	ASTM D 1505	ASTM D 4218	ASTM D 5596	ASTM D 3895	
						Side A	Side B	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD						
01	3119008310	12,000.00	4032	57	53	34	33	157	161	17	15	183	152	444	339	53	56	148	0.948	2.6	10	220	25B1086
02	3119008311	12,000.00	4028	57	55	31	30	157	161	17	15	183	152	444	339	53	56	148	0.948	2.6	10	220	25B1086
03	3119008312	12,000.00	4000	58	57	31	31	157	161	17	15	183	152	444	339	53	56	148	0.948	2.6	10	220	25B1086
04	3119008313	12,000.00	4002	60	57	34	34	157	161	17	15	183	152	444	339	53	56	148	0.948	2.6	10	220	25B1086
05	3119008314	12,000.00	4005	57	54	33	32	164	169	17	15	190	166	444	425	53	58	148	0.948	2.6	10	220	25B1086
06	3119008315	12,000.00	4000	58	55	33	33	164	169	17	15	190	166	444	425	53	58	148	0.948	2.6	10	220	25B1086
07	3119008316	12,000.00	4020	58	55	30	31	164	169	17	15	190	166	444	425	53	58	148	0.948	2.6	10	220	25B1086
08	3119008317	12,000.00	4032	59	55	31	29	164	169	17	15	190	166	444	425	53	58	148	0.948	2.6	10	220	25B1086
09	3119008318	12,000.00	4030	59	56	30	29	164	167	19	16	205	170	535	470	53	58	148	0.948	2.6	10	220	25B1086
10	3119008319	12,000.00	4020	58	54	28	27	164	167	19	16	205	170	535	470	53	58	148	0.948	2.6	10	220	25B1086
11	3119008320	12,000.00	4030	59	57	24	24	164	167	19	16	205	170	535	470	53	58	148	0.948	2.6	10	220	25B1086
12	3119008321	12,000.00	4016	58	56	23	23	164	167	19	16	205	170	535	470	53	58	148	0.948	2.6	10	220	25B1086



Product: 60-HD-11-BLK-BLK-GRI-STD-24.00
Project : Des Moines Landfill, IA
Customer: Texas Environmental Plastics, Ltd.
Cust PO: 202507

QC'd By: *Malkesh Patel*
Date: May 8, 2025

We hereby certify the following test results for the above referenced product/project :

Count	Roll Number	Area (sq ft)	Gross Weight (lb)	Thick ness MAV (mil)	Thick ness MIN (mil)	Asperity Height (mil)		Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Punct Resist (lb)	Density (g/cc)	Carbon Black (%)	CB Disp (Views in Cat 1 or 2)	Resin OIT (Minute)	Resin Lot #
				ASTM D 5994	ASTM D 5994	ASTM D 7466		ASTM D 6693		ASTM D 6693		ASTM D 6693		ASTM D 6693		ASTM D 1004		ASTM D 4833	ASTM D 1505	ASTM D 4218	ASTM D 5596	ASTM D 3895	
						Side A	Side B	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD						
13	3119008322	12,000.00	4010	59	55	21	23	164	167	19	16	205	170	535	470	53	58	148	0.948	2.6	10	220	25B1086
14	3119008323	12,000.00	4050	58	54	23	23	158	160	18	15	202	151	545	323	52	56	149	0.948	2.3	10	220	25B1086
15	3119008324	12,000.00	4030	58	56	23	20	158	160	18	15	202	151	545	323	52	56	149	0.948	2.3	10	220	25B1086
16	3119008325	12,000.00	4034	59	55	22	22	158	160	18	15	202	151	545	323	52	56	149	0.948	2.3	10	239	25D1013
17	3119008326	12,000.00	4044	58	53	22	23	158	160	18	15	202	151	545	323	52	56	149	0.948	2.3	10	239	25D1013
18	3119008327	12,000.00	4,028	58	56	23	22	157	172	19	16	195	161	515	355	52	56	149	0.948	2.6	10	239	25D1013
19	3119008328	12,000.00	4,046	59	56	21	23	157	172	19	16	195	161	515	355	52	56	149	0.948	2.6	10	239	25D1013
20	3119008329	12,000.00	4,026	58	52	23	22	157	172	19	16	195	161	515	355	52	56	149	0.948	2.6	10	239	25D1013
21	3119008330	12,000.00	4,022	58	55	25	22	157	172	19	16	195	161	515	355	52	56	149	0.948	2.6	10	239	25D1013
22	3119008331	12,000.00	4,018	59	57	23	23	157	172	19	16	195	161	515	355	52	56	149	0.948	2.6	10	239	25D1013
23	3119008332	12,000.00	4,040	59	53	24	22	161	171	17	17	215	193	564	548	53	58	149	0.948	2.7	10	239	25D1013
24	3119008333	12,000.00	4,036	59	56	24	23	161	171	17	17	215	193	564	548	53	58	149	0.948	2.7	10	239	25D1013



Product: 60-HD-11-BLK-BLK-GRI-STD-24.00
Project : Des Moines Landfill, IA
Customer: Texas Environmental Plastics, Ltd.
Cust PO: 202507

QC'd By: *Malkesh Patel*
Date: May 8, 2025

We hereby certify the following test results for the above referenced product/project :

Count	Roll Number	Area (sq ft)	Gross Weight (lb)	Thick ness MAV (mil)	Thick ness MIN (mil)	Asperity Height (mil)		Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Punct Resist (lb)	Density (g/cc)	Carbon Black (%)	CB Disp (Views in Cat 1 or 2)	Resin OIT (Minute)	Resin Lot #
				ASTM D 5994	ASTM D 5994	ASTM D 7466		ASTM D 6693		ASTM D 6693		ASTM D 6693		ASTM D 6693		ASTM D 1004		ASTM D 4833	ASTM D 1505	ASTM D 4218	ASTM D 5596	ASTM D 3895	
						Side A	Side B	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD						
25	3119008334	12,000.00	4,028	60	57	23	22	161	171	17	17	215	193	564	548	53	58	149	0.948	2.7	10	239	25D1013
26	3119008335	12,000.00	4,034	60	58	21	20	161	171	17	17	215	193	564	548	53	58	149	0.948	2.7	10	239	25D1013
27	3119008336	12,000.00	4,030	61	57	23	21	165	167	18	17	209	163	558	399	53	58	149	0.948	2.6	10	239	25D1013
28	3119008337	12,000.00	4,030	59	56	23	21	165	167	18	17	209	163	558	399	53	58	149	0.948	2.6	10	239	25D1013
29	3119008338	12,000.00	4,032	58	56	22	22	165	167	18	17	209	163	558	399	53	58	149	0.948	2.6	10	239	25D1013
30	3119008339	12,000.00	4,012	58	55	23	22	165	167	18	17	209	163	558	399	53	58	149	0.948	2.6	10	239	25D1013
31	3119008340	12,000.00	4,018	58	54	24	24	165	167	18	17	209	163	558	399	53	58	149	0.948	2.6	10	239	25D1013
32	3119008341	12,000.00	4,040	59	56	23	23	160	161	19	16	199	164	533	452	52	58	150	0.948	2.6	10	239	25D1013
33	3119008342	12,000.00	4,016	58	55	23	23	160	161	19	16	199	164	533	452	52	58	150	0.948	2.6	10	239	25D1013
34	3119008343	12,000.00	4,022	58	56	25	25	160	161	19	16	199	164	533	452	52	58	150	0.948	2.6	10	239	25D1013
35	3119008344	12,000.00	4,004	58	56	23	24	160	161	19	16	199	164	533	452	52	58	150	0.948	2.6	10	239	25D1013
36	3119008345	12,000.00	4,006	59	55	24	23	169	172	18	16	211	189	553	541	52	58	150	0.948	2.6	10	239	25D1013



FORMOSA PLASTICS CORPORATION, TEXAS

201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT

TX 77978

PHONE: (888) FPCUSA3

Certificate of Analysis
(CONFIDENTIAL)

CUSTOMER: SKAPS INC.
571 INDUSTRIAL PARKWAY

COMMERCE GA 30529

PRODUCT : FORMOLENE HL3812

RAILCAR FPAX201276

CLEANING/INSPECTION NO: 201276020725

S/O NO : E53A895

CUSTOMER PO : 30131250174

DATE SHIPPED: 4/08/25

LOT NO : 25B1086

WEIGHT (LB) : 192,000.00

CUSTID: FT04342 SPIDM1

DATE OF PROD: 2/08/25

Test	Method	Spec Min	Spec Max	Actual
Melt Index, g/10min	ASTM D1238	0	.1	.077
HLMI, g/10 min.	ASTM D1238	9	15	10.8
Density, g/cm3	ASTM D1505	.935	.939	.9380

Linda Kao

QC SUPERVISOR



Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS

201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT

TX 77978

PHONE: (888) FPCUSA3

Certificate of Analysis (CONFIDENTIAL)

CUSTOMER: SKAPS INC.
571 INDUSTRIAL PARKWAY
COMMERCE GA 30529
PRODUCT : FORMOLENE HL3812
RAILCAR FPAX200036
CLEANING/INSPECTION NO: 200036040225

S/O NO : E53A904
CUSTOMER PO : 30131250174
DATE SHIPPED: 4/15/25
LOT NO : 25D1013
WEIGHT (LB) : 192,450.00
CUSTID: FT04342 SPIDM1
DATE OF PROD: 4/02/25

Test	Method	Spec Min	Spec Max	Actual
Melt Index, g/10min	ASTM D1238	0	.1	.062
HLMI, g/10 min.	ASTM D1238	9	15	10.9
Density, g/cm3	ASTM D1505	.935	.939	.9367

SCS ENGINEERS	
SHOP DRAWING REVIEW	
ENGINEER'S REVIEW	
☒ REVIEWED - NO EXCEPTIONS	☐ REJECTED
☐ REVIEWED - EXCEPTIONS NOTED	☐ REVISE AND RESUBMIT
☐ NOT REVIEWED	☐
REVIEW OF SUBMITTALS IS FOR LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH INFORMATION GIVEN AND DESIGN CONCEPT EXPRESSED IN THE CONTRACT DOCUMENTS. THE REVIEW IS NOT CONDUCTED FOR THE PURPOSE OF DETERMINING ACCURACY AND COMPLETENESS OF OTHER DETAILS SUCH AS DIMENSIONS AND QUANTITIES, OR FOR SUBSTANTIATING INSTRUCTIONS FOR INSTALLATION OR PERFORMANCE OF EQUIPMENT OR SYSTEMS, ALL OF WHICH REMAIN RESPONSIBILITY OF THE CONTRACTOR. REVIEW AND ACCEPTANCE OF SUBMITTALS DOES NOT INDICATE ACCEPTANCE OF CHANGES IN CONTRACT TIME OR COST AND SHALL NOT CONSTITUTE APPROVAL OF SAFETY PRECAUTIONS OR, UNLESS OTHERWISE SPECIFICALLY STATED, OF ANY CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR COORDINATING WORK WITH OTHER TRADES OR THE RESPONSIBILITY OF DEVIATIONS FROM THE CONTRACT DOCUMENT REQUIREMENTS UNLESS THE CONTRACTOR HAS SPECIFICALLY INDICATED ON THE SUBMITTALS OF SUCH DEVIATION.	
BY: <u>Kasi Province</u>	DATE: <u>5/8/2025</u>

Linda Kas

QC SUPERVISOR



Appendix D2

Geomembrane Panel Placement Records

GEOSYNTHETIC PANEL PLACEMENT RECORDSCS Engineers CQA Technician: Clayton DavisChris CalhounClient Name: Des Moines County Solid Waste CommisionSCS Engineers Project Name: Cell D1-D2Project Location: 13758 Washington RdWest Burlington, IA 52655SCS Engineers Project Number: 27224417.00

Date dd-mmm-yy	Time hhmm (24)	Panel Number	Roll Number	Panel Length (feet)	Panel Width (feet)	Panel Location/Comments (Tech #)
22-Jul-25	0807	1	3119008325	283	24	Along east tie at top of slope
22-Jul-25	0830	2	3119008325	205	24	West of panel 1 (P-1)
22-Jul-25	0859	3	3119008319	223	24	West of P-1, South of P-2
22-Jul-25	0908	4	3119008319	153	24	West of P-2
22-Jul-25	0928	5	3119008315	254	24	West of P-3, South of P-4
22-Jul-25	0939	6	3119008315	132	24	West of P-4
22-Jul-25	1003	7	3119008314	282	24	West of P-5
22-Jul-25	1300	8	3119008317	492	24	West of P-7
22-Jul-25	1407	9	3119008318	496	24	West of P-8
22-Jul-25	1600	10	3119008321	486	24	West of P-9
22-Jul-25	1631	11	3119008310	463	24	West of P-10
23-Jul-25	0744	12	3119008316	482	24	West of P-11
23-Jul-25	0819	13	3119008320	474	24	West of P-12
23-Jul-25	0849	14	3119008323	393	24	West of P-13
23-Jul-25	0940	15	3119008341	393	24	West of P-14
23-Jul-25	1023	16	3119008311	303	24	West of P-15
23-Jul-25	1105	17	3119008311	216	24	West of P-16
23-Jul-25	1315	18	3119008311	40	24	West of P-17
23-Jul-25	1326	19	3119008311	75	24	West of P-18, P-17

GEOSYNTHETIC PANEL PLACEMENT RECORDSCS Engineers CQA Technician: Clayton DavisChris CalhounClient Name: Des Moines County Solid Waste CommisionSCS Engineers Project Name: Cell D1-D2Project Location: 13758 Washington RdWest Burlington, IA 52655SCS Engineers Project Number: 27224417.00

Date dd-mmm-yy	Time hhmm (24)	Panel Number	Roll Number	Panel Length (feet)	Panel Width (feet)	Panel Location/Comments (Tech #)
23-Jul-25	1342	20	3119008324	98	24	West of P-19, P-17
23-Jul-25	1355	21	3119008324	140	24	West of P-20, P-16
23-Jul-25	1439	22	3119008324	179	24	West of P-21, P-16
23-Jul-25	1506	23	3119008330	212	24	West of P-22, P-16
23-Jul-25	1545	24	3119008330	244	24	West of P-23
23-Jul-25	1650	25	3119008328	275	24	West of P-24
24-Jul-25	0804	26	3119008324	32	24	North of P-8, East of P-9, West of P-6
24-Jul-25	0808	27	3119008324	29	24	North of P-9, East of P-10, West of P-8
24-Jul-25	1039	28	3119008324	9	24	North of P-11, East of P-12, West of P-10
24-Jul-25	1044	29	3119008324	17	24	North of P-10, East of P-11, West of P-9
29-Jul-25	1327	30	3119008332	322	24	West of P-25, South of P-15
29-Jul-25	1338	31	3119008332	156	24	West of P-30, South of P-15, North of P-32
29-Jul-25	1354	32	3119008339	209	24	West of P-30, South of P-31
29-Jul-25	1403	33	3119008339	283	24	West of P-32
29-Jul-25	1433	34	3119008340	122	24	West of P-31, North of P-32, South of P-15
29-Jul-25	1449	35	3119008340	355	24	West of P-34
29-Jul-25	1510	36	3119008311	50	24	West of P-35
29-Jul-25	1538	37	3119008329	416	24	West of P-36
29-Jul-25	1552	38	3119008329	64	24	West of P-37

GEOSYNTHETIC PANEL PLACEMENT RECORDSCS Engineers CQA Technician: Clayton DavisChris CalhounClient Name: Des Moines County Solid Waste CommisionSCS Engineers Project Name: Cell D1-D2Project Location: 13758 Washington RdWest Burlington, IA 52655SCS Engineers Project Number: 27224417.00

Date dd-mmm-yy	Time hhmm (24)	Panel Number	Roll Number	Panel Length (feet)	Panel Width (feet)	Panel Location/Comments (Tech #)
29-Jul-25	1615	39	3119008326	366	24	West of P-37
29-Jul-25	1643	40	3119008326	123	24	West of P-37
29-Jul-25	1702	41	3119008322	296	24	West of P-39
01-Aug-25	0741	42	3119008322	193	24	West of P-40, P-41
01-Aug-25	0801	43	3119008331	254	24	West of P-41
01-Aug-25	0816	44	3119008331	228	24	West of P-42
01-Aug-25	0832	45	3119008338	241	24	West of P-43
01-Aug-25	0847	46	3119008338	247	24	West of P-44
01-Aug-25	0923	47	3119008343	257	24	West of P-45
01-Aug-25	0941	48	3119008343	264	24	West of P-46
01-Aug-25	0930	49	3119008344	241	24	West of P-47
01-Aug-25	1000	50	3119008344	252	24	West of P-48
01-Aug-25	1041	51	3119008345	274	24	West of P-49
01-Aug-25	1333	52	3119008345	184	24	West of P-50
01-Aug-25	1358	53	3119008312	316	24	West of P-51
01-Aug-25	1412	54	3119008312	174	24	West of P-52
01-Aug-25	1535	55	3119008342	329	24	West of P-53
01-Aug-25	1610	56	3119008342	166	24	West of P-54
02-Aug-25	1632	57	3119008313	303	24	West of P-55

GEOSYNTHETIC PANEL PLACEMENT RECORDSCS Engineers CQA Technician: Clayton DavisChris CalhounClient Name: Des Moines County Solid Waste CommisionSCS Engineers Project Name: Cell D1-D2Project Location: 13758 Washington RdWest Burlington, IA 52655SCS Engineers Project Number: 27224417.00

Date dd-mmm-yy	Time hhmm (24)	Panel Number	Roll Number	Panel Length (feet)	Panel Width (feet)	Panel Location/Comments (Tech #)
02-Aug-25	1640	58	3119008313	184	24	West of P-56
02-Aug-25	0747	59	3119008314	15	24	West of P-58
02-Aug-25	0753	60	3119008314	29	24	South of P-59
02-Aug-25	0800	61	3119008314	37	24	South of P-60
02-Aug-25	0809	62	3119008314	49	24	South of P-61
02-Aug-25	0827	63	3119008314	61	24	South of P-62
02-Aug-25	0828	64	3119008314	100	24	South of P-63
02-Aug-25	0832	65	3119008328	90	24	South of P-64
02-Aug-25	0840	66	3119008328	99	24	South of P-65
02-Aug-25	0903	67	3119008333	117	24	South of P-66
02-Aug-25	0910	68	3119008333	128	24	South of P-67
02-Aug-25	0915	69	3119008333	142	24	South of P-68
02-Aug-25	0937	70	3119008337	147	24	South of P-69
02-Aug-25	0949	71	3119008337	165	24	South of P-70
02-Aug-25	0954	72	3119008337	172	24	South of P-71
02-Aug-25	1013	73	3119008336	170	24	South of P-72
02-Aug-25	1040	74	3119008336	143	24	South of P-73
02-Aug-25	1047	75	3119008336	83	24	South of P-74
02-Aug-25	1058	76	3119008336	25	24	South of P-75

Chris Calhoun

SCS Engineers Project Number: 27224417.00

27224417.00

[illegible]



Appendix D3

Geomembrane Trial Weld Records

TRIAL WELD RECORD

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

SCS Engineers Project Number:

27224417.00

Project Location:

13758 Washington Rd

West Burlington, IA 52655

Specifications:

60

mil

Material Type:

HDPE

	Fusion	Extrusion
Peel (P)	≥ 90 lb/in	≥ 78 lb/in
Shear (S)	≥ 120 lb/in	≥ 120 lb/in

Max # of Failing Tests Allowed per P/S Set:

0 ea

SCS Engineers

CQA Technician:

