

COMPOSITE LINER DESIGN & CONSTRUCTION CERTIFICATION

BOTTOM ASH POND 2

Sherburne County (Sherco) Generating Station
Becker, Minnesota
Carlson McCain Project No.: 3404-19

Prepared for:

Xcel Energy, Inc.



September 29, 2020



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ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

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1.0 INTRODUCTION

This report presents the documentation for liner design and construction certification for the Bottom Ash Pond No. 2 (BAP2) at the Sherburne County Generating Plant (Sherco) in Becker, Minnesota. The Bottom Ash Pond No. 2 is a “new coal combustion residual (CCR) surface impoundment” according to 40 CFR §257.53. This document addresses the requirements of 40 CFR §257.72, i.e. Liner design criteria for new CCR surface impoundments, and demonstrates compliance with the requirements for the Bottom Ash Pond No. 2.

1.1 Requirements of Liner Design

40 CFR §257.72 states the following:

(a) New CCR surface impoundments and lateral expansions of existing and new CCR surface impoundments must be designed, constructed, operated, and maintained with either a composite liner or an alternative composite liner that meets the requirements of §257.70 (b) or (c).

(b) Any liner specified in this section must be installed to cover all surrounding earth likely to be in contact with CCR. Dikes shall not be constructed on top of composite liner.

(c) Prior to construction of the CCR surface impoundment...the owner or operator must obtain certification from a qualified professional engineer that the design of the composite liner or, if applicable, the design of an alternative composite liner complies with the requirements of this section.

(d) Upon completion, the owner or operator must obtain certification from a qualified professional engineer that the composite liner or, if applicable, the alternative composite liner has been constructed in accordance with the requirements of this section.

1.2 Composite Liner Design

The design chosen for BAP2 is an alternative composite liner consisting of a 60-mil high density polyethylene (HDPE) geomembrane (GM) and a geosynthetic clay liner (GCL), as such, the composite liner for BAP2 was designed and constructed to meet the requirements of §257.70 (c), which states:

(c) If the owner or operator elects to install an alternative composite liner, all of the following must be met:

(1) An alternative composite liner must consist of two components; the upper component consisting of, at a minimum, a 30-mil GM, and a lower component, that is not geomembrane, with a liquid flow rate no greater than the liquid flow rate of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. GM components consisting of high-density polyethylene (HDPE) must be 60-mil thick.

(2) The owner or operator must obtain certification from a qualified professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow

rate through two feet of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The hydraulic conductivity for the two feet of compacted soil used in the comparison shall be no greater than 1×10^{-7} cm/sec. The hydraulic conductivity of any alternative to the two feet of compacted soil must be determined using recognized and generally accepted methods. The liquid flow rate comparison must be made using Equation 1 of this section, which is derived from Darcy's Law for gravity flow through porous media.

Prior to construction of BAP2, hydraulic calculations using Equation 1 (Darcy's Law) were conducted to determine the equivalent hydraulic conductivity needed to meet or exceed the liquid flow rate through two-feet of compacted clay in accordance with §257.72(c). At the maximum ponded elevation of water, the hydraulic conductivity of the GCL needs to be **1.8×10^{-9} cm/sec** or lower. Calculations for this are attached as Appendix A.

1.3 Composite Liner Construction Verification

In accordance with §257.72(d) and project specifications, the 60-mil HDPE GM and GCL were subjected to multiple rounds of quality control to ensure alternative composite liner was constructed in accordance with all requirements of §257.72. Details of the quality control and construction documentation is provided below.

1.3.1 GCL Construction Verification

Following the calculation of equivalent hydraulic conductivity, Xcel Energy provided Solmax with a Bottom Ash Pond water sample. Solmax delivered the water sample to an independent laboratory at the University of Virginia ran by Dr. Craig Benson to be tested for chemical compatibility with the GCL and to ensure the product could meet the 1.8×10^{-9} cm/sec or lower hydraulic conductivity in accordance with ASTM D6766. After 154 days of testing and 2.5 pore volumes of inflow, the GCL had reached chemical equilibrium and the hydraulic conductivity of the GCL was determined to be **8.3×10^{-10} cm/sec**, which exceeded requirements. The hydraulic conductivity test is attached is Appendix B.

The GCL product selected for BAP2 is BentoLiner CAR PLUS NWL and BentoLiner CAR PLUS EC, manufactured by Solmax. Both GCL's feature a coal-ash resistant needle-punched reinforced composite GCL liner system comprised of a uniform layer of granular sodium bentonite and polymer blend encapsulated between two geotextiles. CAR Plus NWL has additional needle-punching and is suitable for the shear stresses on a 3H:1V side slope, while CAR Plus EC has a lighter needle punching and was used on the floor.

Proposed material properties of the CAR GCL products were submitted to Carlson McCain and Xcel Energy to ensure they met project specifications prior to manufacturing. During manufacturing, Solmax provided testing to verify project specifications were met. Once the GCL rolls were delivered to the site, the roll numbers were checked against the roll numbers tested by Solmax to ensure the correct material was delivered.

Prior to installation of GCL, the subgrade was compacted and smooth-rolled to ensure it was placed upon a foundation capable of providing support to the liner, and withstand differential settlement or uplift.

During installation, all seams of the GCL were augmented with polymer-enhanced accessory bentonite per manufacturer's recommendations. The results of the GCL Manufacturer's Quality Control (MQC) testing and installation data is provided as Appendix C.

1.3.2 Geomembrane Construction Verification

Material properties of the 60-mil HDPE GM used for BAP2 were submitted to Carlson McCain and Xcel Energy by Skaps Industries (Skaps) prior to manufacturing to ensure the proposed properties met the requirements of the specifications and of Geosynthetics Research Institute (GRI) Test Method GM13 (*GRI GM13*). As the geomembrane rolls were manufactured, they were continuously-tested by Skaps in accordance with GM13. Following manufacturing, the results of MQC tests were submitted to Carlson McCain and Xcel Energy and the rolls were delivered on-site. On-site roll numbers were checked against the roll numbers tested by Skaps to ensure the correct material was delivered.

Global Containment Systems, Inc. was hired by the general contractor to install the GCL and GM. During installation, they performed routine quality control checks to ensure all GCL and GM was installed and seamed correctly. All GM seams were tested using a non-destructive air test to ensure strengths were met. Following the completion of air testing, destructive tests were marked, cut-out, and tested using the on-site calibrated tensiometer against the requirements of GRI Test Method GM19 (*GRI GM19*) to ensure strengths were met. Additional samples were sent to an independent laboratory, Texas Research Institute (TRI), to verify the results of the on-site tensiometer. All defects, holes, and cut-out destruct tests were repaired with a patch and vacuum tested. The results of all MQC, field quality control, and seam testing results are included as Appendix D.

1.4 Extent of Liner Coverage

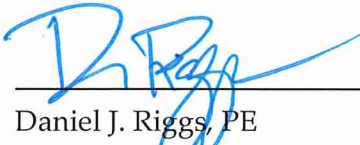
In accordance with §257.72 (b), the composite liner installed covers all surrounding earth likely to be in contact with CCR. Dikes will not be constructed on top of the composite liner.

2.0 CONCLUSION

As demonstrated by the information in this report, Sherco Bottom Ash Pond 2 was designed and constructed with an alternative composite liner in accordance with the requirements of §257.72 (a).

3.0 CERTIFICATION

I hereby certify under penalty of law that this report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Daniel J. Riggs, PE
License No. 49559

September 29, 2020
Date

4.0 REFERENCES

GRI GM13. GRI Test Method GM13, Standard Specification for “Test Methods, Test Properties and Testing Frequency for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes.” Prepared by Geosynthetic Research Institute, January 2016.

GRI GM19. GRI Test Method GM19, Standard Specification for Seam Strength and Related Properties of Thermally Bonded Polyolefin Geomembranes. Prepared by Geosynthetic Research Institute, February 2015.