Clayton Davis

Chris Calhoun

Trial Weld Number	Date dd-mmm-yy	Time hhmm (24)	Ambient Temp (F°)	Installer QC	Seamers Initials	Machine Number	Machine Properties	Weld Type		Test Values (lbs/in)										Pass/ Fail	Material (Top 1st)	Comments
										Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5				
1	22-Jul-25	1300	87	JC	ML	W43	740/5.5	Fusion	P	91	95	99	108	108	98	107	98	93	102	Pass	S/S	
									S	146		142		143		141		141				
2	22-Jul-25	1305	87	JC	TN	W44	740/5.5	Fusion	P	104	118	126	99	104	123	99	107	111	109	Pass	S/S	
									S	147		142		141		142		140				
3	22-Jul-25	1310	87	JC	SK	G56	320/240	Extrusion	P	119		121		118		118		119		Pass	T/T	
									S	153		149		148		151		149				
4	22-Jul-25	1320	87	JC	NL	W23	740/5.5	Fusion	P	122	106	101	118	128	110	119	125	113	123	Pass	S/T	
									S	128		184		136		132		129				
5	22-Jul-25	1326	87	JC	NL	W23	740/5.5	Fusion	P	102	111	104	105	112	109	117	104	103	102	Pass	T/T	
									S	131		127		132		136		135				
6	22-Jul-25	1314	90	JC	ML	W43	740/5.5	Fusion	P	106	101	98	104	121	111	123	114	108	116	Pass	T/T	
									S	153		152		152		153		154				
7	22-Jul-25	1345	90	JC	NL	W23	740/5.5	Fusion	P	107	109	121	119	123	106	115	101	103	114	Pass	S/S	
									S	142		133		136		138		140				
8	23-Jul-25	0805	84	JC	ML	W43	740/5.5	Fusion	P	112	106	118	109	109	113	104	114	126	115	Pass	S/S	
									S	147		139		141		142		140				
9	23-Jul-25	0810	84	JC	ML	W43	740/5.5	Fusion	P	119	121	106	103	114	121	113	107	117	126	Pass	T/T	
									S	138		137		140		138		142				
10	23-Jul-25	0817	84	JC	ML	W43	740/5.5	Fusion	P	104	107	111	117	124	108	106	119	116	99	Pass	S/T	
									S	129		130		131		133		134				
11	23-Jul-25	0825	84	JC	TN	W44	740/5.5	Fusion	P	109	111	116	104	113	117	119	108	117	123	Pass	S/S	
									S	139		140		141		139		140				
12	23-Jul-25	0830	84	JC	TN	W44	740/5.5	Fusion	P	112	116	102	117	113	119	121	118	106	113	Pass	T/T	
									S	129		132		133		134		135				
13	23-Jul-25	0836	84	JC	TN	W44	740/5.5	Fusion	P	114	103	118	116	103	111	119	123	108	116	Pass	S/T	
									S	141		140		139		142		139				
14	23-Jul-25	0842	84	JC	NL	W23	740/5.5	Fusion	P	99	108	101	115	106	113	121	118	114	105	Pass	S/S	
									S	136		137		133		138		137				
15	23-Jul-25	0850	84	JC	NL	W23	740/5.5	Fusion	P	111	121	106	115	101	116	121	114	108	117	Pass	S/T	
									S	141		139		142		140		143				
16	23-Jul-25	0855	84	JC	NL	W23	740/5.5	Fusion	P	119	103	114	110	111	123	107	106	111	116	Pass	T/T	
									S	142		136		138		141		142				
17	23-Jul-25	0902	84	JC	AH	W45	740/5.5	Fusion	P	109	116	122	111	106	119	123	107	118	104	Pass	S/S	
									S	141		142		140		141		139				
18	23-Jul-25	0910	84	JC	AH	W45	740/5.5	Fusion	P	103	123	114	101	113	124	118	126	107	119	Pass	S/T	
									S	136		134		136		138		135				
19	23-Jul-25	0920	84	JC	AH	W45	740/5.5	Fusion	P	107	126	106	119	121	118	114	102	113	104	Pass	T/T	
									S	144		143		140		148		143				
20	23-Jul-25	0926	84	JC	SK	G56	320/240	Extrusion	P	126		121		118		119		120		Pass	T/T	
									S	151		149		148		153		154				
21	23-Jul-25	1304	91	JC	NL	W23	740/5.5	Fusion	P	99	112	106	103	121	108	102	99	116	109	Pass	S/S	
									S	136		137		138		136		139				
22	23-Jul-25	1308	91	JC	NL	W23	740/5.5	Fusion	P	104	117	114	106	105	115	119	123	101	98	Pass	S/T	
									S	137		134		136		138		135				
23	23-Jul-25	1316	91	JC	NL	W23	740/5.5	Fusion	P	106	108	109	113	114	102	117	113	123	108	Pass	T/T	
									S	134		134		131		136		133				

TRIAL WELD RECORD

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

SCS Engineers Project Number:

27224417.00

Project Location:

13758 Washington Rd

West Burlington, IA 52655

Specifications:

60

mil

Material Type:

HDPE

	Fusion	Extrusion
Peel (P)	≥ 90 lb/in	≥ 78 lb/in
Shear (S)	≥ 120 lb/in	≥ 120 lb/in

Max # of Failing Tests Allowed per P/S Set:

0 ea

SCS Engineers

CQA Technician:

Clayton Davis

Chris Calhoun

Trial Weld Number	Date dd-mmm-yy	Time hhmm (24)	Ambient Temp (F°)	Installer QC	Seamers Initials	Machine Number	Machine Properties	Weld Type		Test Values (lbs/in)										Pass/ Fail	Material (Top 1st)	Comments
										Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5				
24	23-Jul-25	1301	91	JC	ML	W43	740/5.5	Fusion	P	105	111	104	116	99	103	121	119	122	117	Pass	S/S	
									S	136		132		133		134		130				
25	23-Jul-25	1309	91	JC	ML	W43	740/5.5	Fusion	P	119	121	101	100	99	114	113	118	101	113	Pass	S/T	
									S	137		135		136		137		141				
26	23-Jul-25	1314	91	JC	ML	W43	740/5.5	Fusion	P	103	104	108	99	111	121	110	103	116	118	Pass	T/T	
									S	128		130		131		130		136				
27	23-Jul-25	1315	91	JC	TN	W44	740/5.5	Fusion	P	100	99	101	106	104	110	111	109	117	113	Pass	S/S	
									S	136		132		134		140		139				
28	23-Jul-25	1319	91	JC	TN	W44	740/5.5	Fusion	P	102	113	119	106	114	104	99	107	106	119	Pass	S/T	
									S	133		132		134		133		135				
29	23-Jul-25	1326	91	JC	TN	W44	740/5.5	Fusion	P	110	119	111	101	113	102	117	123	112	102	Pass	T/T	
									S	139		141		142		140		139				
30	23-Jul-25	1309	91	JC	AH	W45	740/5.5	Fusion	P	112	103	99	107	116	104	114	118	119	118	Pass	S/S	
									S	139		140		138		141		146				
31	23-Jul-25	1316	91	JC	AH	W45	740/5.5	Fusion	P	98	103	98	107	161	161	110	102	119	120	Pass	S/T	
									S	139		140		139		140		141				
32	23-Jul-25	1323	91	JC	AH	W45	740/5.5	Fusion	P	117	106	113	123	114	113	109	116	112	120	Pass	T/T	
									S	136		142		142		139		140				
33	23-Jul-25	1318	91	JC	SK	G56	320/240	Extrusion	P	122		123		118		126		120		Pass	T/T	
									S	154		149		151		148		150				
34	24-Jul-25	0750	88	JC	SK	G56	320/240	Extrusion	P	131		129		130		136		134		Pass	T/T	
									S	146		142		143		144		142				
35	24-Jul-25	0745	88	JC	ML	W43	740/5.5	Fusion	P	109	118	106	121	117	104	113	116	111	114	Pass	S/S	
									S	139		140		138		141		140				
36	24-Jul-25	0759	88	JC	ML	G44	320/240	Extrusion	P	133		136		135		129		130		Pass	T/T	
									S	146		144		142		146		141				
37	24-Jul-25	1253	90	JC	SK	G56	320/240	Extrusion	P	136		130		132		134		135		Pass	T/T	
									S	152		148		146		149		150				
38	24-Jul-25	1249	90	JC	ML	W43	740/5.5	Fusion	P	109	104	111	121	110	101	116	105	114	107	Pass	S/S	
									S	142		143		140		141		139				
39	24-Jul-25	1230	90	JC	ML	G44	320/240	Extrusion	P	129		131		130		132		134		Pass	T/T	
									S	151		152		149		148		150				
40	25-Jul-25	0745	88	JC	SK	G56	320/240	Extrusion	P	128		126		132		131		130		Pass	T/T	
									S	143		142		143		146		148				
41	25-Jul-25	0755	88	JC	ML	G44	320/240	Extrusion	P	131		132		138		135		130		Pass	T/T	
									S	138		136		139		140		141				
42	25-Jul-25	1256	88	JC	SK	G56	320/240	Extrusion	P	126		129		137		131		130		Pass	T/T	
									S	139		140		141		137		136				
43	25-Jul-25	1259	88	JC	ML	G44	320/240	Extrusion	P	132		131		136		134		136		Pass	T/T	
									S	141		146		148		145		143				
44	28-Jul-25	1015	90	JC	SK	G56	320/240	Extrusion	P	136		134		138		136		137		Pass	T/T	
									S	144		145		138		137		139				
45	25-Jul-25	1245	90	JC	SK	G56	320/240	Extrusion	P	134		132		136		133		138		Pass	T/T	
									S	139		140		142		143		144				
46	24-Jul-25	0715	88	JC	ML	W43	740/5.5	Fusion	P	109	101	121	116	104	113	100	99	114	108	Pass	T/T	
									S	137		140		141		143		139				

TRIAL WELD RECORD

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

SCS Engineers Project Number:

27224417.00

Project Location:

13758 Washington Rd

West Burlington, IA 52655

Specifications:

60

mil

CQA Technician:

Clayton Davis

Chris Calhoun

Material Type:

HDPE

Fusion

Extrusion

Peel (P)

≥ 90 lb/in

≥ 78 lb/in

Shear (S)

≥ 120 lb/in

≥ 120 lb/in

Max # of Failing Tests Allowed per P/S Set:

0 ea

Trial Weld Number	Date dd-mmm-yy	Time hhmm (24)	Ambient Temp (F°)	Installer QC	Seamers Initials	Machine Number	Machine Properties	Weld Type		Test Values (lbs/in)										Pass/ Fail	Material (Top 1st)	Comments
										Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5				
47	24-Jul-25	1305	91	JC	ML	W43	740/5.5	Fusion	P	105	117	108	103	102	111	107	118	101	99	Pass	T/T	
									S	143		141		146		142		143				
48	29-Jul-25	1308	92	JC	ML	W43	740/5.5	Fusion	P	99	106	104	112	107	115	126	121	117	106	Pass	T/T	
									S	142		143		140		142		144				
49	29-Jul-25	1316	92	JC	ML	W43	740/5.5	Fusion	P	108	117	118	106	104	113	112	106	119	123	Pass	S/T	
									S	137		136		135		137		134				
50	29-Jul-25	1331	92	JC	ML	W43	740/5.5	Fusion	P	121	103	113	112	109	104	118	109	117	102	Pass	S/S	
									S	148		149		152		150		151				
51	29-Jul-25	1259	92	JC	NL	W23	740/5.5	Fusion	P	107	114	115	103	115	105	101	99	98	108	Pass	T/T	
									S	129		131		133		132		131				
52	29-Jul-25	1309	92	JC	NL	W23	740/5.5	Fusion	P	116	105	114	123	104	109	123	116	121	119	Pass	S/S	
									S	135		134		136		135		137				
53	29-Jul-25	1322	92	JC	NL	W23	740/5.5	Fusion	P	113	104	110	101	101	117	107	106	98	99	Pass	S/T	
									S	141		140		139		138		141				
54	29-Jul-25	1331	92	JC	TN	W44	740/5.5	Fusion	P	119	101	113	104	107	113	104	116	113	110	Pass	T/T	
									S	153		154		151		153		154				
55	29-Jul-25	1315	92	JC	TN	W44	740/5.5	Fusion	P	100	108	116	99	121	118	107	100	114	119	Pass	S/S	
									S	133		132		131		134		133				
56	29-Jul-25	1301	92	JC	TN	W44	740/5.5	Fusion	P	99	116	103	120	119	105	110	111	99	109	Pass	S/T	
									S	146		146		145		148		143				
57	29-Jul-25	1615	92	JC	AH	W45	740/5.5	Fusion	P	124	109	116	103	117	108	102	109	110	121	Pass	T/T	
									S	136		138		140		139		138				
58	29-Jul-25	1608	92	JC	AH	W45	740/5.5	Fusion	P	102	115	106	108	103	119	113	115	108	122	Pass	S/S	
									S	143		142		139		140		142				
59	29-Jul-25	1551	92	JC	AH	W45	740/5.5	Fusion	P	116	114	121	119	120	110	113	115	108	122	Pass	S/T	
									S	129		130		131		132		130				
60	31-Jul-25	0735	63	JC	SK	G56	320/240	Extrusion	P	132		126		127		129		130		Pass	S/S	
									S	146		142		141		139		140				
61	31-Jul-25	0725	63	JC	ML	G44	320/240	Extrusion	P	118		123		124		126		130		Pass	S/S	
									S	137		139		142		145		146				
62	31-Jul-25	1251	74	JC	SK	G56	320/240	Extrusion	P	119		126		124		125		126		Pass	S/S	
									S	152		149		150		152		153				
63	31-Jul-25	1256	74	JC	ML	G44	320/240	Extrusion	P	127		129		130		131		130		Pass	S/S	
									S	148		146		145		147		149				
64	02-Aug-25	0715	60	JC	ML	W43	740/5.5	Fusion	P	102	101	99	104	113	109	116	123	106	112	Pass	S/S	
									S	137		138		139		140		141				
65	02-Aug-25	0709	60	JC	TN	W44	740/5.5	Fusion	P	114	111	101	110	106	121	118	123	116	113	Pass	S/S	
									S	129		130		131		136		140				
66	02-Aug-25	0721	60	JC	NL	W23	740/5.5	Fusion	P	129	116	118	125	126	123	122	119	118	127	Pass	S/S	
									S	132		137		136		135		139				
67	02-Aug-25	0718	60	JC	AH	W45	740/5.5	Fusion	P	109	99	110	114	126	102	108	123	112	119	Pass	T/T	
									S	141		142		140		141		138				
68	02-Aug-25	0722	60	JC	SK	G56	320/240	Extrusion	P	121		119		123		124		120		Pass	T/T	
									S	131		136		134		135		136				
69	02-Aug-25	0711	60	JC	TN	W44	740/5.5	Fusion	P	101	99	116	104	121	117	109	124	103	107	Pass	S/T	
									S	140		142		141		140		139				

TRIAL WELD RECORD

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

SCS Engineers Project Number:

27224417.00

Project Location:

13758 Washington Rd

West Burlington, IA 52655

Specifications:

60

mil

Material Type:

HDPE

	Fusion	Extrusion
Peel (P)	≥ 90 lb/in	≥ 78 lb/in
Shear (S)	≥ 120 lb/in	≥ 120 lb/in

Max # of Failing Tests Allowed per P/S Set:

0 ea

SCS Engineers

CQA Technician:

Clayton Davis

Chris Calhoun

Trial Weld Number	Date dd-mmm-yy	Time hhmm (24)	Ambient Temp (F°)	Installer QC	Seamers Initials	Machine Number	Machine Properties	Weld Type		Test Values (lbs/in)										Pass/ Fail	Material (Top 1st)	Comments
										Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5				
70	02-Aug-25	0826	60	JC	NL	W23	740/5.5	Fusion	P	120	115	110	119	104	123	131	126	119	126	Pass	S/T	
									S	142		140		141		142		144				
71	02-Aug-25	1315	76	JC	SK	G56	320/240	Extrusion	P	129		134		130		132		133		Pass	T/T	
									S	151		149		148		150		152				
72	02-Aug-25	1307	76	JC	ML	G44	320/240	Extrusion	P	136		134		128		136		138		Pass	T/T	
									S	150		152		151		149		150				
73	02-Aug-25	1305	76	JC	TN	W44	740/5.5	Fusion	P	110	102	126	119	114	118	126	120	128	131	Pass	S/T	
									S	139		132		136		138		140				
74	02-Aug-25	1311	76	JC	NL	W23	740/5.5	Fusion	P	107	111	116	115	121	118	104	109	99	103	Pass	S/T	
									S	128		130		132		131		130				
75	02-Aug-25	1301	76	JC	NL	W23	740/5.5	Fusion	P	123	118	111	101	102	99	105	113	107	118	Pass	T/T	
									S	129		131		134		138		140				
76	01-Aug-25	1256	74	JC	ML	W43	740/5.5	Fusion	P	116	104	119	126	109	113	126	114	103	99	Pass	S/S	
									S	156		155		152		149		151				
77	01-Aug-25	1245	74	JC	NL	W23	740/5.5	Fusion	P	115	104	98	99	106	102	108	110	112	103	Pass	S/S	
									S	132		136		129		128		130				
78	01-Aug-25	1231	74	JC	TN	W44	740/5.5	Fusion	P	105	118	101	117	113	109	126	114	103	99	Pass	S/S	
									S	141		143		142		143		141				
79	01-Aug-25	1256	74	JC	AH	W45	740/5.5	Fusion	P	106	112	112	114	106	104	110	113	101	114	Pass	S/S	
									S	133		136		132		138		133				
80	01-Aug-25	1309	74	JC	ML	W43	740/5.5	Fusion	P	110	103	107	114	115	106	103	108	121	117	Pass	T/T	
									S	146		144		145		146		143				
81	01-Aug-25	1306	74	JC	NL	W23	740/5.5	Fusion	P	99	104	113	118	112	114	115	101	116	121	Pass	T/T	
									S	129		130		132		130		131				
82	01-Aug-25	1312	74	JC	TN	W44	740/5.5	Fusion	P	101	113	103	99	112	102	106	112	110	105	Pass	T/T	
									S	138		140		141		140		139				
83	01-Aug-25	1308	74	JC	AH	W45	740/5.5	Fusion	P	104	100	108	117	99	103	110	114	116	121	Pass	T/T	
									S	143		141		146		145		143				
84	01-Aug-25	1314	74	JC	ML	W43	740/5.5	Fusion	P	121	118	123	110	119	120	122	109	117	122	Pass	S/T	
									S	135		132		136		137		139				
85	01-Aug-25	1312	74	JC	NL	W23	740/5.5	Fusion	P	106	111	117	104	113	106	104	115	123	121	Pass	S/T	
									S	141		143		142		140		141				
86	01-Aug-25	1310	74	JC	TN	W44	740/5.5	Fusion	P	123	127	111	121	124	119	120	118	118	125	Pass	S/T	
									S	153		149		146		142		151				
87	01-Aug-25	1331	74	JC	AH	W45	740/5.5	Fusion	P	114	108	116	123	116	118	126	121	123	128	Pass	S/T	
									S	136		137		140		139		140				
88	01-Aug-25	1305	74	JC	SK	G56	320/240	Extrusion	P	121		123		118		116		120		Pass	T/T	
									S	141		143		139		140		143				
89	03-Aug-25	0715	68	JC	ML	G44	320/240	Extrusion	P	129		130		136		132		130		Pass	T/T	
									S	149		148		146		147		149				
90	03-Aug-25	1325	75	JC	ML	G44	320/240	Extrusion	P	136		137		140		141		140		Pass	T/T	
									S	151		156		149		152		150				
91	04-Aug-25	0715	64	JC	ML	G44	320/240	Extrusion	P	131		130		129		129		130		Pass	T/T	
									S	146		144		142		145		148				
92	04-Aug-25	0721	64	JC	SK	G56	320/240	Extrusion	P	128		131		132		129		130		Pass	T/T	
									S	141		142		146		147		150				

TRIAL WELD RECORD

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

SCS Engineers Project Number:

27224417.00

Project Location:

13758 Washington Rd

West Burlington, IA 52655

Specifications:

60

mil

Material Type:

HDPE

	Fusion	Extrusion
Peel (P)	≥ 90 lb/in	≥ 78 lb/in
Shear (S)	≥ 120 lb/in	≥ 120 lb/in

Max # of Failing Tests Allowed per P/S Set:

0 ea

SCS Engineers

CQA Technician:

Clayton Davis

Chris Calhoun

Trial Weld Number	Date dd-mm-yy	Time hhmm (24)	Ambient Temp (F°)	Installer QC	Seamers Initials	Machine Number	Machine Properties	Weld Type		Test Values (lbs/in)										Pass/ Fail	Material (Top 1st)	Comments
										Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5				
93	04-Aug-25	1258	74	JC	ML	G44	320/240	Extrusion	P	136		132		130		131		132		Pass	T/T	
									S	151		149		148		150		150				
94	04-Aug-25	1301	74	JC	SK	G56	320/240	Extrusion	P	132		131		130		129		131		Pass	T/T	
									S	148		146		147		146		149				
95	05-Aug-25	0725	65	JC	SK	G56	320/240	Extrusion	P	129		130		131		132		133		Pass	T/T	
									S	141		139		140		144		145				
96	05-Aug-25	0718	65	JC	ML	G44	320/240	Extrusion	P	136		135		140		132		135		Pass	T/T	
									S	142		148		146		150		152				
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Appendix D4

Geomembrane Panel Seam Records

SEAM/NON-DESTRUCTIVE TEST RECORD

N
100000 ft <-- See' Project Information' Worksheet Cell 'G45'

SCS Engineers CQA Technician:

Clayton Davis

Chris Calhoun

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

Project Location:

13758 Washington Rd

West Burlington, IA 52655

SCS Engineers Project Number:

27224417.00

Date of Interest

dd-mmm-yy

Note if blank will consider all dates.

Max Pressure Drop =

4.00 psi

Elapsed Test Interval=

5.0 min

= No of Passed Tests

= No of Failed Tests

Seaming Information												These columns Intentionally Left Blank				Non-Destructive Testing Information									
Date	Time	Seam Numbers			Seam Length	Seamer Initials	Machine Number	Trial Weld #	Direction Seamed	Destruct Number	Material (Top 1st)					Date Tested	Addn'l Test #'s	Tester Initials	Pressure			Time [hhmm (24)]		P/F	Vacuum Box P/F
dd-mmm-yy	hhmm (24)																		Start	End	+/-	Start	End		
22-Jul-25	1330	P-3	P-5		232 ft	ML	W43	1	NORTH	DS-1	S/S					22-Jul-25	2	MV	30	30	0	1443	1448	Pass	
22-Jul-25	1338	P-1	P-3		217 ft	TN	W44	2	NORTH		S/S					22-Jul-25		MV	30	30	0	1408	1413	Pass	
22-Jul-25	1335	P-1	T-1		16 ft	NL	W23	4	SOUTH		S/T					22-Jul-25		MV	30	30	0	1354	1359	Pass	
22-Jul-25	1340	P-1	T-1		103 ft	NL	W23	4	SOUTH		S/T					22-Jul-25	1	MV	30	30	0	1400	1405	Pass	
22-Jul-25	1355	P-2	P-5		8 ft	ML	W43	1	NORTH		S/S					22-Jul-25		MV	30	30	0	1444	1449	Pass	
22-Jul-25	1406	P-2	P-4		19 ft	ML	W43	1	NORTH		S/S					22-Jul-25	3	MV	30	30	0	1505	1510	Pass	
22-Jul-25	1423	P-1	P-2		60 ft	TN	W44	2	NORTH		S/S					22-Jul-25		NV	30	30	0	1451	1456	Pass	
22-Jul-25	1402	P-1	T-1		137 ft	SK	G56	3	NORTH		T/T					22-Jul-25		MV							Pass
22-Jul-25	1504	P-5	P-7		254 ft	TN	W44	2	NORTH	DS-2	S/S					22-Jul-25		MV	30	30	0	1616	1621	Pass	
22-Jul-25	1552	P-4	P-7		14 ft	TN	W44	2	NORTH		S/S					22-Jul-25		MV	30	30	0	1600	1605	Pass	
22-Jul-25	1618	P-4	P-6		113 ft	TN	W44	6	NORTH	DS-3	T/T					22-Jul-25	8	MV	30	30	0	1800	1805	Pass	
22-Jul-25	1524	P-5	P-4		29 ft	ML	W43	6	EAST		T/T					22-Jul-25		MV	30	30	0	1533	1538	Pass	
22-Jul-25	1513	P-3	P-2		24 ft	ML	W43	6	EAST		T/T					22-Jul-25	4	MV	30	30	0	1522	1527	Pass	
22-Jul-25	1535	P-7	P-6		24 ft	ML	W43	7	EAST		S/S					22-Jul-25		MV	30	30	0	1545	1550	Pass	
22-Jul-25	1450	P-7	P-8		282 ft	NL	W23	7	NORTH	DS-4	S/S					22-Jul-25		MV	30	30	0	1623	1628	Pass	
22-Jul-25	1610	P-6	P-8		170 ft	NL	W23	7	NORTH		S/S					22-Jul-25	10	MV	30	30	0	1601	1606	Pass	
22-Jul-25	1619	P-8	P-9		460 ft	ML	W23	1	NORTH		S/S					22-Jul-25	14	MV	30	30	0	1803	1808	Pass	
22-Jul-25	1700	P-9	P-10		458 ft	NL	W23	7	NORTH	DS-8	S/S					23-Jul-25	13	MV	30	30	0	723	0728	Pass	
22-Jul-25	1746	P-10	P-11		460 ft	TN	W44	2	NORTH		S/S					23-Jul-25		MV	30	30	0	720	0725	Pass	
23-Jul-25	0829	P-11	P-12		433 ft	ML	W43	8	NORTH	DS-7	S/S					24-Jul-25		MV	30	30	0	838	0843	Pass	
23-Jul-25	0830	P-12	P-13		429 ft	TN	W44	11	NORTH		S/S					24-Jul-25	16	MV	30	30	0	829	0834	Pass	
23-Jul-25	0904	P-13	P-14		420 ft	NL	W23	14	NORTH	DS-6	S/S					24-Jul-25	15	MV	30	30	0	822	0827	Pass	
23-Jul-25	1025	P-14	P-15		393 ft	TN	W44	11	NORTH		S/S					24-Jul-25		MV	30	30	0	813	0818	Pass	
23-Jul-25	1102	P-15	P-16		303 ft	NL	W23	14	NORTH	DS-5	S/S					24-Jul-25		MV	30	30	0	801	0806	Pass	
23-Jul-25	1117	P-16	P-17		215 ft	ML	W43	8	NORTH		S/S					24-Jul-25		MV	30	30	0	726	0731	Pass	
23-Jul-25	1424	P-21	P-20		98 ft	NL	W23	21	SOUTH		S/S					23-Jul-25		MV	30	30	0	1539	1544	Pass	

SEAM/NON-DESTRUCTIVE TEST RECORD

N
100000 ft <-- See 'Project Information' Worksheet Cell 'G45'

SCS Engineers CQA Technician:

Clayton Davis

Chris Calhoun

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

Project Location:

13758 Washington Rd

West Burlington, IA 52655

SCS Engineers Project Number:

27224417.00

Date of Interest

dd-mmm-yy

Note if blank will consider all dates.

= No of Passed Tests

= No of Failed Tests

Max Pressure Drop =

4.00 psi

Elapsed Test Interval=

5.0 min

Seaming Information												These columns Intentionally Left Blank				Non-Destructive Testing Information											
Date	Time	Seam Numbers			Seam Length	Seamer Initials	Machine Number	Trial Weld #	Direction Seamed	Destruct Number	Material (Top 1st)					Date Tested	Addn'l Test #'s	Tester Initials	Pressure			Time [hhmm (24)]		P/F	Vacuum Box P/F		
dd-mmm-yy	hhmm (24)																		Start	End	+/-	Start	End				
23-Jul-25	1352	P-20	P-19		75 ft	TN	W44	27	SOUTH		S/S					23-Jul-25		MV	30	30	0	1531	1536	Pass			
23-Jul-25	1340	P-19	P-18		40 ft	ML	W43	24	SOUTH		S/S					23-Jul-25		MV	30	30	0	1529	1534	Pass			
23-Jul-25	1455	P-22	P-21		139 ft	ML	W43	24	SOUTH	DS-9	S/S					23-Jul-25		MV	30	30	0	1545	1550	Pass			
23-Jul-25	1521	P-23	P-22		179 ft	NL	W23	21	SOUTH	DS-10	S/S					23-Jul-25	5	MV	30	30	0	1616	1621	Pass			
23-Jul-25	1620	P-24	P-23		210 ft	ML	W43	24	SOUTH		S/S					23-Jul-25	6	MV	30	30	0	1721	1726	Pass			
23-Jul-25	1750	P-18	P-17		42 ft	NL	W23	24	SOUTH		S/S					24-Jul-25		MV	30	30	0	712	0717	Pass			
23-Jul-25	1723	P-19	P-17		39 ft	NL	W23	23	SOUTH		T/T					24-Jul-25	7	MV	30	30	0	1757	1802	Pass			
23-Jul-25	1701	P-20	P-17		39 ft	NL	W23	23	SOUTH		T/T					24-Jul-25		MV	30	30	0	725	0730	Pass			
23-Jul-25	1821	P-21	P-16		36 ft	NL	W23	23	SOUTH		T/T					24-Jul-25		MV	30	30	0	736	0741	Pass			
23-Jul-25	1630	P-22	P-16		36 ft	NL	W23	23	SOUTH		T/T					24-Jul-25		MV	30	30	0	734	0739	Pass			
23-Jul-25	1800	P-23	P-16		39 ft	NL	W23	23	SOUTH		T/T					24-Jul-25		MV	30	30	0	746	0751	Pass			
23-Jul-25	1723	P-24	P-16		40 ft	NL	W23	23	SOUTH		T/T					24-Jul-25		MV	30	30	0	802	0807	Pass			
23-Jul-25	1642	P-25	P-15		36 ft	NL	W23	23	SOUTH		T/T					24-Jul-25		MV	30	30	0	807	0812	Pass			
23-Jul-25	1733	P-25	P-24		243 ft	ML	W43	24	SOUTH		S/S					24-Jul-25		MV	30	30	0	849	0854	Pass			
24-Jul-25	0842	P-8	P-26		24 ft	ML	W43	38	EAST		S/S					24-Jul-25		MV	30	30	0	1014	1019	Pass			
24-Jul-25	0850	P-9	P-27		24 ft	ML	W43	38	EAST		S/S					24-Jul-25		MV	30	30	0	1045	1050	Pass			
24-Jul-25	0940	P-26	P-27		24 ft	ML	W43	35	NORTH		S/S					24-Jul-25		MV	30	30	0	1027	1032	Pass			
24-Jul-25	1102	P-11	P-28		24 ft	ML	W43	35	EAST		S/S					24-Jul-25		MV	30	30	0	1122	1127	Pass			
24-Jul-25	1112	P-10	P-29		24 ft	ML	W43	35	EAST		S/S					24-Jul-25		MV	30	30	0	1128	1133	Pass			
24-Jul-25	1036	P-4	T-1		41 ft	SK	G56	34	NORTH		T/T					24-Jul-25		MV							Pass		
24-Jul-25	1100	P-6	T-1		27 ft	SK	G56	34	WEST		T/T					24-Jul-25		MV							Pass		
24-Jul-25	1118	P-26	T-1		25 ft	SK	G56	34	WEST		T/T					24-Jul-25		MV							Pass		
24-Jul-25	1140	P-27	T-1		28 ft	SK	G56	34	WEST		T/T					24-Jul-25		MV							Pass		
24-Jul-25	1325	P-29	T-1		24 ft	SK	G56	37	WEST		T/T					24-Jul-25		MV							Pass		
24-Jul-25	1431	P-28	T-1		25 ft	SK	G56	37	WEST		T/T					24-Jul-25		MV							Pass		
24-Jul-25	0943	P-2	T-1		32 ft	SK	G56	37	NW		T/T					24-Jul-25		MV							Pass		

SEAM/NON-DESTRUCTIVE TEST RECORD

N
100000 ft <-- See' Project Information' Worksheet Cell 'G45'

SCS Engineers CQA Technician:

Clayton Davis

Chris Calhoun

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

Project Location:

13758 Washington Rd

West Burlington, IA 52655

SCS Engineers Project Number:

27224417.00

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Date	Time	Seam Numbers			Seam Length	Seamer Initials	Machine Number	Trial Weld #	Direction Seamed	Destruct Number	Material (Top 1st)					Date Tested dd-mmm-yy	Addn'l Test #'s	Tester Initials	Pressure			Time [hhmm (24)]		P/F	Vacuum Box P/F
dd-mmm-yy	hhmm (24)											Start	End	+/-	Start				End						
24-Jul-25	1535	P-12	T-1		24 ft	ML	W43	38	WEST		S/S					24-Jul-25		MV							Pass
24-Jul-25	1645	P-13	T-1		24 ft	ML	W43	38	WEST		S/S					24-Jul-25		MV							Pass
24-Jul-25	1749	P-14	T-1		29 ft	SK	G56	37	WEST		T/T					24-Jul-25		MV							Pass
29-Jul-25	1520	P-25	P-30		272 ft	TN	W44	55	NORTH		S/S					29-Jul-25		MV	30	30	0	1520	1525	Pass	
29-Jul-25	1443	P-30	P-32		206 ft	ML	W43	50	NORTH		S/S					29-Jul-25	17	MV	30	30	0	1525	1530	Pass	
29-Jul-25	1523	P-30	P-31		115 ft	ML	W43	50	NORTH		S/S					29-Jul-25		MV	30	30	0	1548	1553	Pass	
29-Jul-25	1450	P-32	P-33		212 ft	NL	W23	52	NORTH		S/S					29-Jul-25		MV	30	30	0	1540	1545	Pass	
29-Jul-25	1500	P-36	P-35		24 ft	TN	W44	54	EAST		T/T					29-Jul-25		MV	30	30	0	1628	1633	Pass	
29-Jul-25	1530	P-33	P-36		50 ft	TN	W44	55	NORTH	DS-14	S/S					29-Jul-25		MV	30	30	0	1627	1632	Pass	
29-Jul-25	1604	P-36	P-37		50 ft	ML	W43	50	NORTH	DS-13	S/S					29-Jul-25		MV	30	30	0	1636	1641	Pass	
29-Jul-25	1642	P-35	P-37		366 ft	ML	W43	50	NORTH		S/S					29-Jul-25		MV	30	30	0	1643	1648	Pass	
29-Jul-25	1715	P-32	P-31		24 ft	NL	W23	51	EAST		T/T					29-Jul-25		MV	30	30	0	1730	1735	Pass	
29-Jul-25	1640	P-33	P-34		24 ft	TN	W44	54	EAST		T/T					29-Jul-25		MV	30	30	0	1701	1706	Pass	
29-Jul-25	1543	P-32	P-34		77 ft	TN	W44	55	NORTH		S/S					29-Jul-25		MV	30	30	0	1555	1600	Pass	
29-Jul-25	1551	P-31	P-34		82 ft	TN	W44	55	NORTH		S/S					29-Jul-25	18	MV	30	30	0	1604	1609	Pass	
29-Jul-25	1600	P-33	P-35		236 ft	TN	W44	55	NORTH		S/S					29-Jul-25		MV	30	30	0	1659	1704	Pass	
29-Jul-25	1648	P-34	P-35		118 ft	TN	W44	55	NORTH		S/S					29-Jul-25		MV	30	30	0	1709	1714	Pass	
29-Jul-25	1630	P-37	P-39		356 ft	NL	W23	52	NORTH	DS-12	S/S					29-Jul-25		MV	30	30	0	1743	1748	Pass	
29-Jul-25	1721	P-37	P-38		59 ft	NL	W23	52	NORTH		S/S					29-Jul-25		MV	30	30	0	1754	1759	Pass	
29-Jul-25	1820	P-39	P-38		24 ft	NL	W23	51	EAST		T/T					30-Jul-25		MV	30	30	0	731	0736	Pass	
29-Jul-25	1700	P-39	P-41		296 ft	ML	W43	50	NORTH		S/S					31-Jul-25		MV	30	30	0	721	0726	Pass	
29-Jul-25	1843	P-38	P-40		54 ft	NL	W23	52	NORTH		S/S					30-Jul-25		MV	30	30	0	734	0739	Pass	
29-Jul-25	1825	P-39	P-40		67 ft	NL	W23	52	NORTH	DS-11	S/S					30-Jul-25		MV	30	30	0	727	0732	Pass	
29-Jul-25	1817	P-41	P-40		24 ft	NL	W23	51	EAST		T/T					30-Jul-25		MV	30	30	0	726	0731	Pass	
29-Jul-25	1750	P-30	P-15		48 ft	AH	W45	57	NW		T/T					29-Jul-25	19	MV	30	30	0	1805	1810	Pass	
29-Jul-25	1831	P-31	P-15		44 ft	AH	W45	57	NW		T/T					29-Jul-25	20	MV	30	30	0	1805	1810	Pass	

SEAM/NON-DESTRUCTIVE TEST RECORD

N
100000 ft <-- See 'Project Information' Worksheet Cell 'G45'

SCS Engineers CQA Technician:

Clayton Davis

Chris Calhoun

Client Name:

Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

Project Location:

13758 Washington Rd

West Burlington, IA 52655

SCS Engineers Project Number:

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Seaming Information											These columns Intentionally Left Blank				Non-Destructive Testing Information										
Date	Time	Seam Numbers			Seam Length	Seamer Initials	Machine Number	Trial Weld #	Direction Seamed	Destruct Number	Material (Top 1st)					Date Tested dd-mmm-yy	Addn'l Test #'s	Tester Initials	Pressure			Time [hhmm (24)]		P/F	Vacuum Box P/F
dd-mmm-yy	hhmm (24)											Start	End	+/-	Start				End						
29-Jul-25	1852	P-34	P-15		45 ft	AH	W45	57	NW		T/T					29-Jul-25		MV	30	30	0	1810	1815	Pass	
31-Jul-25	1407	P-35	P-14		15 ft	SK	G56	62	NW		S/S					1-Aug-25		MV							Pass
31-Jul-25	1442	P-39	T-1		26 ft	SK	G56	62	WEST		S/S					1-Aug-25		MV							Pass
31-Jul-25	1422	P-35	T-1		18 ft	SK	G56	62	WEST		S/S					1-Aug-25		MV							Pass
31-Jul-25	1501	P-38	T-1		24 ft	SK	G56	62	WEST		S/S					1-Aug-25		MV							Pass
31-Jul-25	1548	P-40	T-1		25 ft	SK	G56	62	WEST		S/S					1-Aug-25		MV							Pass
01-Aug-25	0840	P-41	P-43		254 ft	NL	W23	77	NORTH		S/S					1-Aug-25		MV	30	30	0	1000	1005	Pass	
01-Aug-25	0900	P-43	P-45		239 ft	TN	W44	78	NORTH	DS-23	S/S					1-Aug-25	21, 22	MV	30	30	0	1036	1041	Pass	
01-Aug-25	0914	P-45	P-47		254 ft	ML	W43	76	NORTH		S/S					1-Aug-25		MV	30	30	0	1023	1028	Pass	
01-Aug-25	0848	P-43	P-42		24 ft	AH	W45	83	EAST		T/T					1-Aug-25		MV	30	30	0	913	0918	Pass	
01-Aug-25	0905	P-45	P-44		24 ft	AH	W45	83	EAST		T/T					1-Aug-25		MV	30	30	0	916	0921	Pass	
01-Aug-25	0919	P-47	P-46		24 ft	AH	W45	83	EAST		T/T					1-Aug-25		MV	30	30	0	928	0933	Pass	
01-Aug-25	0932	P-40	P-42		182 ft	NL	W23	77	NORTH		S/S					1-Aug-25		MV	30	30	0	1008	1013	Pass	
01-Aug-25	0926	P-41	P-42		48 ft	NL	W23	77	NORTH		S/S					2-Aug-25		MV	30	30	0	801	0806	Pass	
01-Aug-25	1013	P-44	P-42		25 ft	TN	W44	78	NORTH	DS-15	S/S					1-Aug-25		MV	30	30	0	1037	1042	Pass	
01-Aug-25	1025	P-42	P-44		193 ft	TN	W44	78	NORTH		S/S					1-Aug-25		MV	30	30	0	1037	1042	Pass	
01-Aug-25	1024	P-45	P-46		12 ft	ML	W43	76	NORTH		S/S					1-Aug-25		MV	30	30	0	1030	1035	Pass	
01-Aug-25	1035	P-44	P-46		225 ft	ML	W43	76	NORTH	DS-16	S/S					1-Aug-25	26, 27	MV	30	30	0	1055	1100	Pass	
01-Aug-25	1303	P-47	P-49		230 ft	NL	W43	77	NORTH	DS-24	S/S					1-Aug-25	23	MV	30	30	0	1340	1345	Pass	
01-Aug-25	1349	P-46	P-49		6 ft	NL	W23	77	NORTH		S/S					1-Aug-25		MV	30	30	0	1125	1130	Pass	
01-Aug-25	1358	P-46	P-48		240 ft	NL	W23	77	NORTH	DS-17	S/S					1-Aug-25		MV	30	30	0	1126	1131	Pass	
01-Aug-25	1340	P-49	P-51		237 ft	TN	W44	78	SOUTH		S/S					1-Aug-25		MV	30	30	0	1448	1453	Pass	
01-Aug-25	1009	P-49	P-48		24 ft	AH	W45	83	EAST		T/T					1-Aug-25		MV	30	30	0	1045	1050	Pass	
01-Aug-25	1015	P-48	P-51		30 ft	AH	W45	83	EAST		T/T					1-Aug-25		MV	30	30	0	1143	1148	Pass	
01-Aug-25	1315	P-48	P-50		231 ft	TN	W44	78	SOUTH		S/S					1-Aug-25		MV	30	30	0	1354	1359	Pass	
01-Aug-25	1403	P-51	P-53		273 ft	ML	W43	76	SOUTH		S/S					1-Aug-25		MV	30	30	0	1512	1517	Pass	

SEAM/NON-DESTRUCTIVE TEST RECORD

N
100000 ft <-- See' Project Information' Worksheet Cell 'G45'

SCS Engineers CQA Technician:

Clayton Davis

Chris Calhoun

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Des Moines County Solid Waste Commision

SCS Engineers Project Name:

Cell D1-D2

Project Location:

13758 Washington Rd

West Burlington, IA 52655

SCS Engineers Project Number:

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Date	Time	Seam Numbers			Seam Length	Seamer Initials	Machine Number	Trial Weld #	Direction Seamed	Destruct Number	Material (Top 1st)					Date Tested dd-mmm-yy	Addn'l Test #'s	Tester Initials	Pressure			Time [hhmm (24)]		P/F	Vacuum Box P/F
dd-mmm-yy	hhmm (24)											Start	End	+/-	Start				End						
01-Aug-25	1515	P-50	P-53		38 ft	ML	W43	76	SOUTH		S/S					1-Aug-25		MV	30	30	0	1425	1430	Pass	
01-Aug-25	1523	P-50	P-52		213 ft	ML	W43	76	SOUTH		S/S					1-Aug-25		MV	30	30	0	1418	1423	Pass	
01-Aug-25	1100	P-50	P-51		24 ft	AH	W45	83	EAST		T/T					1-Aug-25		MV	30	30	0	1118	1123	Pass	
01-Aug-25	1525	P-53	P-55		315 ft	NL	W23	77	SOUTH		S/S					1-Aug-25		MV	30	30	0	1636	1641	Pass	
01-Aug-25	1515	P-52	P-55		12 ft	NL	W23	77	SOUTH		S/S					1-Aug-25		MV	30	30	0	1530	1535	Pass	
01-Aug-25	1430	P-52	P-54		171 ft	NL	W23	77	SOUTH		S/S					1-Aug-25		MV	30	30	0	1532	1537	Pass	
01-Aug-25	1610	P-54	P-55		24 ft	AH	W45	83	EAST		T/T					2-Aug-25		MV	30	30	0	742	0747	Pass	
01-Aug-25	1532	P-52	P-53		24 ft	NL	W23	81	EAST		T/T					1-Aug-25		MV	30	30	0	1417	1422	Pass	
01-Aug-25	1604	P-57	P-55		301 ft	TN	W44	78	NORTH		S/S					2-Aug-25	24	MV	30	30	0	715	0720	Pass	
01-Aug-25	1658	P-56	P-55		26 ft	TN	W44	78	NORTH		S/S					2-Aug-25		MV	30	30	0	812	0817	Pass	
01-Aug-25	1707	P-56	P-54		138 ft	TN	W44	78	NORTH		S/S					2-Aug-25		MV	30	30	0	808	0813	Pass	
01-Aug-25	1637	P-57	P-58		62 ft	ML	W43	76	NORTH		S/S					2-Aug-25		MV	30	30	0	1702	1707	Pass	
01-Aug-25	1342	P-56	P-58		121 ft	ML	W43	76	NORTH		S/S					2-Aug-25		MV	30	30	0	821	0826	Pass	
02-Aug-25	1320	P-58	P-59		21 ft	TN	W44	73	NORTH		S/T					2-Aug-25		MV	30	30	0	1421	1426	Pass	
02-Aug-25	1020	P-59	P-60		7 ft	TN	W44	65	SW		S/S					2-Aug-25		MV	30	30	0	1420	1425	Pass	
02-Aug-25	1258	P-60	P-58		27 ft	TN	W44	73	NORTH		S/T					2-Aug-25		MV	30	30	0	1418	1423	Pass	
02-Aug-25	0850	P-60	P-61		19 ft	TN	W44	65	SW		S/S					2-Aug-25		MV	30	30	0	936	0941	Pass	
02-Aug-25	1230	P-61	P-58		27 ft	TN	W44	73	NORTH		S/T					2-Aug-25		MV	30	30	0	1416	1421	Pass	
02-Aug-25	0900	P-62	P-61		32 ft	TN	W44	65	SW		S/S					2-Aug-25		MV	30	30	0	926	0931	Pass	
02-Aug-25	1210	P-62	P-58		27 ft	TN	W44	73	NORTH		S/T					2-Aug-25		MV	30	30	0	1415	1420	Pass	
02-Aug-25	0907	P-63	P-62		43 ft	TN	W44	65	SW	DS-20	S/S					2-Aug-25		MV	30	30	0	923	0928	Pass	
02-Aug-25	1337	P-63	P-58		24 ft	TN	W44	73	NORTH		S/T					2-Aug-25		MV	30	30	0	1421	1426	Pass	
02-Aug-25	0905	P-64	P-63		43 ft	ML	W43	64	SW		S/S					2-Aug-25		MV	30	30	0	916	0921	Pass	
02-Aug-25	1158	P-64	P-58		28 ft	NL	W23	74	EAST		S/T					2-Aug-25		MV	30	30	0	1410	1415	Pass	
02-Aug-25	1306	P-64	P-57		35 ft	NL	W23	74	SOUTH		S/T					2-Aug-25		MV	30	30	0	1435	1440	Pass	
02-Aug-25	0846	P-64	P-65		84 ft	ML	W43	64	SW		S/S					2-Aug-25		MV	30	30	0	909	0914	Pass	

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Date dd-mmm-yy	Time hhmm (24)	Seam Numbers			Seam Length	Seamer Initials	Machine Number	Trial Weld #	Direction Seamed	Destruct Number	Material (Top 1 st)					Date Tested dd-mmm-yy	Addn'l Test #'s	Tester Initials	Pressure			Time [hhmm (24)]		P/F	Vacuum Box P/F
																			Start	End	+/-	Start	End		
02-Aug-25	0840	P-65	P-66		85 ft	NL	W23	66	SW		S/S					2-Aug-25		MV	30	30	0	902	0907	Pass	
02-Aug-25	0915	P-66	P-67		94 ft	NL	W23	66	SW		S/S					2-Aug-25		MV	30	30	0	939	0944	Pass	
02-Aug-25	0921	P-67	P-68		113 ft	ML	W43	64	SW		S/S					2-Aug-25		MV	30	30	0	946	0951	Pass	
02-Aug-25	0951	P-68	P-69		123 ft	ML	W43	64	SW		S/S					2-Aug-25		MV	30	30	0	1015	1020	Pass	
02-Aug-25	0952	P-69	P-70		137 ft	NL	W23	66	SW		S/S					2-Aug-25		MV	30	30	0	1020	1025	Pass	
02-Aug-25	1024	P-70	P-71		145 ft	ML	W43	64	SW		S/S					2-Aug-25		MV	30	30	0	1052	1057	Pass	
02-Aug-25	1030	P-71	P-72		161 ft	NL	W23	66	SW		S/S					2-Aug-25		MV	30	30	0	1100	1105	Pass	
02-Aug-25	1650	P-56	P-57		24 ft	AH	W45	67	EAST		T/T					2-Aug-25		MV	30	30	0	1703	1708	Pass	
02-Aug-25	1103	P-72	P-73		169 ft	ML	W43	64	SOUTH	DS-19	S/S					2-Aug-25		MV	30	30	0	1130	1135	Pass	
02-Aug-25	1105	P-73	P-74		141 ft	NL	W23	66	SOUTH		S/S					2-Aug-25		MV	30	30	0	1135	1140	Pass	
02-Aug-25	1136	P-74	P-75		31 ft	ML	W43	64	SOUTH		S/S					2-Aug-25		MV	30	30	0	1152	1157	Pass	
02-Aug-25	1154	P-75	P-76		20 ft	ML	W43	64	SOUTH		S/S					2-Aug-25		MV	30	30	0	1310	1315	Pass	
02-Aug-25	1135	P-77	P-57		215 ft	ML	W43	64	SOUTH		S/S					3-Aug-25		MV	30	30	0	1425	1430	Pass	
02-Aug-25	1330	P-77	P-64		18 ft	NL	W23	70	EAST		S/T					2-Aug-25		MV	30	30	0	1354	1359	Pass	
02-Aug-25	1326	P-77	P-65		23 ft	NL	W23	70	NORTH		S/T					2-Aug-25	25	MV	30	30	0	1343	1348	Pass	
02-Aug-25	1320	P-77	P-66		27 ft	NL	W23	70	NORTH		S/T					2-Aug-25		MV	30	30	0	1348	1353	Pass	
02-Aug-25	1315	P-77	P-67		27 ft	NL	W23	70	NORTH		S/T					2-Aug-25		MV	30	30	0	1327	1332	Pass	
02-Aug-25	1250	P-77	P-68		27 ft	NL	W23	74	NORTH		S/T					2-Aug-25		MV	30	30	0	1320	1325	Pass	
02-Aug-25	1219	P-77	P-69		27 ft	NL	W23	74	NORTH	DS-21	S/T					2-Aug-25		MV	30	30	0	1318	1323	Pass	
02-Aug-25	1205	P-77	P-70		27 ft	NL	W23	74	NORTH		S/T					2-Aug-25		MV	30	30	0	1325	1330	Pass	
02-Aug-25	1149	P-77	P-71		27 ft	NL	W23	74	NORTH		S/T					2-Aug-25		MV	30	30	0	1318	1323	Pass	
02-Aug-25	1142	P-77	P-72		26 ft	NL	W23	74	NORTH		S/T					2-Aug-25		MV	30	30	0	1149	1154	Pass	
02-Aug-25	1140	P-77	P-73		4 ft	NL	W23	74	NORTH		S/T					2-Aug-25		MV	30	30	0	1143	1148	Pass	
04-Aug-25	1700	P-52	T-1		15 ft	SK	G56	95	WEST		T/T					5-Aug-25		MV							Pass
04-Aug-25	1632	P-50	T-1		25 ft	SK	G56	95	WEST		T/T					5-Aug-25		MV							Pass
04-Aug-25	1541	P-48	T-1		25 ft	SK	G56	94	WEST		T/T					4-Aug-25		MV							Pass

		SCS Engineers CQA Technician:		<u>Clayton Davis</u>
				<u>Chris Calhoun</u>
Client Name:	<u>Des Moines County Solid Waste Commision</u>	SCS Engineers Project Name:	<u>Cell D1-D2</u>	
Project Location:	<u>13758 Washington Rd</u>			
	<u>West Burlington, IA 52655</u>	SCS Engineers Project Number:	<u>27224417.00</u>	

dd-mm-yy

Max Pressure Drop =	4.00 psi
Elapsed Test Interval=	5.0 min

SCS ENGINEERS



Appendix D5

Geomembrane Non-Destructive Test Records

ADDITIONAL NON-DESTRUCTIVE TEST RECORD

SCS Engineers CQA Technician: Clayton Davis

Chris Calhoun

SCS Engineers Project Name: Cell D1-D2

SCS Engineers Project Number: 27224417.00

Client Name: Des Moines County Solid Waste Commission

Project Location: 13758 Washington Rd

West Burlington, IA 52655

Max Pressure Drop: 4.0 psi

Test Standard Elapsed Time: 5 min

Test Number	Test Date dd-mm-yy	Seam Number				Tester Initials	Pressure			Time (hhmm 0 to 24 hr)		Pressure Test P/F	Vacuum Box P/F	Location/Comments (Tech #)
							Start	End	+/-	Start	End			
1	22-Jul-25	1	Existin a			MV	30 psi	30 psi	0 psi	1415	1420	Pass		Along east tie in
2	22-Jul-25	1	3			MV	30 psi	30 psi	0 psi	1436	1441	Pass		84' north of start of seam
3	22-Jul-25	2	4			MV	30 psi	30 psi	0 psi	1506	1511	Pass		15' south of end of seam
4	22-Jul-25	2	3			MV	30 psi	30 psi	0 psi	1523	1528	Pass		3' east of end of seam
5	23-Jul-25	23	22			NV	30 psi	30 psi	0 psi	1624	1629	Pass		Southern 8' of seam
6	23-Jul-25	24	23			NV	30 psi	30 psi	0 psi	1627	1632	Pass		Southern 20' of seam
7	24-Jul-25	19	17			MV	30 psi	30 psi	0 psi	0718	0723	Pass		Northern 20' of seam
8	24-Jul-25	4	6			MV	30 psi	30 psi	0 psi	1005	1010	Pass		Northern 9' of seam
9	24-Jul-25	4	6			MV	30 psi	30 psi	0 psi	1004	1009	Pass		46' south of test 8
10	24-Jul-25	6	8			MV	30 psi	30 psi	0 psi	1012	1017	Pass		Northern 32' of seam
11	24-Jul-25	6	8			MV	30 psi	30 psi	0 psi	1017	1022	Pass		The 26' directly South of test 10
12	24-Jul-25	8	9			MV	30 psi	30 psi	0 psi	1032	1037	Pass		North 9' of seam
13	24-Jul-25	9	10			MV	30 psi	30 psi	0 psi	1053	1058	Pass		North 20' of P-29
14	24-Jul-25	8	9			MV	30 psi	30 psi	0 psi	1038	1043	Pass		The 25' directly south of test 12
15	24-Jul-25	13	14			MV	30 psi	30 psi	0 psi	1303	1308	Pass		Northern 54' of seam
16	24-Jul-25	12	13			MV	30 psi	30 psi	0 psi	1312	1317	Pass		Northern 55' of seam
17	29-Jul-25	30	32			MV	30 psi	30 psi	0 psi	1503	1508	Pass		Southern 24' of seam
18	29-Jul-25	31	34			MV	30 psi	30 psi	0 psi	1608	1613	Pass		Southern 33' of seam
19	29-Jul-25	30	15			MV	30 psi	30 psi	0 psi	1600	1605	Pass		Southeast 20' of seam
20	29-Jul-25	31	15			MV	30 psi	30 psi	0 psi	1607	1612	Pass		Southeast 16' of seam
21	1-Aug-25	43	45			MV	30 psi	30 psi	0 psi	0953	0958	Pass		58' south of intersection
22	1-Aug-25	43	45			MV	30 psi	30 psi	0 psi	0935	0940	Pass		38' south of #21
23	1-Aug-25	49	47			MV	30 psi	30 psi	0 psi	1324	1329	Pass		138' south of intersection
24	1-Aug-25	55	57			MV	30 psi	30 psi	0 psi	1614	1619	Pass		South 30' of seam

SCS Engineers CQA Technician:	Clayton Davis
	Chris Calhoun
SCS Engineers Project Name:	Cell D1-D2
SCS Engineers Project Number:	27224417.00

[illegible]



Appendix D6

Geomembrane Field Destructive Test Records

DESTRUCTIVE TEST RECORD

Client Name:

Des Moines County Solid Waste Commisior

SCS Engineers Project Name:

Cell D1-D2

SCS Engineers Project Number:

27224417.00

Project Location:

13758 Washington Rd

West Burlington, IA 52655

Specifications:

60

mil

Material Type:

HDPE

Peel (P)

≥ 90

lb/in

Shear (S)

≥ 120

lb/in

SCS Engineers CQA Technician:

Clayton Davis

Chris Calhoun

Number of Passing Destruct Tests				Min Req'd Destruct Tests	Net # of Test above Req'd	#VALUE!	
Field	Lab	Total	w EOS Field	3 Tests	#VALUE!		
28 Tests	27 Tests	55 Tests	#VALUE!				

Max # of Failing Tests Allowed per P/S Set: 0 ea Set on Trial Weld Worksheet

NOTE: ALWAYS CHECK FAILURE CODES ON LAB TEST TOO

Sample ID	Date dd-mmm-yy	Time hhmm (24)	Installer's QC	Seam Number			Seamers Initials	Machine Number	Weld Type		Field Test Values (lbs/in)										Field Pass/Fail	Lab Pass/Fail	Repair Number	Location (Tech #)		
											Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5							
DS-1	22-Jul-25	0824	JC	3	5			ML	W43	Fusion	P	116	104	119	113	101	109	104	117	105	118	Pass	Pass	R-1	27' from south seam	
											S	141		142		140		139		141						
DS-2	22-Jul-25	0830	JC	5	7			TN	W44	Fusion	P	102	123	108	114	121	115	103	108	104	110	Pass	Pass	R-2	70' from south seam	
											S	139		140		141		138		143						
DS-3	22-Jul-25	0837	JC	4	6			TN	W44	Fusion	P	113	110	109	102	112	118	111	117	120	116	Pass	Pass	R-3	270' from south seam	
											S	140		142		143		139		140						
DS-4	22-Jul-25	0850	JC	7	8			NL	W23	Fusion	P	125	116	103	114	116	111	105	118	111	121	Pass	Pass	R-4	240' from south seam	
											S	136		135		140		138		139						
DS-5	25-Jul-25	0825	JC	16	15			NL	W23	Fusion	P	99	106	101	109	113	119	108	102	120	114	Pass	Pass	R-38	50' from south seam	
											S	138		137		134		138		136						
DS-6	25-Jul-25	0832	JC	13	14			NL	W23	Fusion	P	111	117	103	112	116	109	117	123	101	118	Pass	Pass	R-33	75' from south seam	
											S	135		133		134		132		136						
DS-7	25-Jul-25	0845	JC	11	12			ML	W43	Fusion	P	105	111	101	106	99	103	121	106	114	105	Pass	Pass	R-34	250' from north seam	
											S	129		131		132		133		134						
DS-8	25-Jul-25	0851	JC	10	9			NL	W23	Fusion	P	115	103	104	113	107	109	121	118	113	117	Pass	Pass	R-35	295' from south seam	
											S	132		131		132		134		135						
DS-9	25-Jul-25	0857	JC	22	21			ML	W43	Fusion	P	98	101	106	113	112	108	115	104	119	109	Pass	Pass	R-36	65' from south seam	
											S	136		134		133		135		136						
DS-10	25-Jul-25	0901	JC	23	22			ML	W43	Fusion	P	116	115	103	108	114	101	116	123	110	102	Pass	Pass	R-37	50' from south seam	
											S	137		136		135		136		137						
DS-11	31-Jul-25	1148	JC	40	39			ML	W43	Fusion	P	116	118	103	108	114	101	116	123	110	102	Pass	Fail	R-49	24' north of intersection seam	
											S	137		136		135		136		137						
DS-12	31-Jul-25	1201	JC	37	39			NL	W23	Fusion	P	102	106	112	114	110	109	126	103	110	115	Pass	Pass	R-60	23' from south seam	
											S	152		149		137		150		151						
DS-13	31-Jul-25	1210	JC	36	37			ML	W43	Fusion	P	99	101	102	108	111	104	113	107	112	105	Pass	Pass	R-58	34' from south seam	
											S	133		136		132		138		140						
DS-14	31-Jul-25	1223	JC	33	36			TN	W44	Fusion	P	106	105	107	114	101	113	114	121	119	102	Pass	Pass	R-59	24' from south seam	
											S	141		143		152		149		151						
DS-15	01-Aug-25	1320	JC	42	44			TN	W44	Fusion	P	104	113	121	126	119	120	118	123	114	128	Pass	Pass	R-82	20' north of P42 SW corner	
											S	127		132		131		130		129						
DS-16	01-Aug-25	1333	JC	46	44			ML	W43	Fusion	P	108	99	101	110	103	117	106	114	109	126	Pass	Pass	R-79	98' north of intersection	
											S	146		147		153		150		149						
DS-17	01-Aug-25	1346	JC	48	46			ML	W43	Fusion	P	101	116	103	123	116	124	121	118	127	117	Pass	Pass	R-81	50' north of intersection	
											S	139		141		138		140		141						
DS-18	02-Aug-25	1454	JC	46	R-81			SK	G56	Extrusion	P	128		129		127		126		128		Pass	Pass	R-129	from DS-17	
											S	148		146		147		149		150						
DS-11A	03-Aug-25	1316	JC	40	39			ML	W43	Fusion	P	101	99	98	103	112	108	119	123	125	121	Pass	Pass	R-131	5' North of DS-11	
											S	137		132		130		134		136						
DS-11B	03-Aug-25	1330	JC	40	39			ML	W43	Fusion	P	103	114	108	119	120	118	112	101	115	109	Pass	Pass	R-132	5' south of DS-11	
											S	147		146		143		141		148						
DS-19	03-Aug-25	1352	JC	73	72			ML	W43	Fusion	P	109	118	121	117	113	116	111	109	101	105	Pass	Pass	R-126	60' from west seam	
											S	139		140		135		137		141						

DESTRUCTIVE TEST RECORD

Client Name:Des Moines County Solid Waste Commisior

SCS Engineers Project Name:Cell D1-D2

SCS Engineers Project Number:27224417.00

Project Location:13758 Washington Rd

West Burlington, IA 52655

Specifications:60mil

Material Type:HDPE

Peel (P)

Shear (S)

≥ 90

≥ 120

≥ 78

≥ 120

lb/in

lb/in

SCS Engineers CQA Technician:Clayton Davis

Chris Calhoun

Number of Passing Destruct Tests				Min Req'd Destruct Tests	Net # of Test above Req'd	#VALUE!
Field	Lab	Total	w EOS Field			
28 Tests	27 Tests	55 Tests	#VALUE!	3 Tests	#VALUE!	