APPENDIX A – Alternate Liner Hydraulic Conductivity Calculations

Date: 03/19/2019

By: Megan Lindstrom, G.I.T., E.I.T./Dan Riggs, P.E.

Project: Xcel Sherco Bottom Ash Pond No. 2

ALTERNATIVE COMPOSITE LINER EQUIVALENT HYDRAULIC CONDUCTIVITY CALCULATIONS

Objective:

Determine the hydraulic conductivity through a geosynthetic clay liner (GCL) needed to meet the liquid flow rate of a 2-foot compacted clay liner at 1×10^{-7} cm/sec permeability, using the maximum head in Bottom Ash Pond 2.

Basis:

Determine the gravity flow rate through a porous media using Darcy's Law; then determine the equivalent GCL hydraulic conductivity needed to meet the clay liner flow rate:

Darcy's Law: $\frac{Q}{A} = q = k\left(\frac{h}{t} + 1\right)$

Where:

Q = flow rate through liner (L^3/T)

q = flow rate per unit area (flux)

k = vertical hydraulic conductivity ($L^3/L^2/T$)

h = hydraulic head on liner (L)

A = area; the area is the same for both GCL and compacted clay and therefore doesn't factor into the analysis.

Assumptions

1. k for compacted clay liner = 1×10^{-7} cm/s (maximum allowed conductivity from CCR Rules)
2. h = 57.8 feet = 1761.74 cm (maximum head on the pond: water elevation at 993' MSL less minimum liner elevation at 935.2' MSL)
3. t_{clay} = 2 feet = 60.96 cm
4. t_{GCL} = 0.25 inches = 0.635 cm

Calculations

To determine the flux through the clay:

$$q_{clay} = k_{clay} * \left(\frac{h}{t_{clay}} + 1 \right)$$
$$q_{clay} = \left(1 * 10^{-7} \frac{cm}{s} \right) * \left(\frac{1761.74 cm}{60.96 cm} + 1 \right) = 2.99 * 10^{-6} cm/s$$

Determine equivalent GCL Hydraulic Conductivity:

$$q_{clay} = q_{GCL} = 2.99 * 10^{-6} cm/s$$

$$q_{GCL} = 2.99 * 10^{-6} \frac{cm}{s} = k_{GCL} * \left(\frac{h}{t_{GCL}} + 1 \right)$$

$$\text{Where } t_{GCL} = 0.25 \text{ in} = 0.635 \text{ cm}$$

Solving for hydraulic Conductivity:

$$k_{GCL} = \frac{q_{GCL}}{\left(\frac{h}{t_{GCL}} + 1 \right)}$$
$$k_{GCL} = \frac{2.99 * 10^{-6} cm/s}{\left(\frac{1761.74 cm}{0.635 cm} + 1 \right)} = 1.08 * 10^{-9} cm/s$$

Summary

The hydraulic conductivity of the GCL needs to be $1.08 * 10^{-9} cm/s$ or lower to meet the liquid flow rate through 2 feet of compacted clay liner.

APPENDIX B – Geosynthetic Clay Liner Hydraulic Conductivity
Laboratory Testing

23 February 2020

Jimmy Youngblood
Solmax
19103 Gundle Road
Houston, TX 77073

Re: Hydraulic conductivity test on **CAR Plus** GCL permeated with **Sherco Bottom Ash** leachate – **FINAL REPORT**

Mr. Youngblood:

Laboratory tests were conducted to determine the hydraulic conductivity of the **CAR Plus** GCL when permeated with **Sherco bottom ash** leachate. The GCL and the leachate were supplied for testing by your company.

Hydraulic conductivity testing was conducted following the procedures in ASTM D6766. The effective stress was set at **28 kPa (4.0 psi)** and the average **hydraulic gradient was approximately 180**. No backpressure was used. This simulates the field condition and prevents chemical alterations of the permeant liquid, as described in ASTM D6766. The specimen was saturated for 48 hr with leachate prior to permeation without a hydraulic gradient and with the effective stress applied. Data sheets and graphs from the tests are attached.

The hydraulic conductivity of the GCL was determined to be **8.3×10^{-10} cm/s** after 154 d of permeation and 2.5 pore volumes of inflow. The GCL was in hydraulic and chemical equilibrium with the leachate per the requirements in ASTM D6766 when the test was terminated.

Please let me know if you have any questions regarding these test results.

Sincerely,



Craig H. Benson, PhD, PE, NAE
Dean, School of Engineering
Hamilton Endowed Chair in Engineering

University of Virginia Geoenvironmental Laboratory
GCL Hydraulic Conductivity Test Per ASTM D6766



ENGINEERING
 Virginia Geoenvironmental Laboratory

Sample ID: CAR-Plus				Test Date : 9/11/19				
GCL: CAR-Plus		Permeant Liquid:		Sherco Bottom Ash Leachate				
Cell Pressure:	4.0	psi	Diameter of Sample, D:	10.2	cm	Dry WT Bentonite =	32.4	g
Backpressure:	0.0	psi	Length of Sample, L:	0.68	cm	Sample Volume, V:	55.1	mL
Head Setup Constant:	151.0	cm	Area of Sample, A:	81.1	cm ²	Unit Weight, γ :	0.66	Mg/m ³
Effective Stress:	4.0	psi	Burette Area, a:	0.3	cm ²	Dry Unit Weight, γ_d :	0.59	Mg/m ³
Max. Hydraulic Gradient:	222	-	Min. Hydraulic Gradient :	148.5		Void Ratio, e:	3.51	-
Post Test Conditions:						Porosity, n:	0.78	-

GCL Thickness :	6.8	mm
Wet Sample Weight:	36.5	g
Final Water Content:	81.5	%
Ash Content After Test	-	%
LOI After Test	-	%
Ash Content Before Test	-	%
LOI Before Test	-	%

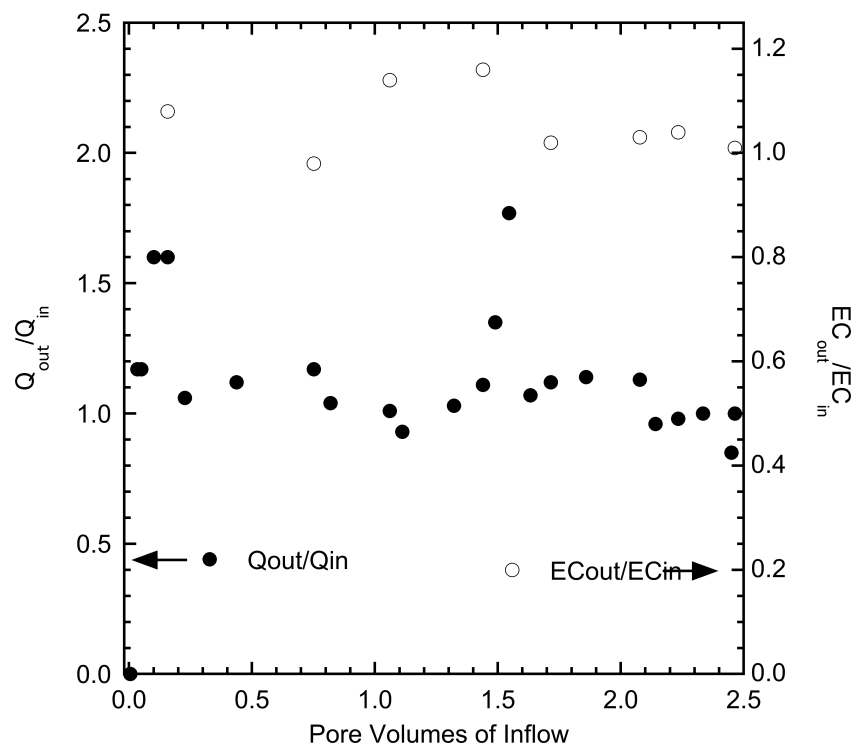
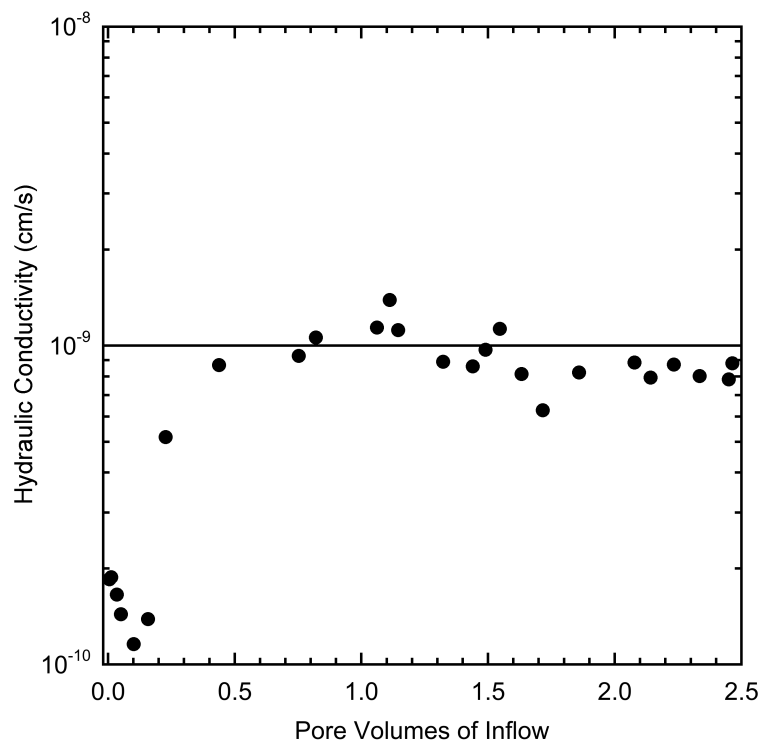
$$K_s = \frac{a * L}{A * \Delta t} \ln \left\{ \frac{H_1}{H_2} \right\}$$

Date, Time	Inflow Burette Reading (cm)	Outflow Burette Reading (mL)	Δt (s)	H (cm)	El. Time (hour)	K (cm/s)	Q_{out} / Q_{in}	Incremental Volume		Influent		Effluent		EC Ratio	PVF Outflow
								Q_{in}	Q_{out}	EC	pH	EC	pH		
								mL	mL	mS/cm	-	mS/cm	-		
9/11/19 22:16	0.0	2.8	0	151.0	0.0										0.000
9/12/19 16:03	0.7	2.8	64020	150.3	17.8	1.85E-10	0.00	0.21	0.00						0.005
9/13/19 16:37	1.7	3.9	88440	149.3	42.4	1.88E-10	3.58	0.30	1.06						0.012
9/17/19 9:07	4.8	5.0	318600	146.2	130.9	1.66E-10	1.17	0.93	1.09						0.034
9/20/19 17:18	7.2	5.8	288660	143.8	211.0	1.44E-10	1.17	0.72	0.84						0.050
10/3/19 14:49	14.4	9.3	1114260	136.6	520.5	1.16E-10	1.60	2.16	3.46						0.101
10/16/19 10:36	22.5	13.2	1108020	128.5	828.3	1.39E-10	1.60	2.43	3.89	9.82	9.00	10.59	8.50	1.08	0.157
10/29/19 16:05	0.0	2.8	1142940	151.0	1145.8		0.00	0.00	0.00						0.157
11/2/19 12:47	10.0	6.0	333720	141.0	1238.5	5.17E-10	1.06	3.00	3.17						0.227
11/10/19 13:12	40.0	16.1	692700	111.0	1430.9	8.69E-10	1.12	9.00	10.09						0.437
11/10/19 13:12	0.0	2.8	0	151.0	1430.9		0.00	0.00	0.00						0.437
11/21/19 16:05	45.1	18.7	960780	105.9	1697.8	9.29E-10	1.17	13.53	15.87	9.82	9.00	9.64	8.44	0.98	0.752
11/26/19 13:35	0.0	2.8	423000	151.0	1815.3		0.00	0.00	0.00						0.752
11/28/19 9:20	9.7	5.9	157500	141.3	1859.1	1.06E-09	1.04	2.91	3.02						0.820
12/5/19 13:36	44.2	16.3	620160	106.8	2031.3	1.14E-09	1.01	10.35	10.43						1.061
12/5/19 13:36	0.0	16.3	0	151.0	2031.3		0.00	0.00	0.00	9.82	9.00	11.16	8.74	1.14	1.061
12/6/19 13:54	7.1	18.3	87480	143.9	2055.6	1.39E-09	0.93	2.13	1.98						1.111
12/7/19 10:39	11.8	18.3	74700	139.2	2076.4	1.12E-09	0.00	1.41	0.00						1.144
12/14/19 1:19	37.3	26.1	571200	113.7	2235.0	8.91E-10	1.03	7.65	7.87						1.322
12/19/19 10:08	54.0	31.7	463740	97.0	2363.9	8.62E-10	1.11	5.01	5.57	9.82	9.00	11.44	7.74	1.16	1.439
12/19/19 10:08	0.0	2.9	0	151.0	2363.9		0.00	0.00	0.00						1.439
12/20/19 20:46	7.1	5.7	124680	143.9	2398.5	9.72E-10	1.35	2.13	2.87						1.489
12/22/19 9:05	15.3	10.1	130740	135.7	2434.8	1.13E-09	1.77	2.46	4.36						1.546
1/7/20 10:11	0.0	2.8	1386360	151.0	2819.9		0.00	0.00	0.00						1.546
1/10/20 11:01	12.3	6.8	262200	138.7	2892.8	8.15E-10	1.07	3.69	3.93						1.632
1/14/20 14:48	24.2	10.8	359220	126.8	2992.5	6.28E-10	1.12	3.57	4.00	9.82	9.00	9.98	8.50	1.02	1.715
1/20/20 21:15	44.8	17.8	541620	106.2	3143.0	8.24E-10	1.14	6.18	7.03						1.859
1/20/20 21:15	0.0	1.9	0	151.0	3143.0			0.00	0.00						1.859

1/28/20 11:34	31.2	12.5	656340	119.8	3325.3	8.87E-10	1.13	9.36	10.53	9.82	9.00	10.12	8.61	1.03	2.077
1/31/20 9:01	40.3	15.1	250020	110.7	3394.8	7.95E-10	0.96	2.73	2.63						2.141
1/31/20 9:05	0.0	0.0	240	151.0	3394.8			0.00	0.00						2.141
2/3/20 10:23	13.2	3.9	263880	137.8	3468.1	8.72E-10	0.98	3.96	3.90	9.82	9.00	10.22	8.50	1.04	2.233
2/7/20 11:55	27.8	8.3	351120	123.2	3565.7	8.03E-10	1.00	4.38	4.40						2.335
2/12/20 19:15	44.2	12.5	458400	106.8	3693.0	7.84E-10	0.85	4.92	4.20						2.450
2/13/20 10:15	46.2	13.1	54000	104.8	3708.0	8.81E-10	1.00	0.60	0.60	9.82	9.00	9.91	8.73	1.01	2.464

Test Duration (d) = 153.9

K (cm/s) = 8.3E-10



APPENDIX C - Geosynthetic Clay Liner Construction Verification Documentation

Geosynthetic Clay Liner Manufacturer Quality Control Documentation

Accessory Bentonite Manufacturer Quality Control Documentation

Geosynthetic Quality Assurance Laboratory Permeability Tests

Geosynthetic Clay Liner Manufacturer Quality Control Documentation



BentoLiner Manufacturing Certification

Sales Order: SO-088864
Customer: Global Containment Solutions, LLC
Project: GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT
Product Type: BLI-075-03N-03S-D-0P BentoLiner EC