Max # of Failing Tests Allowed per P/S Set: 0 eaSet on Trial Weld Worksheet

NOTE: ALWAYS CHECK FAILURE CODES ON LAB TEST TOO

Sample ID	Date dd-mmm-yy	Time hhmm (24)	Installer's QC	Seam Number				Seamers Initials	Machine Number	Weld Type		Field Test Values (lbs/in)										Field Pass/Fail	Lab Pass/Fail	Repair Number	Location (Tech #)	
												Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5						
DS-20	03-Aug-25	1409	JC	63	62			TN	W44	Fusion	P	103	101	99	112	106	110	112	119	104	114	Pass	Pass	R-127	19' from south seam	
												140		149		138		137		139						
DS-21	03-Aug-25	1421	JC	77	69			NL	W23	Fusion	P	107	100	106	112	116	123	122	126	117	109	Pass	Pass	R-128	middle of seam 69/77	
												138		137		136		139		140						
DS-22	03-Aug-25	1447	JC	R-126	73			ML	G44	Extrusion	P	131		129		130		132		136		Pass	Pass	R-130	from DS-19	
												149		148		150		151		152						
DS-23	04-Aug-25	0932	JC	43	45			TN	W44	Fusion	P	101	99	103	106	115	101	104	109	116	124	Pass	Pass	R-133	18' north of anchor trench	
												146		142		139		140		144						
DS-24	04-Aug-25	0943	JC	49	47			NL	W23	Fusion	P	106	111	126	120	110	113	119	102	107	117	Pass	Pass	R-134	41' north of anchor trench	
												151		138		142		146		150						
DS-25	04-Aug-25	0959	JC	38	TI			ML	G44	Extrusion	P	138		130		132		136		134		Pass	Pass	R-135	middle of seam 38/TI	
												151		150		149		148		146						
DS-26	05-Aug-25	0825	JC	47	R-134			ML	G44	Extrusion	P	131		132		136		140		137		Pass	Pass	R-140	from DS-24	
												150		149		148		146		152						
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Appendix D7

Laboratory Geomembrane Destructive Test Records



Date: 2025-07-29

Mail To:
Kyle Johnson
Delong Construction, Inc

Bill To:

Delong Construction, Inc

, ,

e-mail:
kjohnson@delonginc.com jdyring@tepinc.net dan@delonginc.com

Dear Johnson,

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: **Des Moines County Landfill**

TRI Job Reference Number: **83552**

Material(s) Tested: (10) 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,

sigfile

geolab

Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83552

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-1 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	136	135	141	133	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)	116	113	119	109	114	114
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	184	180	178	181	181
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-2 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	134	123	129	128	138	130
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	124	119	129	119	127	124
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	183	185	179	179	178	181
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: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83552

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-3 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	117	123	125	125	123	123
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	122	125	122	124	122	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)	178	173	178	183	183	179
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-4 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	118	115	112	112	115	114
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	146	134	123	141	134
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	184	178	187	181	181	182
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: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83552

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-5 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	120	121	123	121	143	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)	128	126	130	127	131	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)	180	178	185	178	186	181
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-6 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	123	132	120	125	128	126
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	103	102	103	102	108	104
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)	192	186	184	188	187	187
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83552

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-7 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	111	109	105	114	109	110
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	138	140	141	136	133	138
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	180	183	179	177	180
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-8 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	130	132	127	129	133	130
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	96	101	100	95	97	98
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	181	181	181	187	182
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83552

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-9 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	122	117	118	122	124	121
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	142	139	136	132	140	138
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	184	188	183	184	185
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-10 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	131	122	123	124	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)	126	123	121	122	127	124
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	180	185	182	187	182	183
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2025-08-02

Mail To:
Kyle Johnson
Delong Construction, Inc

Bill To:

Delong Construction, Inc

, ,

e-mail:
kjohnson@delonginc.com jdyring@tepinc.net dan@delonginc.com

Dear Johnson,

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: **Des Moines County Landfill**

TRI Job Reference Number: **83592**

Material(s) Tested: (7) 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,

sigfile

geolab

Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83592

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-11 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	126	125	128	131	131	128
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	105	119	110	105	114	111
Peel Incursion (%)	20	90	90	25	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	181	183	181	182	184	182
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-12 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	131	126	127	127	130	128
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	117	109	104	101	112	109
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	182	187	181	182	183
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83592

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-13 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	143	130	146	148	135	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)	134	133	135	129	141	134
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	189	183	184	184	186	185
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-14 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	137	129	124	142	130	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)	104	106	101	113	111	107
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	180	181	179	186	182
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83592

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-15 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	124	138	128	163	114	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)	115	138	133	135	137	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)	187	181	182	181	184	183
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-16 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	129	127	128	132	136	130
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	121	123	120	121	120	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)	184	187	183	183	190	185
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83592

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-17 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	130	130	125	127	132	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)	111	112	111	103	109	109
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)	182	187	183	188	183	185
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2025-08-05

Mail To:
Kyle Johnson
Delong Construction, Inc

Bill To:

Delong Construction, Inc

, ,

e-mail:
kjohnson@delonginc.com jdyring@tepinc.net dan@delonginc.com

Dear Johnson,

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: **Des Moines County Landfill**

TRI Job Reference Number: **83617**

Material(s) Tested: (7) Heat Fusion Weld Seam(s)
(3) 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,

sigfile

geolab

Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83617

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-11A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	134	134	131	132	120	130
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	134	133	131	130	130	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)	187	177	186	183	182	183
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-11B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	134	143	135	131	132	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)	111	137	117	117	115	119
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	179	180	178	183	184	181
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83617

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-19 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	125	131	122	127	124	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)	128	125	124	124	123	125
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	189	184	186	184	183	185
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-20 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	125	145	133	136	148	137
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	135	125	128	132	132	130
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	190	183	181	192	184	186
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83617

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-21 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	131	137	130	136	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	
Side: B						Peel B
Peel Strength (ppi)	134	130	129	131	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)	183	181	186	184	183	183
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-23 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	130	127	128	130	129	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)	136	134	133	135	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	
Shear						Shear
Shear Strength (ppi)	184	184	182	189	189	186
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83617

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-24 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	125	134	133	134	135	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)	132	135	132	134	136	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)	184	186	181	181	182	183
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.



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83617

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-18 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	148	161	169	160	166	161
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	169	164	168	175	177	171
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-22 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	161	136	122	134	154	141
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	172	176	166	173	171	172
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-25 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	140	150	143	154	149	147
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	185	185	189	190	187
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: 2025-08-06

Mail To:
Kyle Johnson
Delong Construction, Inc

Bill To:

Delong Construction, Inc

, ,

e-mail:
kjohnson@delonginc.com jdyring@tepinc.net dan@delonginc.com

Dear Johnson,

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: **Des Moines County Landfill**

TRI Job Reference Number: **83630**

Material(s) Tested: (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,

sigfile

geolab

Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK

TRI Client: Delong Construction, Inc

Project: Des Moines County Landfill

Material: 60 mil. HDPE

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

TRI Log#: 83630

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-26 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	111	128	126	110	145	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)	179	177	176	173	177	176
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.



Appendix D8

Geomembrane Repair Records

REPAIR RECORD

Client Name: Des Moines County Solid Waste Commision
Project Location: 13758 Washington Rd
West Burlington, IA 52655

SCS Engineers Project Name: Cell D1-D2

SCS Engineers Project Number: 27224417.00

SCS Engineers CQA Technician: Clayton Davis
Chris Calhoun

Date of Interest Note if blank will consider all dates.
 enter mm-dd-yy

"x" indicates criteria applies to this project

Population:

Destruct Test Frequency (1 per)

Number of Required Destructs

x		
Total Seam	Machine	Welder
750 ft	750 ft	750 ft
3 ea	6 ea	19 ea

Minimum # of Destructs Required

3 ea

For Project Period

Repair Number	Panel/Seam				Repairer Initials	Machine Number	Repair Type	Repair size			Trial Weld Number	Test Date dd-mm-yy	Tester Initials	Test P/F	Location/Comments (Tech #)
								Length (ft)		Width (ft)					
R-1	3	5			SK	G56	Patch	5.0 ft	x	2.0 ft	40	25-Jul-25	MV	Pass	DS-1
R-2	5	7			SK	G56	Patch	6.0 ft	x	2.0 ft	40	7/25	MV	Pass	DS-2
R-3	4	6			SK	G56	Patch	5.5 ft	x	2.5 ft	40	7/25	MV	Pass	DS-3
R-4	7	8			SK	G56	Patch	5.5 ft	x	2.0 ft	33	7/25	MV	Pass	DS-4
R-5	1	3			SK	G56	Patch	4.0 ft	x	2.0 ft	20	7/23	MV	Pass	1444
R-6	1	3			SK	G56	Patch	2.0 ft	x	2.0 ft	20	7/23	MV	Pass	17' North of R-5, 1450
R-7	1	3	2		SK	G56	Patch	4.0 ft	x	2.0 ft	20	7/23	MV	Pass	4' North of R-6, 1509
R-8	2	3			SK	G56	Patch	6.0 ft	x	2.0 ft	20	7/23	MV	Pass	West of R-7, 1515
R-9	2	3	5		SK	G56	Patch	3.0 ft	x	2.0 ft	33	7/23	MV	Pass	Intersection of panels, 1550
R-10	2	5	4		SK	G56	Patch	4.0 ft	x	2.0 ft	33	7/23	MV	Pass	Intersection of panels, 1558
R-11	5	4	7		SK	G56	Patch	4.0 ft	x	2.0 ft	33	7/23	MV	Pass	Intersection of panels, 1614
R-12	4	7	6		SK	G56	Patch	3.0 ft	x	2.5 ft	33	7/23	MV	Pass	Intersection of panels, 1630
R-13	6	7	8		SK	G56	Patch	3.0 ft	x	2.0 ft	33	7/23	MV	Pass	Intersection of panels, 1640
R-14	7	8			SK	G56	Patch	6.0 ft	x	2.0 ft	33	7/23	MV	Pass	37' south of R-13, 1730
R-15	21	16			NL	W23	Patch	36.0 ft	x	2.5 ft	23	7/23	MV	Pass	2.5' strip along 21-16, 1645
R-16	22	16			NL	W23	Patch	36.0 ft	x	2.5 ft	23	7/23	MV	Pass	2.5' strip along 22-16, 1630
R-17	T-1	T-1			SK	G56	Patch	3.5 ft	x	2.0 ft	37	7/24	MV	Pass	P-2 T-1, 1045
R-18	28	29	10	11	SK	G56	Patch	6.5 ft	x	3.0 ft	37	7/24	MV	Pass	Intersection of panels, 1530
R-19	28	29	T-1		SK	G56	Patch	4.0 ft	x	3.0 ft	37	7/24	MV	Pass	Intersection of panels, 1530
R-20	T-1	1	T-1		SK	W44	Patch	1.5 ft	x	7.0 ft	46	7/25	MV	Pass	50' north of seam, 822
R-21	T-1	1	T-1		ML	W44	Patch	2.0 ft	x	6.5 ft	41	7/25	MV	Pass	40' north of seam, 830
R-22	T-1	1			ML	W44	Patch	2.0 ft	x	4.0 ft	41	7/25	MV	Pass	31' north of seam, 904
R-23	T-1	1			ML	G56	Patch	1.5 ft	x	2.5 ft	41	7/25	MV	Pass	4' north of seam, 941
R-24	T-1	1			SK	G56	Patch	2.0 ft	x	2.5 ft	40	7/25	MV	Pass	Intersection of panels 1015
R-25	19	18	17		SK	G56	Patch	2.5 ft	x	5.0 ft	40	7/25	MV	Pass	Intersections of panels, 853
R-26	20	19	17		SK	G56	Patch	2.0 ft	x	5.5 ft	40	7/25	MV	Pass	Intersection of panels, 907
R-27	21	20	16	17	SK	G56	Patch	2.0 ft	x	7.5 ft	40	7/25	MV	Pass	Intersection of panels, 951
R-28	22	21	16		SK	G56	Patch	4.0 ft	x	6.0 ft	42	7/25	MV	Pass	Intersection of panels, 1043

REPAIR RECORD

Client Name: Des Moines County Solid Waste Commision
Project Location: 13758 Washington Rd
West Burlington, IA 52655

SCS Engineers Project Name: Cell D1-D2

SCS Engineers Project Number: 27224417.00

SCS Engineers CQA Technician: Clayton Davis
Chris Calhoun

Date of Interest Note if blank will consider all dates.
 enter mm-dd-yy

"x" indicates criteria applies to this project

Population:

Destruct Test Frequency (1 per)

Number of Required Destructs

x		
Total Seam	Machine	Welder
750 ft	750 ft	750 ft
3 ea	6 ea	19 ea

Minimum # of Destructs Required

3 ea

For Project Period

Repair Number	Panel/Seam				Repairer Initials	Machine Number	Repair Type	Repair size			Trial Weld Number	Test Date dd-mm-yy	Tester Initials	Test P/F	Location/Comments (Tech #)
								Length (ft)		Width (ft)					
R-29	23	22	16		SK	G56	Patch	2.5 ft	x	3.0 ft	42	7/25	MV	Pass	Intersection of panels, 1123
R-30	24	23	16		SK	G56	Patch	1.5 ft	x	2.5 ft	42	7/25	MV	Pass	Intersection of panels, 1302
R-31	25	24	15		SK	G56	Patch	2.5 ft	x	2.0 ft	42	7/25	MV	Pass	Intersection of panels, 1331
R-32	19	17			SK	G56	Patch	2.5 ft	x	2.0 ft	42	7/25	MV	Pass	Midway of seam 19-17, 1400
R-33	13	14			SK	G56	Patch	6.0 ft	x	2.5 ft	44	7/28	MV	Pass	DS-6
R-34	11	12			SK	G56	Patch	6.0 ft	x	2.5 ft	44	7/28	MV	Pass	DS-7
R-35	10	9			SK	G56	Patch	2.5 ft	x	5.5 ft	44	7/28	MV	Pass	DS-8
R-36	22	21			SK	G56	Patch	2.0 ft	x	5.0 ft	45	7/28	MV	Pass	DS-9
R-37	23	22			SK	G56	Patch	1.5 ft	x	5.5 ft	45	7/28	MV	Pass	DS-10
R-38	16	15			SK	G56	Patch	2.0 ft	x	5.0 ft	45	7/28	MV	Pass	DS-5
R-39	23	22			SK	G56	Patch	1.0 ft	x	1.5 ft	45	7/28	MV	Pass	At South end of seam
R-40	24	25	15		SK	G56	Patch	7.5 ft	x	9.0 ft	60	7/31	MV	Pass	at intersection
R-41	25	15			SK	G56	Patch	7.0 ft	x	2.0 ft	60	7/31	MV	Pass	23' north of repair 40
R-42	31	34			SK	G56	Patch	2.0 ft	x	5.0 ft	60	7/31	MV	Pass	at the end of the additional seam 18 on the tab
R-43	31	33	34		SK	G56	Patch	2.0 ft	x	3.0 ft	60	7/31	MV	Pass	at intersection
R-44	33	34	35		SK	G56	Patch	2.0 ft	x	3.5 ft	60	7/31	MV	Pass	at intersection
R-45	31	30	32		ML	W44	Patch	2.0 ft	x	3.0 ft	61	7/31	MV	Pass	at intersection
R-46	32	31	33		ML	W44	Patch	3.0 ft	x	1.5 ft	61	7/31	MV	Pass	at intersection
R-47	39	41	40		ML	W44	Patch	2.0 ft	x	4.0 ft	61	7/31	MV	Pass	at intersection
R-48	39	38	40		SK	G56	Patch	3.0 ft	x	2.0 ft	60	7/31	MV	Pass	at intersection
R-49	40	39			SK	G56	Patch	7.0 ft	x	2.0 ft	62	7/31	MV	Pass	DS-11
R-50	38	39	37		ML	W44	Patch	2.5 ft	x	2.0 ft	63	7/31	MV	Pass	at intersection
R-51	38	37			ML	W44	Patch	3.0 ft	x	2.0 ft	63	7/31	MV	Pass	13' south of the end of seam
R-52	30	31	15		ML	W44	Patch	3.0 ft	x	2.0 ft	63	7/31	MV	Pass	at intersection
R-53	31	15	14		ML	W44	Patch	4.0 ft	x	2.0 ft	63	7/31	MV	Pass	at intersection
R-54	31	34	14		ML	W44	Patch	1.5 ft	x	2.0 ft	63	7/31	MV	Pass	at intersection
R-55	35	37			ML	W44	Patch	1.5 ft	x	2.0 ft	63	7/31	MV	Pass	33' north of 37/35/36 intersection
R-56	36	35	37		ML	W44	Patch	1.5 ft	x	2.0 ft	63	7/31	MV	Pass	at intersection

REPAIR RECORD

Client Name: Des Moines County Solid Waste Commision
Project Location: 13758 Washington Rd
West Burlington, IA 52655

SCS Engineers Project Name: Cell D1-D2

SCS Engineers Project Number: 27224417.00

SCS Engineers CQA Technician: Clayton Davis
Chris Calhoun

Date of Interest Note if blank will consider all dates.
 enter mm-dd-yy

"x" indicates criteria applies to this project

Population:

Destruct Test Frequency (1 per)

Number of Required Destructs

x		
Total Seam	Machine	Welder
750 ft	750 ft	750 ft
3 ea	6 ea	19 ea

Minimum # of Destructs Required

3 ea

For Project Period

Repair Number	Panel/Seam				Repairer Initials	Machine Number	Repair Type	Repair size			Trial Weld Number	Test Date dd-mm-yy	Tester Initials	Test P/F	Location/Comments (Tech #)
								Length (ft)		Width (ft)					
R-57	33	36	35		ML	W44	Patch	3.0 ft	x	1.5 ft	63	7/31	MV	Pass	at intersection
R-58	36	37			ML	W44	Patch	2.0 ft	x	6.0 ft	63	7/31	MV	Pass	DS-13
R-59	33	36			ML	W44	Patch	1.5 ft	x	5.0 ft	63	7/31	MV	Pass	DS-14
R-60	37	39			ML	W44	Patch	2.0 ft	x	6.0 ft	63	7/31	MV	Pass	DS-12
R-61	39				ML	W44	Patch	2.0 ft	x	2.0 ft	63	7/31	MV	Pass	2' of middle of south P-39
R-62	34	35	14		SK	G56	Patch	3.0 ft	x	3.5 ft	62	7/31	MV	Pass	at intersection
R-63	40	41	47		SK	G56	Patch	2.5 ft	x	3.0 ft	88	8/2	MV	Pass	at intersection
R-64	41	43	42		SK	G56	Patch	2.0 ft	x	2.5 ft	88	8/2	MV	Pass	at intersection
R-65	43	42	44		SK	G56	Patch	3.0 ft	x	2.5 ft	88	8/2	MV	Pass	at intersection
R-66	43	44	45		SK	G56	Patch	1.5 ft	x	2.5 ft	88	8/2	MV	Pass	at intersection
R-67	44	45	46		SK	G56	Patch	7.0 ft	x	2.0 ft	88	8/2	MV	Pass	at intersection
R-68	45	47	46		SK	G56	Patch	3.0 ft	x	1.5 ft	88	8/2	MV	Pass	at intersection
R-69	49	48	51		SK	G56	Patch	2.0 ft	x	3.5 ft	88	8/2	MV	Pass	at intersection
R-70	48	51	50		SK	G56	Patch	2.5 ft	x	1.5 ft	88	8/2	MV	Pass	at intersection
R-71	51	50	53		SK	G56	Patch	1.5 ft	x	3.0 ft	88	8/2	MV	Pass	at intersection
R-72	53	52	55		SK	G56	Patch	3.0 ft	x	2.5 ft	88	8/2	MV	Pass	at intersection
R-73	49	46	47		SK	G56	Patch	3.0 ft	x	1.5 ft	88	8/2	MV	Pass	at intersection
R-74	46	49	48		SK	G56	Patch	2.0 ft	x	1.5 ft	88	8/2	MV	Pass	at intersection
R-75	50	52	53		SK	G56	Patch	2.5 ft	x	2.0 ft	88	8/2	MV	Pass	at intersection
R-76	45	43			SK	G56	Patch	2.5 ft	x	1.5 ft	88	8/2	MV	Pass	58' south of seam
R-77	45	43			SK	G56	Patch	3.0 ft	x	1.5 ft	88	8/2	MV	Pass	30' south of above
R-78	44	46			SK	G56	Patch	1.5 ft	x	1.5 ft	88	8/2	MV	Pass	78' south of end of seam
R-79	44	46			SK	G56	Patch	2.0 ft	x	5.5 ft	88	8/2	MV	Pass	DS-16
R-80	44	46			SK	G56	Patch	1.5 ft	x	1.5 ft	88	8/2	MV	Pass	46' north of 46/44 intersection
R-81	46	48			SK	G56	Patch	1.5 ft	x	5.5 ft	88	8/2	MV	Pass	DS-17
R-82	42	44			SK	G56	Patch	2.0 ft	x	5.0 ft	88	8/2	MV	Pass	DS-15
R-83	54	54			-	W45	Patch	24.0 ft	x	1.5 ft	83	8/1	MV	Pass	Between 54 and 54
R-84	52	54	55		SK	G56	Patch	3.0 ft	x	1.5 ft	71	8/3	MV	Pass	at intersection

REPAIR RECORD

Client Name: Des Moines County Solid Waste Commision
Project Location: 13758 Washington Rd
West Burlington, IA 52655

SCS Engineers Project Name: Cell D1-D2

SCS Engineers Project Number: 27224417.00

SCS Engineers CQA Technician: Clayton Davis
Chris Calhoun

Date of Interest Note if blank will consider all dates.
 enter mm-dd-yy

"x" indicates criteria applies to this project

Population:

Destruct Test Frequency (1 per)