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

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

Chuck Taylor
Laboratory Technician

Roll Allocation List

Sales Order SO-088864
Customer Name Global Containment Solutions,LLC
Project Name GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT

Serial number	Item Number	Daily lot	Roll width	Length
502344848	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344849	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344850	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344851	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344852	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344853	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344854	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344855	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344856	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344857	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344858	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344859	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344860	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344861	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344862	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344863	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344864	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344865	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344866	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344867	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344868	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344869	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344870	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344871	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344872	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344873	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344874	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344875	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344876	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344877	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344878	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344879	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344880	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344881	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344882	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344884	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344885	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344886	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344887	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344888	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344889	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344890	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344891	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344892	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344893	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344894	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344895	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344896	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344897	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344898	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344899	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344900	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344901	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344902	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344903	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344904	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344905	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344906	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344907	BLI-075-03N-03S-D-0P	20040708	15.50	200.00
502344908	BLI-075-03N-03S-D-0P	20040708	15.50	200.00

Roll Allocation List

Sales Order SO-088864
Customer Name Global Containment Solutions,LLC
Project Name GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT

Serial number	Item Number	Daily lot	Roll width	Length
502344909	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344910	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344911	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344912	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344913	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344914	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344915	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344916	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344917	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344918	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344919	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344920	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344921	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344922	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344923	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344924	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344925	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344926	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344927	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344928	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344929	BLI-075-03N-03S-D-0P	20040808	15.50	200.00
502344930	BLI-075-03N-03S-D-0P	20040808	15.50	200.00

ROLL TEST DATA REPORT



Report Date: Apr/9/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-03N-03S-D-0P	

Roll Number	ASTM D6768 Tensile Strength (psi)	ASTM D6496 Peel Strength (psi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502344848	55.7	5.9	0.86	32.0	7.8	14.0
502344849	57.0	4.6	0.86	32.0	7.8	14.0
502344850	57.0	4.6	0.86	32.0	7.8	14.0
502344851	57.0	4.6	0.86	32.0	7.8	14.0
502344852	57.0	4.6	0.86	32.0	7.8	14.0
502344853	57.0	4.6	0.86	32.0	7.8	14.0
502344854	57.0	4.6	0.86	32.0	7.8	14.0
502344855	57.0	4.6	0.86	32.0	7.8	14.0
502344856	57.0	4.6	0.86	32.0	7.8	14.0
502344857	57.0	4.6	0.86	32.0	7.8	14.0
502344858	57.0	4.6	0.86	32.0	7.8	14.0
502344859	57.0	4.6	0.86	32.0	7.8	14.0
502344860	57.0	4.6	0.86	32.0	7.8	14.0
502344861	55.3	2.5	0.83	32.0	7.8	14.0
502344862	55.3	2.5	0.83	32.0	7.8	14.0
502344863	55.3	2.5	0.83	32.0	7.8	14.0
502344864	55.3	2.5	0.83	32.0	7.8	14.0
502344865	55.3	2.5	0.83	32.0	7.8	14.0
502344866	55.3	2.5	0.83	32.0	7.8	14.0
502344867	55.3	2.5	0.83	32.0	7.8	14.0
502344868	55.3	2.5	0.83	32.0	7.8	14.0
502344869	55.3	2.5	0.83	32.0	7.8	14.0
502344870	55.3	2.5	0.83	32.0	7.8	14.0
502344871	55.3	2.5	0.83	32.0	7.8	14.0
502344872	55.3	2.5	0.83	32.0	7.8	14.0
502344873	50.6	8.2	0.90	33.5	10.2	13.6
502344874	50.6	8.2	0.90	33.5	10.2	13.6
502344875	50.6	8.2	0.90	33.5	10.2	13.6
502344876	50.6	8.2	0.90	33.5	10.2	13.6
502344877	50.6	8.2	0.90	33.5	10.2	13.6
502344878	50.6	8.2	0.90	33.5	10.2	13.6
502344879	50.6	8.2	0.90	33.5	10.2	13.6
502344880	50.6	8.2	0.90	33.5	10.2	13.6
502344881	50.6	8.2	0.90	33.5	10.2	13.6

ROLL TEST DATA REPORT



Report Date: Apr/9/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-03N-03S-D-0P	

Roll Number	ASTM D6768 Tensile Strength (ppi)	ASTM D6496 Peel Strength (ppi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502344882	50.6	8.2	0.90	33.5	10.2	13.6
502344884	50.6	8.2	0.90	33.5	10.2	13.6
502344885	60.9	4.1	0.77	33.5	10.2	13.6
502344886	60.9	4.1	0.77	33.5	10.2	13.6
502344887	60.9	4.1	0.77	33.5	10.2	13.6
502344888	60.9	4.1	0.77	33.5	10.2	13.6
502344889	60.9	4.1	0.77	33.5	10.2	13.6
502344890	60.9	4.1	0.77	33.5	10.2	13.6
502344891	60.9	4.1	0.77	33.5	10.2	13.6
502344892	60.9	4.1	0.77	33.5	10.2	13.6
502344893	60.9	4.1	0.77	33.5	10.2	13.6
502344894	60.9	4.1	0.77	33.5	10.2	13.6
502344895	60.9	4.1	0.77	33.5	10.2	13.6
502344896	60.9	4.1	0.77	33.5	10.2	13.6
502344897	57.6	2.6	0.76	33.5	10.2	13.6
502344898	57.6	2.6	0.76	28.0	11.0	13.6
502344899	57.6	2.6	0.76	28.0	11.0	13.6
502344900	57.6	2.6	0.76	28.0	11.0	13.6
502344901	57.6	2.6	0.76	28.0	11.0	13.6
502344902	57.6	2.6	0.76	28.0	11.0	13.6
502344903	57.6	2.6	0.76	28.0	11.0	13.6
502344904	57.6	2.6	0.76	28.0	11.0	13.6
502344905	57.6	2.6	0.76	28.0	11.0	13.6
502344906	57.6	2.6	0.76	28.0	11.0	13.6
502344907	57.6	2.6	0.76	28.0	11.0	13.6
502344908	57.6	2.6	0.76	28.0	11.0	13.6
502344909	47.7	2.6	0.82	28.0	11.0	13.6
502344910	47.7	2.6	0.82	28.0	11.0	13.6
502344911	47.7	2.6	0.82	28.0	11.0	13.6
502344912	47.7	2.6	0.82	28.0	11.0	13.6
502344913	47.7	2.6	0.82	28.0	11.0	13.6
502344914	47.7	2.6	0.82	28.0	11.0	13.6
502344915	47.7	2.6	0.82	28.0	11.0	13.6
502344916	47.7	2.6	0.82	28.0	11.0	13.6

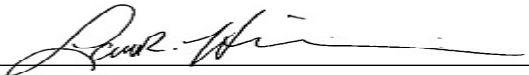
ROLL TEST DATA REPORT



Report Date: Apr/9/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-03N-03S-D-0P	

Roll Number	ASTM D6768 Tensile Strength (ppi)	ASTM D6496 Peel Strength (ppi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502344917	47.7	2.6	0.82	28.0	11.0	13.6
502344918	47.7	2.6	0.82	28.0	11.0	13.6
502344919	51.2	3.7	0.84	28.0	11.0	13.6
502344920	51.2	3.7	0.84	28.0	11.0	13.6
502344921	51.2	3.7	0.84	28.0	11.0	13.6
502344922	51.2	3.7	0.84	28.0	11.0	13.6
502344923	51.2	3.7	0.84	31.0	10.4	13.8
502344924	51.2	3.7	0.84	31.0	10.4	13.8
502344925	51.2	3.7	0.84	31.0	10.4	13.8
502344926	51.2	3.7	0.84	31.0	10.4	13.8
502344927	51.2	3.7	0.84	31.0	10.4	13.8
502344928	51.2	3.7	0.84	31.0	10.4	13.8
502344929	51.2	3.7	0.84	31.0	10.4	13.8
502344930	51.2	3.7	0.84	31.0	10.4	13.8

 Laboratory Manager 



BentoLiner Manufacturing Certification

Sales Order: SO-088864
Customer: Global Containment Solutions,LLC
Project: GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT
Product Type: BLI-075-06N-75W-D-3P BentoLiner NWL35 Car Plus

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

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

Chuck Taylor
Laboratory Technician

Roll Allocation List

Sales Order SO-088864
Customer Name Global Containment Solutions,LLC
Project Name GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT

Serial number	Item Number	Daily lot	Roll width	Length
502344932	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344933	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344934	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344935	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344936	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344937	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344938	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344939	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344940	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344941	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344942	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344943	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344944	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344945	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344946	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344947	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344948	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344949	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344950	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344951	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344952	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344953	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344954	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344955	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344956	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344957	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344958	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344959	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344960	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344961	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344962	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344963	BLI-075-06N-75W-D-3P	20040909	15.50	180.00
502344964	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344965	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344966	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344967	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344968	BLI-075-06N-75W-D-3P	20040909	15.50	120.00
502344969	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344970	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344971	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344972	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344973	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344974	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344975	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344976	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344977	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344978	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344979	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344980	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344981	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344982	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344983	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344984	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344985	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344986	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344987	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344988	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344989	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344990	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344991	BLI-075-06N-75W-D-3P	20040909	15.50	200.00

Roll Allocation List

Sales Order SO-088864
Customer Name Global Containment Solutions,LLC
Project Name GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT

Serial number	Item Number	Daily lot	Roll width	Length
502344992	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344993	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344994	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344995	BLI-075-06N-75W-D-3P	20040909	15.50	200.00
502344996	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502344997	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502344998	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502344999	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345000	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345001	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345002	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345003	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345004	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345005	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345006	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345007	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345008	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345009	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345010	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345011	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345012	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345013	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345014	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345015	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345016	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345017	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345018	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345019	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345020	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345021	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345022	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345023	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345024	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345025	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345026	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345027	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345028	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345029	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345030	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345031	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345032	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345033	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345034	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345035	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345036	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345037	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345038	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345039	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345040	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345041	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345042	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345043	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345044	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345045	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345046	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345047	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345048	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345049	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345050	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345051	BLI-075-06N-75W-D-3P	20041009	15.50	200.00

Roll Allocation List

Sales Order SO-088864
Customer Name Global Containment Solutions,LLC
Project Name GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT

Serial number	Item Number	Daily lot	Roll width	Length
502345052	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345053	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345054	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345055	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345056	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345057	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345058	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345059	BLI-075-06N-75W-D-3P	20041009	15.50	200.00
502345060	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345061	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345062	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345063	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345064	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345065	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345066	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345067	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345068	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345069	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345070	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345071	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345072	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345073	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345074	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345075	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345076	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345077	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345078	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345079	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345080	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345081	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345082	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345083	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345084	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345085	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345086	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345087	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345088	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345089	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345090	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345091	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345092	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345093	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345094	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345095	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345096	BLI-075-06N-75W-D-3P	20041309	15.50	150.00
502345097	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345098	BLI-075-06N-75W-D-3P	20041309	15.50	190.00
502345100	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345101	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345102	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345103	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345104	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345105	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345106	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345107	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345108	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345109	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345110	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345111	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345112	BLI-075-06N-75W-D-3P	20041309	15.50	200.00

Roll Allocation List

Sales Order SO-088864
Customer Name Global Containment Solutions,LLC
Project Name GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT

Serial number	Item Number	Daily lot	Roll width	Length
502345113	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345114	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345115	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345116	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345117	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345118	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345119	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345120	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345121	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345122	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345123	BLI-075-06N-75W-D-3P	20041309	15.50	200.00
502345124	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345125	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345126	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345127	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345128	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345129	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345130	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345131	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345132	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345133	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345134	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345135	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345136	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345137	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345138	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345139	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345140	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345141	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345142	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345143	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345144	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345145	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345146	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345147	BLI-075-06N-75W-D-3P	20041409	15.50	160.00
502345148	BLI-075-06N-75W-D-3P	20041409	15.50	200.00
502345149	BLI-075-06N-75W-D-3P	20041409	15.50	200.00

ROLL TEST DATA REPORT



Report Date: Apr/15/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-06N-75W-D-3P	

Roll Number	ASTM D6768 Tensile Strength (ppi)	ASTM D6496 Peel Strength (ppi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502344932	64.7	12.5	0.85	31.0	10.4	13.8
502344933	64.7	12.5	0.85	31.0	10.4	13.8
502344934	64.7	12.5	0.85	31.0	10.4	13.8
502344935	64.7	12.5	0.85	31.0	10.4	13.8
502344936	64.7	12.5	0.85	31.0	10.4	13.8
502344937	64.7	12.5	0.85	31.0	10.4	13.8
502344938	64.7	12.5	0.85	31.0	10.4	13.8
502344939	59.8	11.3	0.81	31.0	10.4	13.8
502344940	59.8	11.3	0.81	31.0	10.4	13.8
502344941	59.8	11.3	0.81	31.0	10.4	13.8
502344942	59.8	11.3	0.81	31.0	10.4	13.8
502344943	59.8	11.3	0.81	31.0	10.4	13.8
502344944	59.8	11.3	0.81	31.0	10.4	13.8
502344945	59.8	11.3	0.81	31.0	10.4	13.8
502344946	59.8	11.3	0.81	31.0	10.4	13.8
502344947	59.8	11.3	0.81	31.0	10.4	13.8
502344948	59.8	11.3	0.81	31.0	10.4	13.8
502344949	59.8	11.3	0.81	30.0	10.5	13.2
502344950	59.8	11.3	0.81	30.0	10.5	13.2
502344951	58.8	15.1	0.86	30.0	10.5	13.2
502344952	58.8	15.1	0.86	30.0	10.5	13.2
502344953	58.8	15.1	0.86	30.0	10.5	13.2
502344954	58.8	15.1	0.86	30.0	10.5	13.2
502344955	58.8	15.1	0.86	30.0	10.5	13.2
502344956	58.8	15.1	0.86	30.0	10.5	13.2
502344957	58.8	15.1	0.86	30.0	10.5	13.2
502344958	58.8	15.1	0.86	30.0	10.5	13.2
502344959	58.8	15.1	0.86	30.0	10.5	13.2
502344960	58.8	15.1	0.86	30.0	10.5	13.2
502344961	58.8	15.1	0.86	30.0	10.5	13.2
502344962	58.8	15.1	0.86	30.0	10.5	13.2
502344963	59.3	10.9	0.78	30.0	10.5	13.2
502344964	59.3	10.9	0.78	30.0	10.5	13.2
502344965	59.3	10.9	0.78	30.0	10.5	13.2

ROLL TEST DATA REPORT



Report Date: Apr/15/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-06N-75W-D-3P	