Number of Required Destructs

x		
Total Seam	Machine	Welder
750 ft	750 ft	750 ft
3 ea	6 ea	19 ea

Minimum # of Destructs Required

3 ea

For Project Period

Repair Number	Panel/Seam				Repairer Initials	Machine Number	Repair Type	Repair size			Trial Weld Number	Test Date dd-mm-yy	Tester Initials	Test P/F	Location/Comments (Tech #)
								Length (ft)		Width (ft)					
R-85	54	56	55		SK	G56	Patch	2.5 ft	x	1.5 ft	71	8/3	MV	Pass	at intersection
R-86	56	57	55		SK	G56	Patch	3.0 ft	x	2.0 ft	71	8/3	MV	Pass	at intersection
R-87	56	57	58		SK	G56	Patch	4.0 ft	x	2.0 ft	71	8/3	MV	Pass	at intersection
R-88	58	59	60		SK	G56	Patch	2.0 ft	x	1.5 ft	71	8/3	MV	Pass	at intersection
R-89	58	60	61		SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/3	MV	Pass	at intersection
R-90	58	61	62		SK	G56	Patch	1.5 ft	x	1.5 ft	71	8/3	MV	Pass	at intersection
R-91	58	62	63		SK	G56	Patch	1.5 ft	x	1.0 ft	71	8/3	MV	Pass	at intersection
R-92	58	63	64		SK	G56	Patch	1.5 ft	x	1.0 ft	71	8/3	MV	Pass	at intersection
R-92	57	58	64		SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/3	MV	Pass	at intersection
R-93	57	77	64		SK	G56	Patch	5.0 ft	x	1.5 ft	71	8/3	MV	Pass	at intersection
R-94	77	64	65		ML	G44	Patch	1.5 ft	x	1.0 ft	72	8/3	MV	Pass	at intersection
R-95	77	65	66		ML	G44	Patch	2.0 ft	x	1.5 ft	72	8/3	MV	Pass	at intersection
R-96	77	66	67		ML	G44	Patch	2.0 ft	x	1.5 ft	72	8/3	MV	Pass	at intersection
R-97	77	67	68		ML	G44	Patch	1.5 ft	x	1.5 ft	72	8/3	MV	Pass	at intersection
R-98	77	69	70		ML	G44	Patch	2.0 ft	x	2.0 ft	72	8/3	MV	Pass	at intersection
R-99	77	70	71		ML	G44	Patch	2.5 ft	x	1.5 ft	72	8/3	MV	Pass	at intersection
R-100	77	71	72		ML	G44	Patch	1.5 ft	x	2.0 ft	72	8/3	MV	Pass	at intersection
R-101	77	72	73		ML	G44	Patch	1.0 ft	x	3.0 ft	72	8/3	MV	Pass	at anchor trench
R-102	59	60			SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/3	MV	Pass	at the end of anchor trench
R-103	60	61			SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/3	MV	Pass	at the end of anchor trench
R-104	61	62			SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/3	MV	Pass	at the end of anchor trench
R-105	63	64			SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/3	MV	Pass	at the end of anchor trench
R-106	65	66			SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/2	MV	Pass	at the end of anchor trench
R-107	62	63			SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/2	MV	Pass	at the end of anchor trench
R-108	64	65			SK	G56	Patch	1.5 ft	x	1.5 ft	71	8/2	MV	Pass	at the end of anchor trench
R-109	66	67			SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/2	MV	Pass	at the end of anchor trench
R-110	62	68			SK	G56	Patch	1.0 ft	x	1.5 ft	71	8/2	MV	Pass	at the end of anchor trench
R-111	68	69			ML	G44	Patch	1.5 ft	x	1.0 ft	72	8/3	MV	Pass	at the end of anchor trench

REPAIR RECORD

Client Name: Des Moines County Solid Waste Commision
Project Location: 13758 Washington Rd
West Burlington, IA 52655

SCS Engineers Project Name: Cell D1-D2

SCS Engineers Project Number: 27224417.00

SCS Engineers CQA Technician: Clayton Davis
Chris Calhoun

Date of Interest Note if blank will consider all dates.
 enter mm-dd-yy

"x" indicates criteria applies to this project

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Destruct Test Frequency (1 per)

Number of Required Destructs

x		
Total Seam	Machine	Welder
750 ft	750 ft	750 ft
3 ea	6 ea	19 ea

Minimum # of Destructs Required

3 ea

For Project Period

Repair Number	Panel/Seam			Repairer Initials	Machine Number	Repair Type	Repair size			Trial Weld Number	Test Date dd-mm-yy	Tester Initials	Test P/F	Location/Comments (Tech #)
							Length (ft)		Width (ft)					
R-112	69	70		ML	G44	Patch	2.0 ft	x	1.5 ft	72	8/3	MV	Pass	at the end of anchor trench
R-113	70	71		ML	G44	Patch	1.5 ft	x	1.0 ft	72	8/3	MV	Pass	at the end of anchor trench
R-114	71	72		ML	G44	Patch	1.0 ft	x	1.5 ft	72	8/3	MV	Pass	at the end of anchor trench
R-115	72	73		ML	G44	Patch	1.5 ft	x	1.0 ft	72	8/3	MV	Pass	at the end of anchor trench
R-116	73	74		ML	G44	Patch	1.5 ft	x	1.0 ft	72	8/3	MV	Pass	at the end of anchor trench
R-117	74	75		ML	G44	Patch	2.5 ft	x	4.5 ft	72	8/3	MV	Pass	at the north seam edge of the anchor trench
R-118	75	76		ML	G44	Patch	1.0 ft	x	1.5 ft	72	8/3	MV	Pass	at the end of anchor trench
R-119	77	65		ML	G44	Patch	2.0 ft	x	2.0 ft	72	8/2	MV	Pass	at the end of anchor trench
R-120	58	59		ML	G44	Patch	2.0 ft	x	1.5 ft	72	8/3	MV	Pass	7' north of intersection
R-121	55	57		ML	G44	Patch	1.5 ft	x	2.5 ft	72	8/3	MV	Pass	30' north of anchor trench
R-122	55	77		ML	G44	Patch	1.5 ft	x	1.5 ft	72	8/3	MV	Pass	at anchor trench
R-123	46	44		SK	G56	Patch	2.0 ft	x	1.5 ft	88	8/2	MV	Pass	31' north of DS-16
R-124	46	44		SK	G56	Patch	1.5 ft	x	2.0 ft	88	8/1	MV	Pass	51' south of DS-16
R-125	74	75		ML	G44	Patch	1.5 ft	x	1.0 ft	89	8/2	MV	Pass	at the north seam edge anchor trench
R-126	73	72		ML	G44	Patch	1.5 ft	x	5.5 ft	89	8/3	MV	Pass	DS-19
R-127	63	62		ML	G44	Patch	2.0 ft	x	6.0 ft	89	8/4	MV	Pass	DS-20
R-128	77	69		ML	G44	Patch	2.0 ft	x	5.0 ft	89	8/4	MV	Pass	DS-21
R-129	R-81	46		SK	G56	Patch	2.0 ft	x	5.5 ft	72	8/2	MV	Pass	DS-18
R-130	R-126	73		ML	G44	Patch	2.5 ft	x	5.0 ft	90	8/4	MV	Pass	DS-22
R-131	40	39		ML	G44	Patch	2.5 ft	x	6.0 ft	90	8/4	MV	Pass	DS-11A
R-132	40	39		ML	G44	Patch	2.5 ft	x	10.0 ft	93	8/4	MV	Pass	DS-11B
R-133	43	45		ML	G44	Patch	1.5 ft	x	5.5 ft	93	8/4	MV	Pass	DS-23
R-134	47	49		ML	G44	Patch	1.5 ft	x	6.0 ft	93	8/4	MV	Pass	DS-24
R-135	38	T-1		ML	G44	Patch	5.0 ft	x	1.5 ft	93	8/4	MV	Pass	DS-25
R-136	38	40	T-1	SK	G56	Patch	1.0 ft	x	1.5 ft	92	8/4	MV	Pass	at intersection
R-137	40	42	T-1	SK	G56	Patch	1.0 ft	x	1.0 ft	94	8/4	MV	Pass	at intersection
R-138	52	50	T-1	SK	G56	Patch	8.5 ft	x	9.0 ft	94	8/4	MV	Pass	at intersection
R-139	52	54		SK	G56	Patch	1.0 ft	x	1.5 ft	94	8/4	MV	Pass	10' south of north tie in

REPAIR RECORD

Client Name:	<i>Des Moines County Solid Waste Commision</i>
Project Location:	<i>13758 Washington Rd</i>
	<i>West Burlington, IA 52655</i>

SCS Engineers Project Name: Cell D1-D2

SCS Engineers Project Number: 27224417.00

SCS Engineers CQA Technician: Clayton Davis
Chris Calhoun

Date of Interest	Note if blank
enter mm-dd-yy	will consider
	all dates.

"x" indicates criteria applies to this project

Population:

Destruct Test Frequency (1 per)

Number of Required Destructs

	x		
n:	Total Seam	Machine	Welder
r)	750 ft	750 ft	750 ft
ts	3 ea	6 ea	19 ea

Minimum # of Destructs Required

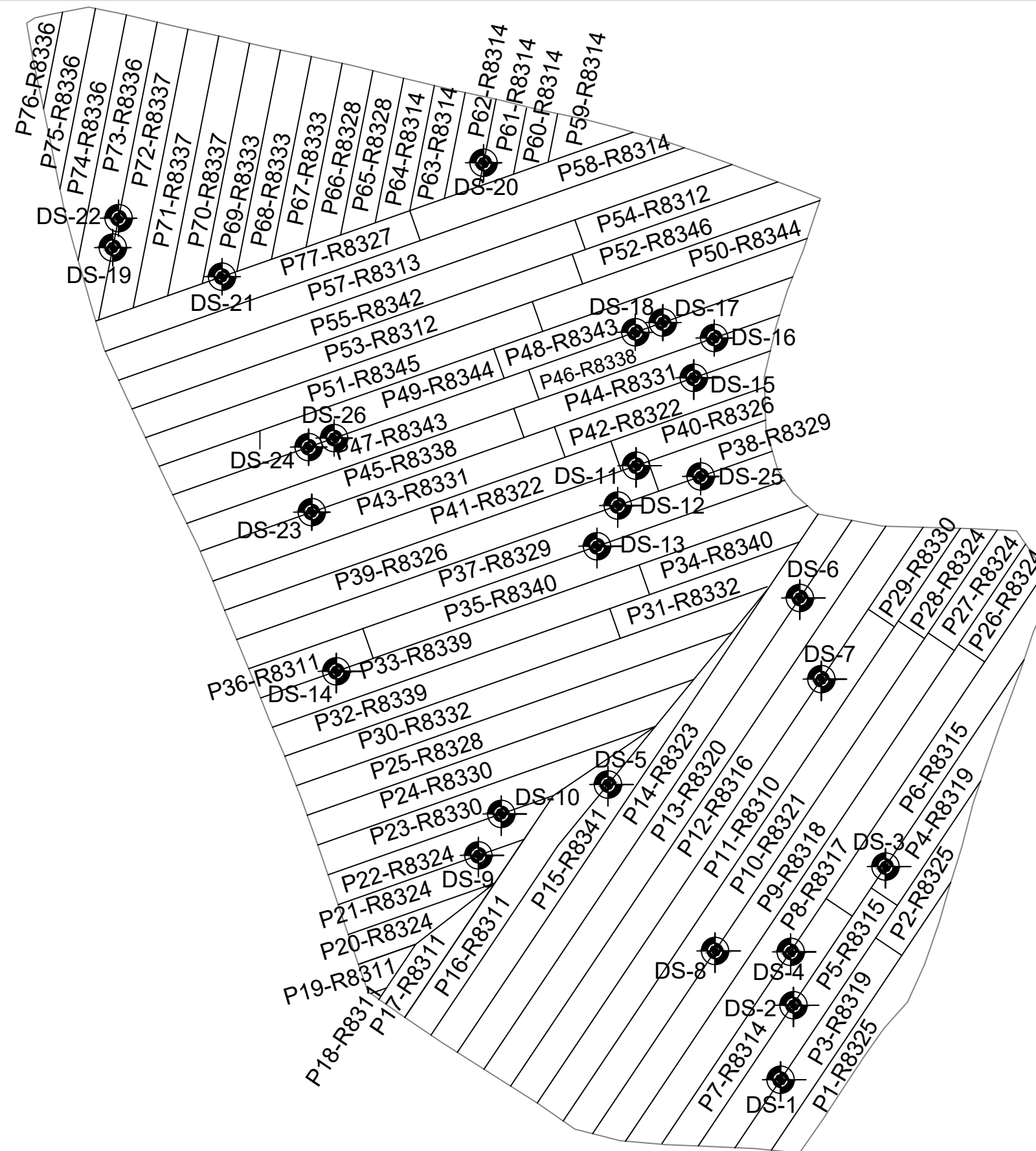
3 ea

For Project Period[illegible]



Appendix D9

Geomembrane Panel Map



1. This panel layout is tentative and may be revised by the qualified Texas Environmental Plastics, Ltd site manager with the approval of the field engineer to suit field conditions at time of installation. All such changes will be reflected in the as-built drawings.
2. The panel end seams are not shown for clarity.

Date	Revision	By	Descriptions
9/12/25	1	VG	AS BUILT HDPE LAYOUT
9/5/25	0	VG	AS BUILT HDPE LAYOUT



Texas Environmental Plastics, Ltd.
Installers, Fabricators & Distributors of Environmental Lining Systems
29089 Robinson, Conroe Texas
Tel: 281/821-7320 - Fax: 281/821-7138

Des Moines Abutment D1 & D2
West Burlington, IA



Appendix E

Leachate Collection System Test Results



Appendix E1

Leachate Drainage Material Gradation Reports

ASTM C136

4111 E. 60th Street
Davenport, IA 52807
Phone: 563-359-1348
Fax: 563-359-3295

Client:
DeLong Construction Inc.
1320 North 8th Ave
PO Box 488
Washington, IA 52353

Project:
25-2027 (4442)
DeLong Construction - DMC Landfill (4442)
13758 Washington Road
West Burlington, IA

General Information

Sample Number:	3466	Sample Date:	03/31/2025
Sample From:	Unknown	Sampling Method:	Not Provided
Location Details:	Client Drop-Off		
Material Description:	Sand	Technician:	Nicholas Lerud

Test Results

Specification: General Aggregate Gradation **Variant:** Standard Aggregate Sieves (2" to #200)

Sieve Size	Percent Passing	Percent Retained	Cumulative Fraction Retained	Result
9.5 mm (3/8 inch)	100	0		Pass
4.75 mm (No. 4)	100	0		Pass
2.36 mm (No. 8)	100	0		Pass
1.18 mm (No. 16)	99	1		Pass
600 µm (No. 30)	90	10		Pass
300 µm (No. 50)	29	71		Pass
150 µm (No. 100)	2	98		Pass
75 µm (No. 200)	0.5	100		Pass
Pan	100	0		Pass

Loss By Washing ASTM C117 (%): 0.3

ASTM C136

4111 E. 60th Street
Davenport, IA 52807
Phone: 563-359-1348
Fax: 563-359-3295

Client:

DeLong Construction Inc.
1320 North 8th Ave
PO Box 488
Washington, IA 52353

Project:

25-2027 (4442)
DeLong Construction - DMC Landfill (4442)
13758 Washington Road
West Burlington, IA

Test Date: 04/01/2025

Lab Technician: Eric Walechka

ASTM C117

610 N. 4th Street
Suite 100
Burlington, IA 52601
Phone: 319-753-0816
Fax: 319-752-3605

Client:
DeLong Construction Inc.
1320 North 8th Ave
PO Box 488
Washington, IA 52353

Project:
25-2027 (4442)
DeLong Construction - DMC Landfill (4442)
13758 Washington Road
West Burlington, IA

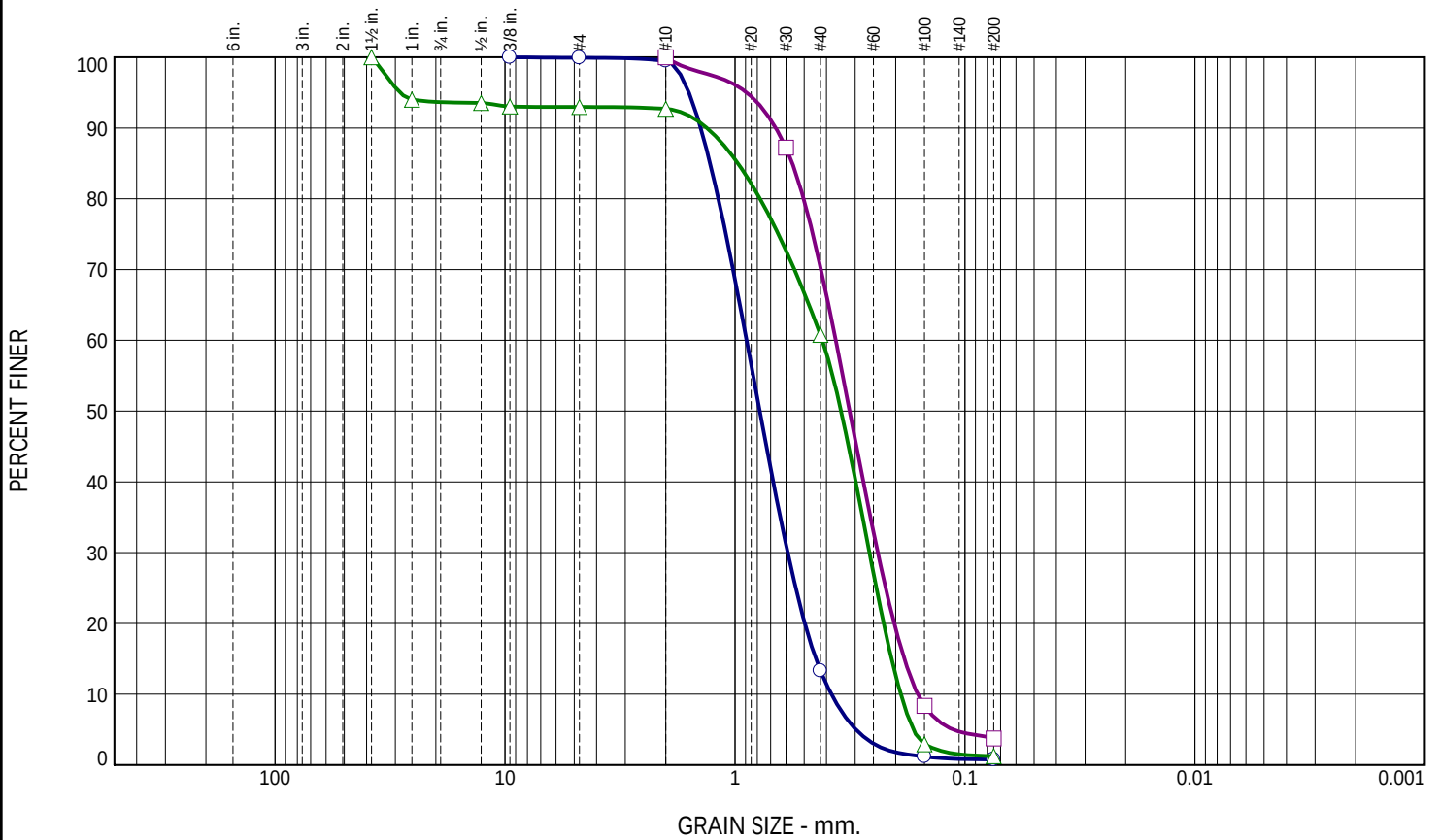
General Information

Sample Number:	3466	Sample Date:	03/31/2025
Sample From:	Unknown	Sampling Method:	Not Provided
Location Details:	Client Drop-Off		
Material Description:	Sand	Technician:	Nicholas Lerud

Test Results

<u>Before Wash</u>			
Dry Mass (grams):	500.00	Procedure Used:	A - With Plain Water
<u>After Wash</u>			
Dry Mass Wash on 75 µm (No. 200) Sieve (grams):	498.41	% Finer than 75 µm (No. 200) Sieve:	0.3
Test Completed Date:	04/01/2025	Test Completed By:	Nicholas Lerud

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PL	PI
○	0.0	0.1	99.1	0.8		SP			
□	0.0	0.0	96.3	3.7		SP			
△	0.0	7.0	91.8	1.2		SP			

SIEVE inches size	PERCENT FINER		
	○	□	△
1 1/2"			100.0
1"			94.0
1/2"			93.5
3/8"	100.0		93.0
GRAIN SIZE			
D ₆₀	0.8903	0.3645	0.4168
D ₃₀	0.5897	0.2392	0.2602
D ₁₀	0.3810	0.1605	0.1902
COEFFICIENTS			
C _c	1.03	0.98	0.85
C _u	2.34	2.27	2.19

SIEVE number size	PERCENT FINER		
	○	□	△
#4	99.9		93.0
#10	99.5	100.0	92.7
#30		87.2	
#40	13.3		60.8
#100	1.2	8.3	2.9
#200	0.8	3.7	1.2