Roll Number	ASTM D6768 Tensile Strength (ppi)	ASTM D6496 Peel Strength (ppi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502344966	59.3	10.9	0.78	30.0	10.5	13.2
502344967	59.3	10.9	0.78	30.0	10.5	13.2
502344968	59.3	10.9	0.78	30.0	10.5	13.2
502344969	59.3	10.9	0.78	30.0	10.5	13.2
502344970	59.3	10.9	0.78	30.0	10.5	13.2
502344971	59.3	10.9	0.78	30.0	10.5	13.2
502344972	59.3	10.9	0.78	30.0	10.5	13.2
502344973	59.3	10.9	0.78	30.0	10.5	13.2
502344974	59.3	10.9	0.78	30.0	10.5	13.2
502344975	64.8	10.9	0.84	29.0	10.4	13.0
502344976	64.8	10.9	0.84	29.0	10.4	13.0
502344977	64.8	10.9	0.84	29.0	10.4	13.0
502344978	64.8	10.9	0.84	29.0	10.4	13.0
502344979	64.8	10.9	0.84	29.0	10.4	13.0
502344980	64.8	10.9	0.84	29.0	10.4	13.0
502344981	64.8	10.9	0.84	29.0	10.4	13.0
502344982	64.8	10.9	0.84	29.0	10.4	13.0
502344983	64.8	10.9	0.84	29.0	10.4	13.0
502344984	64.8	10.9	0.84	29.0	10.4	13.0
502344985	64.8	10.9	0.84	29.0	10.4	13.0
502344986	64.8	10.9	0.84	29.0	10.4	13.0
502344987	59.3	14.2	0.79	29.0	10.4	13.0
502344988	59.3	14.2	0.79	29.0	10.4	13.0
502344989	59.3	14.2	0.79	29.0	10.4	13.0
502344990	59.3	14.2	0.79	29.0	10.4	13.0
502344991	59.3	14.2	0.79	29.0	10.4	13.0
502344992	59.3	14.2	0.79	29.0	10.4	13.0
502344993	59.3	14.2	0.79	29.0	10.4	13.0
502344994	59.3	14.2	0.79	29.0	10.4	13.0
502344995	59.3	14.2	0.79	29.0	10.4	13.0
502344996	59.3	14.2	0.79	29.0	10.4	13.0
502344997	60.8	10.0	0.86	29.0	10.4	13.0
502344998	60.8	10.0	0.86	29.0	10.4	13.0
502344999	60.8	10.0	0.86	29.0	10.4	13.0

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Report Date: Apr/15/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-06N-75W-D-3P	

Roll Number	ASTM D6768 Tensile Strength (ppi)	ASTM D6496 Peel Strength (ppi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502345000	60.8	10.0	0.86	30.0	10.4	12.4
502345001	60.8	10.0	0.86	30.0	10.4	12.4
502345002	60.8	10.0	0.86	30.0	10.4	12.4
502345003	60.8	10.0	0.86	30.0	10.4	12.4
502345004	60.8	10.0	0.86	30.0	10.4	12.4
502345005	60.8	10.0	0.86	30.0	10.4	12.4
502345006	60.8	10.0	0.86	30.0	10.4	12.4
502345007	60.8	10.0	0.86	30.0	10.4	12.4
502345008	60.8	10.0	0.86	30.0	10.4	12.4
502345009	65.7	7.5	0.79	30.0	10.4	12.4
502345010	65.7	7.5	0.79	30.0	10.4	12.4
502345011	65.7	7.5	0.79	30.0	10.4	12.4
502345012	65.7	7.5	0.79	30.0	10.4	12.4
502345013	65.7	7.5	0.79	30.0	10.4	12.4
502345014	65.7	7.5	0.79	30.0	10.4	12.4
502345015	65.7	7.5	0.79	30.0	10.4	12.4
502345016	65.7	7.5	0.79	30.0	10.4	12.4
502345017	65.7	7.5	0.79	30.0	10.4	12.4
502345018	65.7	7.5	0.79	30.0	10.4	12.4
502345019	65.7	7.5	0.79	30.0	10.4	12.4
502345020	65.7	7.5	0.79	30.0	10.4	12.4
502345021	65.7	7.5	0.79	30.0	10.4	12.4
502345022	65.7	7.5	0.79	30.0	10.4	12.4
502345023	65.7	7.5	0.79	30.0	10.4	12.4
502345024	65.7	7.5	0.79	30.0	10.4	12.4
502345025	65.7	7.5	0.79	30.0	10.4	12.4
502345026	65.7	7.5	0.79	30.0	10.4	12.4
502345027	65.7	7.5	0.79	30.0	10.4	12.4
502345028	65.7	7.5	0.79	30.0	10.4	12.4
502345029	65.7	7.5	0.79	30.0	10.4	12.4
502345030	65.7	7.5	0.79	30.0	10.4	12.4
502345031	65.7	7.5	0.79	30.0	10.4	12.4
502345032	65.7	7.5	0.79	30.0	10.4	12.4
502345033	57.2	10.1	0.82	30.0	10.4	12.4

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Report Date: Apr/15/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-06N-75W-D-3P	

Roll Number	ASTM D6768 Tensile Strength (psi)	ASTM D6496 Peel Strength (psi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502345034	57.2	10.1	0.82	30.0	10.4	12.4
502345035	57.2	10.1	0.82	30.0	10.4	12.4
502345036	57.2	10.1	0.82	30.0	10.4	12.4
502345037	57.2	10.1	0.82	30.0	10.4	12.4
502345038	57.2	10.1	0.82	30.0	10.4	12.4
502345039	57.2	10.1	0.82	30.0	10.4	12.4
502345040	57.2	10.1	0.82	30.0	10.4	12.4
502345041	57.2	10.1	0.82	30.0	10.4	12.4
502345042	57.2	10.1	0.82	30.0	10.4	12.4
502345043	57.2	10.1	0.82	30.0	10.4	12.4
502345044	57.2	10.1	0.82	30.0	10.4	12.4
502345045	58.3	13.4	0.86	30.0	10.4	12.4
502345046	58.3	13.4	0.86	30.0	10.4	12.4
502345047	58.3	13.4	0.86	30.0	10.4	12.4
502345048	58.3	13.4	0.86	30.5	9.5	14.2
502345049	58.3	13.4	0.86	30.5	9.5	14.2
502345050	58.3	13.4	0.86	30.5	9.5	14.2
502345051	58.3	13.4	0.86	30.5	9.5	14.2
502345052	58.3	13.4	0.86	30.5	9.5	14.2
502345053	58.3	13.4	0.86	30.5	9.5	14.2
502345054	58.3	13.4	0.86	30.5	9.5	14.2
502345055	58.3	13.4	0.86	30.5	9.5	14.2
502345056	58.3	13.4	0.86	30.5	9.5	14.2
502345057	66.5	11.0	0.84	30.5	9.5	14.2
502345058	66.5	11.0	0.84	30.5	9.5	14.2
502345059	66.5	11.0	0.84	30.5	9.5	14.2
502345060	66.5	11.0	0.84	30.5	9.5	14.2
502345061	66.5	11.0	0.84	30.5	9.5	14.2
502345062	66.5	11.0	0.84	30.5	9.5	14.2
502345063	66.5	11.0	0.84	30.5	9.5	14.2
502345064	66.5	11.0	0.84	30.5	9.5	14.2
502345065	66.5	11.0	0.84	30.5	9.5	14.2
502345066	66.5	11.0	0.84	30.5	9.5	14.2
502345067	66.5	11.0	0.84	30.5	9.5	14.2

ROLL TEST DATA REPORT



Report Date: Apr/15/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-06N-75W-D-3P	

Roll Number	ASTM D6768 Tensile Strength (ppi)	ASTM D6496 Peel Strength (ppi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502345068	66.5	11.0	0.84	30.5	9.5	14.2
502345069	55.4	12.0	0.82	30.5	9.5	14.2
502345070	55.4	12.0	0.82	30.5	9.5	14.2
502345071	55.4	12.0	0.82	30.5	9.5	14.2
502345072	58.2	10.7	0.89	30.5	9.5	14.2
502345073	58.2	10.7	0.89	30.5	9.5	14.2
502345074	58.2	10.7	0.89	32.0	8.5	14.6
502345075	58.2	10.7	0.89	32.0	8.5	14.6
502345076	58.2	10.7	0.89	32.0	8.5	14.6
502345077	58.2	10.7	0.89	32.0	8.5	14.6
502345078	58.2	10.7	0.89	32.0	8.5	14.6
502345079	58.2	10.7	0.89	32.0	8.5	14.6
502345080	58.2	10.7	0.89	32.0	8.5	14.6
502345081	58.2	10.7	0.89	32.0	8.5	14.6
502345082	58.2	10.7	0.89	32.0	8.5	14.6
502345083	58.2	10.7	0.89	32.0	8.5	14.6
502345084	63.3	9.5	0.89	32.0	8.5	14.6
502345085	63.3	9.5	0.89	32.0	8.5	14.6
502345086	63.3	9.5	0.89	31.5	8.8	13.8
502345087	63.3	9.5	0.89	31.5	8.8	13.8
502345088	63.3	9.5	0.89	31.5	8.8	13.8
502345089	63.3	9.5	0.89	31.5	8.8	13.8
502345090	63.3	9.5	0.89	31.5	8.8	13.8
502345091	63.3	9.5	0.89	31.5	8.8	13.8
502345092	63.3	9.5	0.89	31.5	8.8	13.8
502345093	63.3	9.5	0.89	31.5	8.8	13.8
502345094	63.3	9.5	0.89	31.5	8.8	13.8
502345095	63.3	9.5	0.89	31.5	8.8	13.8
502345096	63.3	9.5	0.89	31.5	8.8	13.8
502345097	75.7	11.0	0.83	31.5	8.8	13.8
502345098	75.7	11.0	0.83	31.5	8.8	13.8
502345100	75.7	11.0	0.83	31.5	8.8	13.8
502345101	75.7	11.0	0.83	31.5	8.8	13.8
502345102	75.7	11.0	0.83	31.5	8.8	13.8

ROLL TEST DATA REPORT



Report Date: Apr/15/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-06N-75W-D-3P	

Roll Number	ASTM D6768 Tensile Strength (ppi)	ASTM D6496 Peel Strength (ppi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502345103	75.7	11.0	0.83	31.5	8.8	13.8
502345104	75.7	11.0	0.83	31.5	8.8	13.8
502345105	75.7	11.0	0.83	31.5	8.8	13.8
502345106	75.7	11.0	0.83	31.5	8.8	13.8
502345107	75.7	11.0	0.83	31.5	8.8	13.8
502345108	73.5	14.0	0.81	31.5	8.8	13.8
502345109	73.5	14.0	0.81	31.5	8.8	13.8
502345110	73.5	14.0	0.81	31.5	8.8	13.8
502345111	73.5	14.0	0.81	33.5	8.5	13.0
502345112	73.5	14.0	0.81	33.5	8.5	13.0
502345113	73.5	14.0	0.81	33.5	8.5	13.0
502345114	73.5	14.0	0.81	33.5	8.5	13.0
502345115	73.5	14.0	0.81	33.5	8.5	13.0
502345116	73.5	14.0	0.81	33.5	8.5	13.0
502345117	73.5	14.0	0.81	33.5	8.5	13.0
502345118	73.5	14.0	0.81	33.5	8.5	13.0
502345119	73.5	14.0	0.81	33.5	8.5	13.0
502345120	57.1	9.0	0.84	33.5	8.5	13.0
502345121	57.1	9.0	0.84	33.5	8.5	13.0
502345122	57.1	9.0	0.84	33.5	8.5	13.0
502345123	57.1	9.0	0.84	33.5	8.5	13.0
502345124	57.1	9.0	0.84	33.5	8.5	13.0
502345125	57.1	9.0	0.84	33.5	8.5	13.0
502345126	57.1	9.0	0.84	33.5	8.5	13.0
502345127	57.1	9.0	0.84	33.5	8.5	13.0
502345128	57.1	9.0	0.84	33.5	8.5	13.0
502345129	57.1	9.0	0.84	33.5	8.5	13.0
502345130	57.1	9.0	0.84	33.5	8.5	13.0
502345131	57.1	9.0	0.84	33.5	8.5	13.0
502345132	62.9	11.7	0.84	33.5	8.5	13.0
502345133	62.9	11.7	0.84	33.5	8.5	13.0
502345134	62.9	11.7	0.84	33.5	8.5	13.0
502345135	62.9	11.7	0.84	33.5	8.5	13.0
502345136	62.9	11.7	0.84	33.5	8.2	13.6

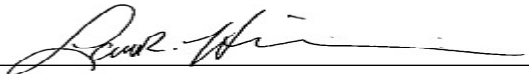
ROLL TEST DATA REPORT



Report Date: Apr/15/2020

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-088864	Global Containment Solutions, LLC	Becker MN US	BLI-075-06N-75W-D-3P	

Roll Number	ASTM D6768 Tensile Strength (psi)	ASTM D6496 Peel Strength (psi)	ASTM D5993 Clay Content @ 0% Moisture (lbs/sf)	ASTM D5890 Free Swell (ml/2g)	ASTM D2216 Moisture Content (%)	ASTM D5891 Fluid Loss (ml)
502345137	62.9	11.7	0.84	33.5	8.2	13.6
502345138	62.9	11.7	0.84	33.5	8.2	13.6
502345139	62.9	11.7	0.84	33.5	8.2	13.6
502345140	62.9	11.7	0.84	33.5	8.2	13.6
502345141	62.9	11.7	0.84	33.5	8.2	13.6
502345142	62.9	11.7	0.84	33.5	8.2	13.6
502345143	62.9	11.7	0.84	33.5	8.2	13.6
502345144	54.4	11.9	0.84	33.5	8.2	13.6
502345145	54.4	11.9	0.84	33.5	8.2	13.6
502345146	54.4	11.9	0.84	33.5	8.2	13.6
502345147	54.4	11.9	0.84	33.5	8.2	13.6
502345148	54.4	11.9	0.84	33.5	8.2	13.6
502345149	61.8	12.2	0.80	33.5	8.2	13.6

 Laboratory Manager 

Accessory Bentonite Manufacturer Quality Control Documentation

**SOLMAX****Shipping Order - Packing List - Original - Not Negotiable**

Page 1 of

Solmax Geosynthetics, LLC Kingstree, SC

Number BL-0123643

Received at Kingstree, SC from Solmax Geosynthetics, LLC the property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said Carrier agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any said property, over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to the rates and contract agreed to in writing by Solmax Geosynthetics, LLC and Carrier. Solmax Geosynthetics, LLC's obligation to pay freight charges for the shipment is conditioned on (1) the existence of a separate written contract with the Carrier transporting the freight and (2) the Carrier's name appearing on this Bill of Lading, and other carriers must look solely to a party other than Solmax Geosynthetics, LLC for payment.

Ship to: **GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT**
13999 Industrial Blvd.
Becker, MN 55308

Ship date: **04/21/2020**Branch plant: **1503**Sales order: **SO-088864**

Shipping instructions: **24 hour notice prior to delivery. PPE Required! (hard hat, reflective vest, glasses, gloves, boots, etc.)**
Contact: Todd Monson 612-490-7563 SEE ATTACHED MAP IN TRELLO

Line no.	Shipped quantity	Product code	Unit	Kind of Package, Description of Articles, Special Marks and Exceptions	Weight	Project
	404.00	BENTGRAN-030-P	BC	30 Mesh CAR PLUS Loose Bentonite Clay 30 Mesh CAR PLUS Loose Bentonite Clay	20,200.00	Freight charges are prepaid unless marked collect. Check box if collect ☐ Customer PO number 19-07-1083-01 If this shipment is to be delivered to consignee, consignor shall sign the following statement. Carrier may decline to deliver this shipment without payment of freight and all other lawful charges. Signature of Consignor Local Verification Signed X PRO Number KT054452 Seal numbers Truckers P.O. # PO1800
Total quantity:		404.00	Total weight:		20,200.00	

Driver requirements:

- 1) Driver must pre call 24 hrs prior to delivery and on Friday for Monday delivery.
- 2) Driver must call (843) 201-1520 when unloaded.
- 3) Driver must call and advise any delay in transit.
- 4) A copy of this bill of lading must accompany Freight Invoice.