Material Description
○ Poorly Graded Sand (SP), Yellow Brown, Medium to Fine, Moist
□ Poorly Graded Sand (SP), Yellow Brown, Fine to Medium, Moist
△ Poorly Graded Sand (SP), Yellow Brown, Fine to Medium, Trace Gravel, Moist

REMARKS:
○
□
△

○ Location: On-Site Material: 3,000-6,000 CY (Rec'd 8/25/25) Sample Number: 13
 □ Location: On-Site Material: 6,000-9,000 CY (Rec'd 8/25/25) Sample Number: 14
 △ Location: On-Site Material: 9,000-12,000 CY (Rec'd 8/29/25) Sample Number: 15

GEOTECHNICS
Soil & Material Testing

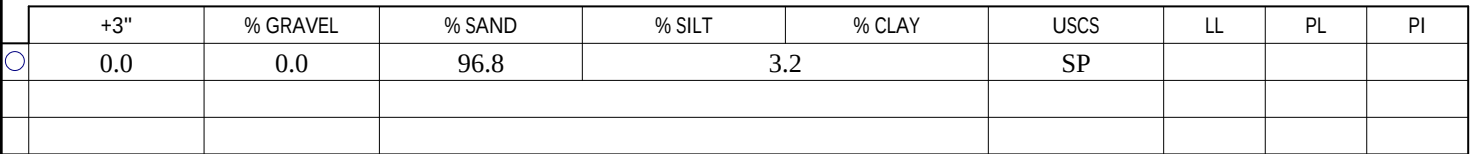
4510 Paris Gravel Road - Hannibal, MO

Client: DeLong Construction, Inc.
 Project: Des Moines County (DMC) Landfill
 Project No.: 25-2027 (4442)

Figure

Tested By: DJS Checked By: DJS

PERCENT FINER



REMARKS:	

Tested By: MAS Checked By: DJS



Appendix E2

Leachate Drainage Material Permeability Reports

Constant Head Permeability Test

(ASTM D2434)

Client: DeLong Construction, Inc. **Date** 4/11/2025

Project: Des Moines County (DMC) Landfill **Project #** 25-2027

Location: Des Moines County, IA

Description: Poorly Graded Sand (SP), Light Brown, Fine to Medium, Moist

Length of the specimen, L (cm) 17.78 cm

Diameter of the specimen, D (cm) 11.4046 cm

Area of the specimen, A (cm²) 102.1526 cm

Test No.	Discharge volume, Q (cm ³)	Time of collection, t (s)	Head difference, h (cm)	$k = \frac{QL}{Aht}$ (cm/s)
1	2	3	4	5
1	1528	78	113.03	0.03016
2	1157	60	113.03	0.02969
3	1249	60	113.03	0.03206
4	1597	60	113.03	0.04099

Average permeability, k (cm/s) = $0.03323 = 3.37 \times 10^{-2}$

Remarks: $K_{20} = (0.03323) * (1.1087) = \underline{\underline{3.7 \times 10^{-2}}}$

NAS

Technician



Constant Head Permeability Test

(ASTM D2434)

Client: DeLong Construction, Inc. **Date** 8/27/2025

Project: Des Moines County (DMC) Landfill **Project #** (4442)
25-2027

Location: Des Moines County, IA (3000 to 6000 CY)

Description: Poorly Graded Sand (SP), Yellow Brown, Fine to Medium, Moist

Length of the specimen, L (cm) 18.48 cm

Diameter of the specimen, D (cm) 11.42 cm

Area of the specimen, A (cm²) 102.43 cm

Test No.	Discharge volume, Q (cm ³)	Time of collection, t (s)	Head difference, h (cm)	$k = \frac{QL}{Aht}$ (cm/s)
1	2	3	4	5
1	1669	60	111.5	0.0450
2	1700	60	111.5	0.0458
3	1731	60	111.5	0.0467
4	1788	60	111.5	0.0482

Average permeability, k (cm/s) = 0.0464 = 4.62x10⁻²

Remarks: $K_{20} = (0.0464) * (0.909834) = \underline{4.23 \times 10^{-2}}$

DJS

Technician



Constant Head Permeability Test

(ASTM D2434)

Client: DeLong Construction, Inc. **Date** 8/27/2025

Project: Des Moines County (DMC) Landfill **Project #** (4442)
25-2027

Location: Des Moines County, IA (6000 to 9000 CY)

Description: Poorly Graded Sand (SP), Yellow Brown, Fine to Medium, Moist

Length of the specimen, L (cm) 20.60 cm

Diameter of the specimen, D (cm) 11.42 cm

Area of the specimen, A (cm²) 102.43 cm

Test No.	Discharge volume, Q (cm ³)	Time of collection, t (s)	Head difference, h (cm)	$k = \frac{QL}{Aht}$ (cm/s)
1	2	3	4	5
1	1235	60	111.5	0.0371
2	1302	60	111.5	0.0391
3	1318	60	111.5	0.0396
4	1395	60	111.5	0.0419

Average permeability, k (cm/s) = 0.0395 = 3.95x10⁻²

Remarks: $K_{20} = (0.0395) * (0.909834) = \underline{\underline{3.59 \times 10^{-2}}}$

DJS

Technician



Constant Head Permeability Test

(ASTM D2434)

Client: DeLong Construction, Inc. **Date** 9/02/2025

Project: Des Moines County (DMC) Landfill **Project #** (4442)
25-2027

Location: Des Moines County, IA (9000 to 12000 CY)

Description: Poorly Graded Sand (SP), Yellow Brown, Fine to Medium, Trace Gravel, Moist

Length of the specimen, L (cm) 20.38 cm

Diameter of the specimen, D (cm) 11.42 cm

Area of the specimen, A (cm²) 102.43 cm

Test No.	Discharge volume, Q (cm ³)	Time of collection, t (s)	Head difference, h (cm)	$k = \frac{QL}{Aht}$ (cm/s)
1	2	3	4	5
1	1734	60	111.5	0.0516
2	1818	60	111.5	0.0541
3	1729	60	111.5	0.0514
4	1888	60	111.5	0.0562

Average permeability, k (cm/s) = 0.0533 = 5.33x10⁻²

Remarks: $K_{20} = (0.0533) * (0.909834) = \underline{5.03 \times 10^{-2}}$

DJS

Technician



Constant Head Permeability Test

(ASTM D2434)

Client: DeLong Construction, Inc. **Date** 9/19/2025

Project: Des Moines County (DMC) Landfill **Project #** (4442)
25-2027

Location: Des Moines County, IA (12000 to 15000 CY)

Description: Poorly Graded Sand (SP), Yellow Brown, Fine to Medium, Trace Clay Clumps,
Moist

Length of the specimen, L (cm) 18.22 cm

Diameter of the specimen, D (cm) 11.42 cm

Area of the specimen, A (cm²) 102.43 cm

Test No.	Discharge volume, Q (cm ³)	Time of collection, t (s)	Head difference, h (cm)	$k = \frac{QL}{Aht}$ (cm/s)
1	2	3	4	5
1	1960	60	111.5	0.0524
2	2041	60	111.5	0.0543
3	2015	60	111.5	0.0536
4	2011	60	111.5	0.0535

Average permeability, k (cm/s) = 0.0534 = 5.34x10⁻²

Remarks: $K_{20} = (0.0533) * (0.962387) = \underline{5.14 \times 10^{-2}}$

DJS

Technician





Appendix F

Daily Field Activities Reports

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 5, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	10:00am
SCS Engineers Project No:	27224417.00	Stop Time:	4:30pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Mostly Cloudy - 65 F, Wind 10-15 mph NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (9), Excavator (2), Haul trucks (3), GPS dozer (2), Pipe welder

Work Areas/Boundaries

Cell D1-D2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

10:00 - Arrived on site, talked to Eric H (DMC) in office and picked up 4 gas meter

11:00 - DeLong is excavating waste from SE corner of Cell D1-D2, and capping cleanout from Change Order #1

11:30 - DeLong finished cutting cleanouts

13:40 - DeLong finished capping cleanouts

13:50 - Moving soil and starting to grade subgrade

16:30 - Work complete. Contractor offsite.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 6, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30am
SCS Engineers Project No:	27224417.00	Stop Time:	4:30pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 73 F, Wind 5-10 mph NW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cell D1-D2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site

8:00 - Discussion with Kasi and Eric W (SCS) about gas vent location that Dennis (DeLong) had questions about. Also discussed additional topics in relation to the future berm, and subgrade testing procedure.

10:30 - Discussion with Eric H and Jesse (DMC) and Dennis (DeLong) about FML tie-in location and gas vent location on top of hill.

10:50 - Discussion with Eric W (SCS) about tie-in location and have DeLong chase FML to SE corner.

13:50 - DeLong uncovered FML of Cell 5 for tie in

16:30 - Work complete. Contractor offsite.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 7, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30am
SCS Engineers Project No:	27224417.00	Stop Time:	4:30pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 76 F, Wind 5-10 mph NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cell D1-D2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS arrived on site

9:00 - DeLong continue excavating waste and soil to expose FML liner of adjacent cells

10:30 - DeLong continue to excavate waste and soil, separating materials as appropriate

14:00 - Talked to Dan H (DeLong), they will be doing general fill until end of next week

15:00 - Talked to Eric H (DMC) about general fill schedule, still wants CQA on site to watch construction

16:30 - Crew left for the day.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 8, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30am
SCS Engineers Project No:	27224417.00	Stop Time:	4:30pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 78 F, Wind 5-10 mph NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator, Haul trucks (3), GPS dozer (2), mini excavator.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Filled Haul truck for subgrade proof roll

Tests Completed/Observed

Subgrade proof roll

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived onsite
7:30 - Talked to Dan H (DeLong), want proof roll after survey is done
8:00 - Survey crew on site, work stopped
10:30 - Work resumed on grading SW section
11:30 - Survey crew left site
11:40 - Proof roll started
13:30 - Proof roll ended
15:30 - Failed proof roll areas are identified and described on map
15:45 - Dennis (DeLong) verified map
16:30 - Crew left for day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 9, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30am
SCS Engineers Project No:	27224417.00	Stop Time:	4:15pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 78 F, Wind 0-5 mph NW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator, Haul trucks (3), GPS dozer (2), mini excavator.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site
7:40 - Talked to Dan H (DeLong) about progress, all is going good
9:50 - Done exposing east FML, subgrade and FML are same elevation
10:35 - Talked to Eric H (DMC), will get key to office to hold nuke gauge next week.
11:00 - Still excavating north area and exposing Cell 5 FML
16:15 - Crew left site.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 12, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	10:30am
SCS Engineers Project No:	27224417.00	Stop Time:	4:30pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 87 F, Wind 5-10 mph NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

10:30 - Arrived to site

11:25 - Started excavating southeast failed proof roll area

16:30 - Left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 13, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30am
SCS Engineers Project No:	27224417.00	Stop Time:	4:30pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 83 F, Wind 5-10 mph NW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator, Haul trucks (3), GPS dozer.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site

8:30 - Waste excavation started

8:45 - Talked to Eric H (DMC) to discuss vent change

14:45 - Finished southeast failed proof rolled excavation

15:30 - Finished failed proof rolled excavation

16:00 - Left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 14, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30am
SCS Engineers Project No:	27224417.00	Stop Time:	4:15pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 87 F, Wind 0-5 mph NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site

10:00 - Talked to Dennis (DeLong) about erosion control on site

10:15 - Talked to Matt K (SCS) about erosion control

10:30 - Continue to add soil for west and south berms

15:00 - Talked to Kasi (SCS) about updated schedule and survey work being done tomorrow 5/15

16:15 - Left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 15, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30am
SCS Engineers Project No:	27224417.00	Stop Time:	4:30pm
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 89 F, Wind 10-15 mph NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site, crew working on adding soil to the west and south sections
8:00 - DeLong surveyors arrive on site to locate failed proof roll areas
8:30 - Walked with surveyors around south section of failed proof roll areas, dirt hauling stopped
11:30 - Surveyors left site, dirt hauling resumed
12:35 - Crew started filling in failed proof roll areas
16:30 - Left site for the day.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 16, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	11:15 AM
SCS Engineers Project No:	27224417.00	Stop Time:	12:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Raining - 65 F, Wind 10-15 mph NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

11:15 - Arrived to site, rain continues and crew paused work for the rest of the day

11:30 - Walked with Dennis and Emmet (DeLong) to identify north failed proof roll area from existing survey points

12:00 - Finished walk, determined area was over-excavated from the previous map.

12:30 - Left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 27, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	9:40 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Cloudy - 73 F, Wind 10-15 mph NW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator, Haul trucks (3), GPS dozer, Mini-excavator.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

9:40 - Arrived to site. Discussed gas vent geotextile tie in, crew filling in the north portion of core out area.

10:00 - Grading vent tie in location

13:30 - Finished grading vent tie in, start of geotextile installation from south

15:20 - Second roll applied

16:30 - Crew left site for the day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 28, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:40 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy - 64 F, Wind 0-10 mph NNE

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (6), Excavator, Haul trucks (3), GPS dozer, Mini-excavator.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:40 - Arrived to site, finishing gas vent installation and north core out filling

8:40 - Gas vent installed

12:00 - North core out filling continues

15:00 - North leachate and groundwater piping coordination starts

16:30 - Crew left site for the day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 29, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Sunny - 70 F, Wind 0-10 mph NW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, north core out filling, fine grading, excavation for north pipe installation

8:10 - Rock delivered to site

11:35 - Fine grading started in southeast section

14:20 - Excavation starts for north leachate/groundwater piping

16:30 - Crew left site for the day

Material(s) Delivered to Site

Rock for north piping

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	May 30, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 83F, Wind 5-15 mph NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator, Haul trucks (3), GPS dozer (2), 3rd Party Suveyor Crew.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site, north core out filling, fine grading, excavation for north pipe installation

9:00 - Excavated leachate tie in location and prep for cut and welding

11:35 - Fine grading in SE corner in final stages

14:00 - 3rd party surveyor on-site for SE half of subgrade survey

15:30 - 3rd party suveyor left site

16:30 - Crew left site for the day

Material(s) Delivered to Site

Rock for north piping

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 2, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	9:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 86 F, Wind 5-10 mph SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge initial testing

Tests Completed/Observed

Preliminary lift 1 tests for the middle-cut section.

Work Comments/Observations and Timeline of Notable Events

9:50 - Arrived to site, north pipes trench installation, clay liner being applied, and North fine grading

13:00 - 3rd party surveyor arrive to site

14:15 - 3rd party surveyor left site

15:25 - Start of clay liner tests in SE area

15:55 - Completed two liner tests

16:30 - Crew left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 3, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:40 AM
SCS Engineers Project No:	27224417.00	Stop Time:	11:30 AM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy and raining - 73 F, Wind 5-10 mph SSW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator, Haul trucks (3), GPS dozer (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:40 - Arrived to site, clay liner being applied

8:30 - Continued density/moisture test on clay liner

11:30 - Crew left for day, rained out

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 6, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	9:40 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly sunny - 82 F, Wind 0-5 mph SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (8), Excavator, Haul trucks (3), GPS dozer (2), pipe welder.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

9:40 - Arrived to site, clay liner being applied, north pipe run being installed

12:00 - Continued density/moisture test on clay liner

13:20 - Pipe installation continuing, clay liner application continuing

16:30 - Crew left site for the day.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 9, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	8:10 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly sunny - 70 F, Wind 5-15 mph SSW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (6), Excavator, Haul trucks (3), GPS dozer (2), sheep's foot roller.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

8:10 - Arrived to site, clay liner being applied, north pipe run being installed

8:40 - Continuing density/moisture test on clay liner

10:30 - Pipe installation continuing, clay liner application continuing

11:40 - Continuing density/moisture test on clay liner

13:45 - Last rows today for clay liner going down

16:30 - Crew left site for the day.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 10, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 78 F, Wind 5-15 mph SSW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, clay liner being applied, north pipe run being installed

7:20 - Continuing density/moisture test on clay liner

10:10 - 2nd lift started

11:40 - Continuing density/moisture test on clay liner

13:45 - Leachate piping excavation started

16:30 - Crew left site for the day.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 11, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 88 F, Wind 0-10 mph W

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, clay liner being applied, north pipe run being installed

7:20 - Continuing density/moisture test on clay liner

12:20 - 1st lift testing completed, areas need watering still to pass

12:45 - 2nd lift testing started

16:30 - Crew left site for the day.

Material(s) Delivered to Site

Watering wagon

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 11, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy - 78 F, Wind 0-10 mph SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, clay liner being applied, north pipe run being installed

7:20 - Continuing density/moisture test on clay liner

10:30 - Clay liner testing caught up.

10:40 - Watering starting on dry areas.

14:00 - Continued watering dry areas and laying pipe.

16:30 - Crew left site for the day.

Material(s) Delivered to Site

Watering wagon

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 13, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy - 75 F, Wind 0-10 mph SSW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, water being applied to clay liner**, north pipe run being installed

10:20 - Continuing density/moisture test on clay liner

16:30 - Crew left site for the day

**Soil testing periodically throughout the day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 16, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	8:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 86 F, Wind 0-10 mph S

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

8:50 - Arrived to site, water being applied to clay liner

7:15 - Continuing density/moisture test on clay liner**

13:00 - Crew peeling back FML and surveying tie in elevations

16:30 - Crew left for the day

**Soil testing periodically throughout the day

Material(s) Delivered to Site

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 17, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	7:00 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Sunny - 87 F, Wind 5-10 mph SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

7:00 - Arrived to site, water being applied to clay liner

*7:30 - Continuing density/moisture test on clay liner***

13:00 - Crew exposing FML tie-ins and re-surveying tie in elevations

16:30 - Crew left for the day

***Soil testing periodically throughout the day*

Material(s) Delivered to Site

Tractor and soil disc

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 18, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	1:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Rainy - 74 F, Wind 0-10 mph SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, water being applied to clay liner, re-surveying tie in elevations

*7:15 - Continue density/moisture test on clay liner***

7:20 - Crew peeling back FML and re-surveying tie in elevations

8:20 - Rain starting on site, crew continuing to disc clay liner

13:30 - Crew left for the day due to wet conditions

***Soil testing periodically throughout the day*

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 20, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	9:00 AM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Rainy - 74 F, Wind 5-10 mph SSW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck.

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site, compacting clay liner

6:40 - Continuing density/moisture test on clay liner

8:20 - Rain starting on site, crew continuing to disc clay liner

9:00 - Crew left for the day due to muddy conditions.

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 23, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	9:10 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 91 F, Wind 5-10 mph SSW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (9), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

9:10 - Arrived to site, compacting clay liner, leachate collection pipe being welded

9:30 - Continued denisty/moisture test on clay liner**

10:30 - 1st lift tests completed

11:10 - Pipe welding completed for the day

16:30 - Crew left for the day

**Soil testing periodcally throughout the day

Material(s) Delivered to Site

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 24, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	2:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy - 90 F, Wind 0-10 mph SSE

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site, installing second lift of clay liner

14:30 - SCS left site to obtain new nuke gauge

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 25, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 90 F, Wind 5-10 mph SSE

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller, water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:30 - Arrived to site, installing second lift of clay liner

7:15 - Continuing density/moisture test on clay liner**

13:00 - Work paused due to storm

13:30 - Work resumed

16:30 - Crew left for the day

**Soil testing periodically throughout the day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 26, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	7:20 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 90° F, Wind 10-15 mph from SSW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

7:20 - Arrived to site, DeLong placing third lift of clay liner.

8:00 - DeLong compacted the 2nd lift of clay liner on the east and south sides of D1/D2 to prepare for density/moisture testing.

8:45 - SCS completed density/moisture tests on previously failing grids for the 2nd lift of clay liner**

9:30 - DeLong used a water truck to moisture condition the third lift of clay liner. This activity continued periodically throughout the day.

10:00 - DeLong began compacting the placed portions of the 3rd lift of clay liner.

11:30 - SCS began testing the third lift of clay liner.

4:20 - DeLong and SCS left the site for the day.

**Soil testing periodically throughout the day

Material(s) Delivered to Site

N/A

Chris Calhoun

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 27, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	7:00 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:15 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 86° F, Wind 5-10 mph from W

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

7:00 - Arrived to site, DeLong cleaning up haul roads/borrow after overnight rain. DeLong had disced up the remaining failing lift 2 grids.

8:00 - DeLong began hauling clay and continued placing the 3rd lift of clay liner, starting in the NW corner of D-2.

9:00 - Delong compacted the lift 2 grids that still required passing moisture/density tests.

*11:00 - SCS completed density/moisture tests on previously failing grids for the 2nd lift of clay liner***

11:00 - Delong began compacting the placed portions of the 3rd lift of clay liner.

11:45 - SCS began testing the third lift of clay liner. First test was low on compaction, DeLong to roll area more with compactor.

2:00 - DeLong moisture conditioned the 3rd lift of clay liner.

3:30 - SCS performed more density/moisture tests on the 3rd lift of clay liner.

4:15 - Delong and SCS left the site for the day.

***Soil testing periodically throughout the day*

Material(s) Delivered to Site

N/A

Chris Calhoun

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	June 30, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	8:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:15 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Sunny - 87° F, Wind 5-10 mph from NE

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

8:50 - Arrived to site, 3rd lift is being applied
9:30 - Klinger (Geotech) on site to push shelby tubes
10:40 - Klinger left site, DeLong continuing to apply 3rd lift
10:50 - Started soil testing**
16:15 - Crew left site for the day.

**Soil testing periodically throughout the day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 1, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 85° F, Wind 5-10 mph from S

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, DeLong continuing to apply third lift
7:30 - DeLong applying water to applied 3rd lift areas
9:00 - DeLong compacting applied 3rd lift areas, soil testing start**
13:00 - DeLong continuing to apply clay liner, water and compact
16:20 - Crew left for the day

**Soil testing periodically throughout the day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 2, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 86° F, Wind 0-10 mph from SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, DeLong continuing to apply third lift
7:30 - DeLong applying water to applied 3rd lift areas
9:00 - DeLong compacting applied 3rd lift areas, soil testing start**
13:00 - DeLong continuing to apply clay liner, water and compact
16:20 - Crew left for the day

**Soil testing periodically throughout the day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 3, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:50 AM
SCS Engineers Project No:	27224417.00	Stop Time:	3:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 88° F, Wind 5-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

6:50 - Arrived to site, DeLong continuing to apply third lift
7:30 - DeLong applying water to applied 3rd lift areas
9:00 - DeLong compacting applied 3rd lift areas, soil testing start**
13:00 - DeLong continuing to apply clay liner, water and compact
15:20 - Crew left for the day

**Soil testing periodically throughout the day

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 7, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	10:40 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 85° F, Wind 5-10 mph from SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

10:40 - Arrived to site, DeLong continuing to apply third lift
11:30 - DeLong applying water to applied 3rd lift areas
*11:50 - DeLong compacting applied 3rd lift areas, soil testing start***
14:00 - DeLong continuing to apply clay liner, water and compact
16:20 - Crew left for the day

***Soil testing periodically throughout the day*

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 8, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	7:00 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy - 80° F, Wind 0-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Nuclear Density Gauge (density and moisture testing)

Tests Completed/Observed

Density and moisture testing

Work Comments/Observations and Timeline of Notable Events

7:00 - Arrived to site, DeLong continuing to apply third lift
7:20 - DeLong applying water to applied 3rd lift areas
7:25 - DeLong compacting applied 3rd lift areas, soil testing start**
12:15 - DeLong continuing to apply clay liner, water and compact
14:00 - Batch 1 of FML delivered to site
16:20 - Crew left for the day

**Soil testing periodically throughout the day

Material(s) Delivered to Site

1st Batch of FML

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 9, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	7:00 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 87° F, Wind 0-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (7), Excavator (2), Haul trucks (3), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

7:00 - Arrived to site, DeLong fine grading clay liner
8:15 - Batch 2 of FML delivered to site
9:00 - DeLong continues to finely grade clay liner
10:50 - Batch 3 of FML delivered to site
11:40 - DeLong continues to finely grade clay liner
14:30 - DeLong removes CMP in the northeast area for existing FML uncover
16:20 - Crew left site for the day

Material(s) Delivered to Site

2nd and 3rd Batch of FML

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 10, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	7:00 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 89° F, Wind 0-10 mph from SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator (2), Haul trucks (2), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

7:00 - Arrived to site, DeLong fine grading clay liner

7:10 - Batch 1 of geotextile

9:00 - DeLong continues to finely grade clay liner

16:20 - Crew left site for the day

Material(s) Delivered to Site

1st batch of geotextile

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 11, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:40 AM
SCS Engineers Project No:	27224417.00	Stop Time:	11:30 AM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Cloudy - 89° F, Wind 5-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), Haul trucks (1), GPS dozer (2), sheep's foot roller (1), water truck (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

7:00 - Arrived to site, DeLong fine grading clay liner

8:30 - Batch 4 of geotextile

9:00 - DeLong continues to finely grade clay liner

11:30 - SCS left site

Material(s) Delivered to Site

4th batch of FML

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 17, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	10:10 AM
SCS Engineers Project No:	27224417.00	Stop Time:	2:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Cloudy - 85° F, Wind 5-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator (1), GPS dozer (1), smooth drum roller (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

10:10 - Arrived to site, DeLong fine grading clay liner

11:20 - DeLong pumping water/silt from SE corner

11:40 - Batch 5 of FML delivered

13:30 - BCZ Surveyor on site for clay liner shots

14:20 - BCZ Surveyor left site

14:30 - SCS left site

Material(s) Delivered to Site

5th batch of FML

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 22, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	7:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 91° F, Wind 5-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (12), Fusion welder (3), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Fusion pressure testing

Tests Completed/Observed

Fusion pressure testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site

8:10 - Liner started to be deployed

8:20 - DeLong drum rolling clay liner

13:20 - Welding begins

15:50 - Air testing begins

16:30 - DeLong left site

19:30 - TEP and SCS left site

Material(s) Delivered to Site

N/A

Clayton Davis, Chris Calhoun

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 23, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	7:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 93° F, Wind 5-15 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (9), Fusion welder (3), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Fusion pressure testing

Tests Completed/Observed

Fusion pressure testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site
8:00 - Liner deployment begins, DeLong drum rolling clay liner
8:30 - Welding begins
13:40 - Airtesting begins
16:20 - DeLong left site
19:25 - SCS and TEP left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 24, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	7:35 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Sunny - 93° F, Wind 5-15 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (3), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Fusion pressure testing, vacuum box testing

Tests Completed/Observed

Fusion pressure testing, vacuum box testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site

8:00 - TEP welding tie in locations

8:30 - DeLong pumping NE corner

8:40 - Airtesting begins

15:20 - DeLong left site

19:35 - SCS and TEP left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 25, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:40 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy - 91 ° F, Wind 0-10 mph from SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (5), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Fusion pressure testing, vacuum box testing

Tests Completed/Observed

Fusion pressure testing, vacuum box testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site

8:00 - TEP welding repairs

8:15 - DeLong pumping NE corner

8:20 - Airtesting begins

12:20 - DeLong left site

16:40 - SCS and TEP left site

Material(s) Delivered to Site

Geosynthetic rain cover delivered to the site

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 28, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:15 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Cloudy - 91° F, Wind 5-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Vacuum box testing

Tests Completed/Observed

Vacuum box testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site, too wet to apply liner

7:15 - TEP applies fabric over liner

7:30 - Destructs 5-10 are cut and started repairs

10:40 - Vacuum box testing begins

10:45 - DeLong dewater site

13:30 - DeLong drum rolls clay liner

16:15 - DeLong, TEP, and SCS leave site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 29, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	7:45 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 92° F, Wind 5-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Fusion pressure testing

Tests Completed/Observed

Fusion pressure testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site, too wet to apply liner

7:15 - TEP applies fabric over liner

7:30 - DeLong dewater site

13:10 - Liner deployment begins

13:50 - Air testing begins

16:25 - DeLong leaves site

19:45 - TEP and SCS leave site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 30, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	7:45 AM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy - 76° F, Wind 5-15 mph from W

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site

7:00 - TEP starts repairs

7:45 - Due to weather, SCS, DeLong and TEP leave site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	July 31, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	7:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Cloudy - 77° F, Wind 5-20 mph from SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Air pressure testing

Tests Completed/Observed

air pressure testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site

7:00 - TEP starts FML installation

10:30 - DeLong rolls clay liner

13:25 - DeLong dewateres

13:50- Air pressure testing begins

16:00 - DeLong leaves site

19:20 - SCS and TEP leave site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 1, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	6:15 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 76° F, Wind 5-10 mph from SSW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Air testing, vacuum box testing

Tests Completed/Observed

Air testing, vacuum box testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site

7:15 - FML being applied

7:20 - Air testing begins

7:25 - Repairs begin

10:30 - DeLong left site

18:15 - SCS and TEP left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 2, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	6:00 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Cloudy - 77° F, Wind 0-10 mph from SW

Contractors, Personnel, and Equipment On Site

Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Air testing, vacuum box testing

Tests Completed/Observed

Air testing, vacuum box testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS and TEP arrive to site

7:00 - FML being applied

7:20 - Air testing begins

8:40 - Repairs begin

11:35 - Last panel laid

18:00 - SCS and TEP left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 3, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	7:00 AM
SCS Engineers Project No:	27224417.00	Stop Time:	3:00 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 77° F, Wind 5-10 mph from SWW

Contractors, Personnel, and Equipment On Site

Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (4), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Air testing, vacuum box testing

Tests Completed/Observed

Air testing, vacuum box testing

Work Comments/Observations and Timeline of Notable Events

7:00 - SCS and TEP arrive to site

7:25 - TEP starts repairs

8:00 - Testing begins

15:00 - SCS and TEP leave site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 4, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	5:40 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 78° F, Wind 0-10 mph from SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Vacuum box testing

Tests Completed/Observed

Vacuun box testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site

7:00 - TEP starts repairs

7:20 - Fabric installation begins

9:00 - DeLong leaves site

17:40 - SCS and TEP left site

Material(s) Delivered to Site

N/A

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 5, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	7:20 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 80° F, Wind 5-10 mph from SWW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Vacuum box testing

Tests Completed/Observed

Vacuum box testing

Work Comments/Observations and Timeline of Notable Events

6:30 - SCS, DeLong, and TEP arrive to site

7:00 - TEP starts repairs

7:40 - Fabric installation starts

11:15 - DeLong left site

11:40 - 3rd party surveyor shoots FML perimeter

14:00 - TEP complete with repairs and tie in

Material(s) Delivered to Site

Leachate pipe gravel

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 6, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:40 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:25 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Cloudy - 85° F, Wind 5-10 mph from SE

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (3), Excavator (1), GPS dozer (1), smooth drum roller (1), TEP Crew (7), Fusion welder (4), Extrusion welder (2).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

Vacuum box testing

Tests Completed/Observed

Vacuum box testing

Work Comments/Observations and Timeline of Notable Events

6:40 - SCS, DeLong, and TEP arrive to site

7:00 - TEP starts repairs

7:35 - Fabric installation starts, vacuum box testing starts

8:45 - DeLong fills in the north anchor trench, and other grading in the vicinity

14:20 - TEP left site, fabric installation complete

16:25 - DeLong and SCS left site

Material(s) Delivered to Site

Leachate pipe gravel

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 7, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:45 AM
SCS Engineers Project No:	27224417.00	Stop Time:	5:05 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Sunny - 81° F, Wind 5-10 mph from S

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (5), Excavator (1), GPS dozer (1), smooth drum roller (1), pipe fusion welder (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:45 - SCS DeLong arrive to site
7:20 - East pipe fabric being installed
8:00 - East pipe bedding (gravel) being installed
13:15 - Gravel leveling for constant grade
14:05 - East pipe being installed, fused to previously installed piping
15:55 - Cleanout pipe installed and fused
17:05 - SCS and DeLong left site

Material(s) Delivered to Site

Leachate pipe gravel

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 13, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	9:20 AM
SCS Engineers Project No:	27224417.00	Stop Time:	5:00 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 82° F, Wind 5-10 mph from NW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (2), smooth drum roller (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

9:20 - SCS arrive to site, DeLong covered pipe and pushing sand.

13:00 - DeLong continue to push sand from Cell 5 onto Cell D-1

15:15 - DeLong surveys crushed glass pile and marks NE corner of Cell 5

17:00 - SCS and DeLong left site

Material(s) Delivered to Site

Sand

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 14, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:45 AM
SCS Engineers Project No:	27224417.00	Stop Time:	3:00 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 83° F, Wind 0-10 mph from SE

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (2), smooth drum roller (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:45 - SCS and DeLong arrive to site

7:40 - First sand haul of the day arrive

7:45 - DeLong pushes sand

8:00 - DeLong pushes sand over lower leachate pipe

12:00 - DeLong continued pushing sand

15:00 - SCS left site

Material(s) Delivered to Site

Sand

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 21, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	9:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	3:00 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 78° F, Wind 0-10 mph from NE

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (2), smooth drum roller (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

9:30 - SCS arrive to site, DeLong pushing sand in D1 area

10:15 - DeLong adding soil to west D2 boundary for berm.

11:30 - DeLong pushes sand

14:00 - DeLong pushes sand in the northern portion of D1

15:00 - SCS left site

Material(s) Delivered to Site

Sand (drainage layer)

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 25, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	7:40 AM
SCS Engineers Project No:	27224417.00	Stop Time:	2:00 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 73° F, Wind 5-10 mph from NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (2), smooth drum roller (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

7:40 - SCS arrive to site, DeLong pushing sand in D2 area
8:30 - Fabric and rock being laid for mid-section leachate collection pipe
9:00 - 2' x 2' hole cut in liner in SE corner to release trapped gas
10:30 - Trapped gas appears to have escaped fully
12:00 - Leachate pipe rock and D2 sand sill being applied
14:00 - SCS left site

Material(s) Delivered to Site

Sand (drainage layer), rock (leachate collection pipe run)

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 26, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	8:00 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 75° F, Wind 0-10 mph from NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (2), smooth drum roller (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

8:00 - SCS arrive to site, DeLong pushing sand in D2 area, rock applied to leachate pipe run

10:00 - Pipe being installed and welded

10:10 - Sand being pushed to SE corner of D2

11:00 - North cleanout installed and welded

13:15 - Sand and pipe still being installed

16:30 - SCS and DeLong left site

Material(s) Delivered to Site

Sand (drainage layer), rock (leachate collection pipe run)

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	August 27, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	6:45 AM
SCS Engineers Project No:	27224417.00	Stop Time:	2:30 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Sunny - 75° F, Wind 0-10 mph from NNW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (2), smooth drum roller (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

6:45 - SCS and DeLong arrive to site, sand still pushing sand in D2 and pipe being covered

8:10 - Pipe being surveyed

8:45 - Rock being covered over pipe

10:00 - Sand still being applied to D2

12:25 - Fabric being laid over rock

14:30 - SCS left site

Material(s) Delivered to Site

Sand (drainage layer), rock (leachate collection pipe run)

Clayton Davis

Construction Observer

SCS ENGINEERS

DAILY FIELD ACTIVITIES REPORT

Client Name:	Des Moines County Regional Solid Waste Commis	Date:	September 3, 2025
SCS Engineers Project Name:	Cell D1-D2 Construction	Start Time:	10:30 AM
SCS Engineers Project No:	27224417.00	Stop Time:	4:00 PM
Project Location:	Des Moines County Sanitary Landfill		
	West Burlington, IA		

Weather Information

Partly Sunny - 75° F, Wind 5-10 mph from SW

Contractors, Personnel, and Equipment On Site

DeLong Construction crew (4), Excavator (1), GPS dozer (2), smooth drum roller (1).

Work Areas/Boundaries

Cells D-1 and D-2

Testing Equipment Used/Observed and Calibration/Re-Calibration Documentation

N/A

Tests Completed/Observed

N/A

Work Comments/Observations and Timeline of Notable Events

10:30 - SCS arrive to site, DeLong pushing sand in NW section

13:00 - DeLong continues to push sand in NW section

16:00 - SCS and DeLong leave site

Material(s) Delivered to Site

Sand (drainage layer)

Clayton Davis

Construction Observer

SCS ENGINEERS

Appendix G

Photo Log



Photo #1:

Date: 05/05/2025

Direction (facing): North

Description: Waste excavation near Cell 5 tie-in location.



Photo #2:

Date: 05/06/2025

Direction (facing): North

Description: Soil application for suitable subgrade



Photo #3:

Date: 05/06/2025

Direction (facing): Northwest

Description: Soil application for suitable subgrade



Photo #4:

Date: 05/07/2025

Direction (facing): Northeast

Description: Waste excavation for north pipe runs.



Photo #5:

Date: 05/07/2025

Direction (facing): North

Description: Exploratory excavation for existing east FML tie-in.



Photo #6:

Date: 05/08/2025

Direction (facing): West

Description: Proof roll test with failed area with rutting.



Photo #7:

Date: 05/08/2025

Direction (facing): South

Description: Existing FML tie-in exposure on eastern side of D1-D2



Photo #8:

Date: 05/09/2025

Direction (facing): North

Description: Existing FML tie-in (Cell 5) exposure.



Photo #9:

Date: 05/12/2025

Direction (facing): North

Description: Failed proof-rolled subgrade being excavated.



Photo #10:

Date: 05/27/2025

Direction (facing): North

Description: Geocomposite gas relief panel installation



Photo #11:

Date: 05/28/2025

Direction (facing): Southeast

Description: Gas relief vent installation.

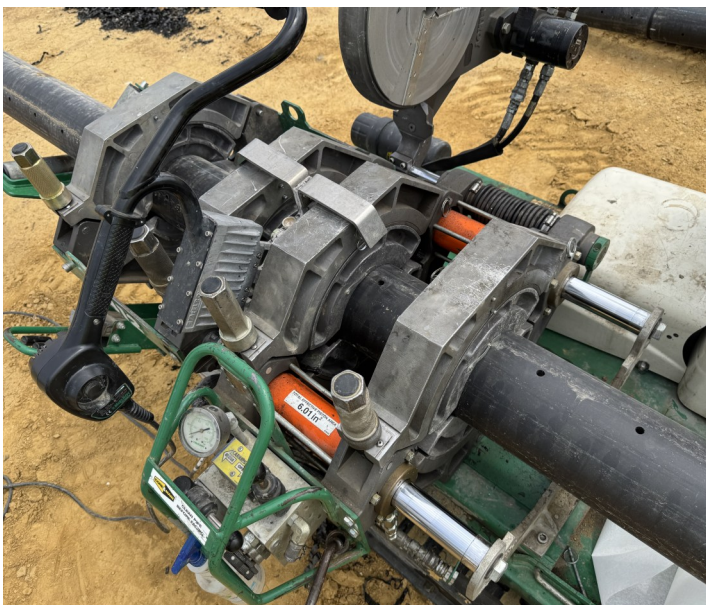


Photo #12:

Date: 05/29/2025

Direction (facing): Northeast

Description: Perforated HDPE leachate pipe fusion.



Photo #13:

Date: 05/29/2025

Direction (facing): East

Description: Fine grading of passed proof-roll subgrade.



Photo #14:

Date: 05/29/2025

Direction (facing): Northeast

Description: Excavation to uncover existing leachate collection pipe and groundwater underdrain cleanout in north boundary of D1-D2.



Photo #15:

Date: 06/06/2025

Direction (facing): North

Description: Compaction of first lift of clay liner installation.



Photo #16:

Date: 06/06/2025

Direction (facing): Southeast

Description: Leachate collection system piping installation along east boundary of Cell D1.



Photo #17:

Date: 06/09/2025

Direction (facing):

Description: Contractor spreading first lift of soil liner.



Photo #18:

Date: 06/10/2025

Direction (facing): East

Description: Contractor spreading and compacting second lift of soil liner.



Photo #19:

Date: 06/13/2025

Direction (facing): North

Description: Watering of clay liner to achieve proper moisture condition for the soil liner.



Photo #20:

Date: 06/30/2025

Direction (facing): East

Description: Contractor using an excavator bucket to collect soil liner shelly tube sample.



Photo #21:

Date: 07/10/2025

Direction (facing): Northwest

Description: GPS dozer being used for fine grading of soil liner surface.



Photo #22:

Date: 07/22/2025

Direction (facing): Northeast

Description: Geomembrane liner deployed along eastern tie in.



Photo #23:

Date: 07/22/2025

Direction (facing): East

Description: Extrusion welding along existing geomembrane liner and installed liner.



Photo #24:

Date: 07/23/2025

Direction (facing): North

Description: Double fusion welding along adjacent geomembrane panels.



Photo #25:

Date: 07/24/2025

Direction (facing): Northeast

Description: Contractor performing non-destructive seam testing for extrusion welding.



Photo #26:

Date: 07/25/2025

Direction (facing): North

Description: Liner contractor installing repair patch over destructive sample location.



Photo #27:

Date: 07/28/2025

Direction (facing): North

Description: Geotextile liner sewn together over geomembrane liner.



Photo #28:

Date: 08/04/2025

Direction (facing): Northwest

Description: Contractor installing protective plywood material along the north, south, and west boundaries of Cell D1-D2.



Photo #29:

Date: 08/07/2025

Direction (facing): Northwest

Description: Leachate collection system trench installed with aggregate and pipe.



Photo #30:

Date: 08/13/2025

Direction (facing): North

Description: Leachate drainage sand pushed out from bottom of cell floor.



Photo #31:

Date: 08/21/2025

Direction (facing): North

Description: Leachate drainage sand pushed up to middle section pipe run.



Photo #32:

Date: 08/26/2025

Direction (facing): East

Description: Leachate collection pipe installed at mid section of D1-D2.



Photo #33:

Date: 09/03/2025

Direction (facing): Northwest

Description: Leachate drainage sand and crushed glass applied in D2 area.