Carrier name: **Armstrong Transport Group, Inc**

Carrier signature: _____

Date: _____

Consignee

REV02 - Date 06/12/01

Geosynthetic Clay Liner Quality Assurance Laboratory Permeability Tests



Report Date
6/2/2020

Quality Assurance Laboratory Test Results

Project: GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT

Sales Order: SO-088864

Product: BLI-075-03N-03S-D-0P BentoLiner EC Car Plus

GCL used on the Floor

Required Testing: ASTM D5887 - Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liner Specimens Using a Flexible Wall Permeameter

Frequency: 1/250,000 sf

Effective Stress: 5 psi

Daily Lot	Roll Number	Production Date	Index Flux (m ³ /m ² /sec)	Hydraulic Conductivity (cm/sec)
20040708	502344848	4/8/2020	1.21E-09	5.42E-10
20040808	502344918	4/9/2020	1.46E-09	7.08E-10

Approved By: Chuck Taylor
Date Approved: 06/02/20

Quality Assurance Laboratory Test Results

Project: GCS/XCEL SHERCO 2020 BOTTOM ASH PROJECT

Sales Order: 88864

Product: BLI-075-06N-75W-D-3P BentoLiner NWL Car Plus

GCL used on the slopes

Required Testing: ASTM D5887 - Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liner Specimens Using a Flexible Wall Permeameter

Frequency: 1/250,000sf

Effective Stress: 5 psi

Daily Lot	Roll Number	Production Date	Index Flux (m ³ /m ² /sec)	Hydraulic Conductivity (cm/sec)
20040909	502344938	4/9/2020	1.68E-09	8.36E-10
20041009	502345014	4/13/2020	2.10E-09	9.55E-10
20041309	502345095	4/14/2020	1.09E-09	5.84E-10

Approved By: Chuck Taylor
Date Approved: 06/02/20

APPENDIX D – Geomembrane Construction Verification Documentation

Manufacturer Quality Control Documentation

Tensiometer Calibration Certificate

As-Built Panel Layout Drawing

Subgrade Acceptance Forms

Trial Weld Forms

Panel Placement Forms

Panel Seaming Forms

Field Destructive Testing Forms

Laboratory Destructive Testing Results

Repair Forms

Manufacturer Quality Control Documentation

*Smooth



Product: 60-HD-00-BLK-BLK-AVG-STD-23.5
 Project : Sherburne County Closure Pond 2, MN
 Cust PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*
 Date: October 7, 2019
 SKAPS SO: 31C1900102

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

Roll Number	Thickness MAV (mil)	Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Puncture Resist (lb)	Density (g/cc)	Carbon Black (%)	Carbon Black Disper (Cat 1 & 2)	Resin Lot #
	ASTM D 5199	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	
		MD	TD	MD	TD	MD	TD	MD	TD	MD	TD					
3111001136	62	153	154	18	18	297	286	858	822	47	52	149	0.945	2.6	10	PKG611380
3111001137	62	153	154	18	18	297	286	858	822	47	52	149	0.945	2.6	10	PKG611380
3111001138	62	153	154	18	18	297	286	858	822	47	52	149	0.945	2.6	10	PKG611380
3111001139	61	153	154	18	18	297	286	858	822	47	52	149	0.945	2.6	10	PKG611380
3111001140	61	153	162	18	16	296	281	824	841	47	52	149	0.945	2.6	10	PKG611380
3111001141	61	153	162	18	16	296	281	824	841	47	52	149	0.945	2.6	10	PKG611380
3111001144	61	153	162	18	16	296	281	824	841	47	52	149	0.945	2.6	10	PKG611380
3111001145	61	153	156	19	18	274	295	776	882	46	51	149	0.947	2.5	10	PKG611380
3111001146	61	153	156	19	18	274	295	776	882	46	51	149	0.947	2.5	10	PKG611380
3111001147	61	153	156	19	18	274	295	776	882	46	51	149	0.947	2.5	10	PKG611380
3111001148	62	153	156	19	18	274	295	776	882	46	51	149	0.947	2.5	10	PKG611380
3111001149	61	152	160	18	17	295	303	813	897	46	51	149	0.947	2.6	10	PKG611380

*Smooth



Product: 60-HD-00-BLK-BLK-AVG-STD-23.5

Project : Sherburne County Closure Pond 2, MN

Cust PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*

Date: October 7, 2019

SKAPS SO: 31C1900102

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

Roll Number	Thickness MAV (mil)	Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Puncture Resist (lb)	Density (g/cc)	Carbon Black (%)	Carbon Black Disper (Cat 1 & 2)	Resin Lot #
	ASTM D 5199	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	
		MD	TD	MD	TD	MD	TD	MD	TD	MD	TD					
3111001150	61	152	160	18	17	295	303	813	897	46	51	149	0.947	2.6	10	PKG611380
3111001151	61	152	160	18	17	295	303	813	897	46	51	149	0.947	2.6	10	PKG611380
3111001152	61	152	160	18	17	295	303	813	897	46	51	149	0.947	2.6	10	PKG611380
3111001153	61	152	160	18	17	295	303	813	897	46	51	149	0.947	2.6	10	PKG611380
3111001154	61	157	166	19	17	278	274	766	802	46	50	151	0.947	2.3	10	PKG611380
3111001155	61	157	166	19	17	278	274	766	802	46	50	151	0.947	2.3	10	PKG611380
3111001156	61	157	166	19	17	278	274	766	802	46	50	151	0.947	2.3	10	PKG611380
3111001157	62	157	166	19	17	278	274	766	802	46	50	151	0.947	2.3	10	PKG611380



Product: 60-HD-11-BLK-BLK-GRI-STD-23.5
Project : Sherburne County Closure Pond 2, MN
Cust PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*
Date: October 1, 2019
SKAPS SO: 31C1900102

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

Roll Number	Thickness MAV (mil)	Asperity Height (mil)		Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Puncture Resist (lb)	Density (g/cc)	Carbon Black (%)	Carbon Black Disper (Cat 1 & 2)	Resin Lot #
	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	
		Side A	Side B	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD					
3111000522	60	20	22	160	162	18	16	205	159	556	437	56	52	151	0.946	2.7	10	PKC810930
3111000525	61	20	22	156	163	18	16	207	183	556	538	56	52	151	0.946	2.4	10	PKC810930
3111000527	62	22	22	156	163	18	16	207	183	556	538	56	52	151	0.946	2.4	10	PKC810930
3111000531	59	20	20	156	165	17	16	200	171	544	505	52	54	144	0.946	2.5	9	PKC810930
3111000534	60	22	22	156	162	17	15	202	168	560	465	52	54	144	0.946	2.6	9	PKC810930
3111000536	59	21	23	156	162	17	15	202	168	560	465	52	54	144	0.946	2.6	9	PKC810930
3111000537	60	20	22	156	162	17	15	202	168	560	465	52	54	144	0.946	2.6	9	PKC810930
3111000539	61	21	24	152	160	18	15	191	177	509	517	52	56	148	0.947	2.5	10	PKC810930
3112001796	58	21	24	156	161	17	16	186	156	498	452	48	52	146	0.946	2.7	10	PKG611200
3112001797	59	21	24	156	161	17	16	186	156	498	452	48	52	146	0.946	2.7	10	PKG611200
3112001798	59	21	24	156	161	17	16	186	156	498	452	48	52	146	0.946	2.7	10	PKG611200
3112001799	59	20	24	156	161	17	16	186	156	498	452	48	52	146	0.946	2.7	10	PKG611200



Product: 60-HD-11-BLK-BLK-GRI-STD-23.5
Project : Sherburne County Closure Pond 2, MN
Cust PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*
Date: October 1, 2019
SKAPS SO: 31C1900102

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

Roll Number	Thickness MAV (mil)	Asperity Height (mil)		Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Puncture Resist (lb)	Density (g/cc)	Carbon Black (%)	Carbon Black Disper (Cat 1 & 2)	Resin Lot #
	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	
		Side A	Side B	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD					
3112001800	59	21	25	149	159	16	15	190	167	516	467	51	48	145	0.947	2.5	10	PKG611200
3112001801	59	23	24	149	159	16	15	190	167	516	467	51	48	145	0.947	2.5	10	PKG611620
3112001802	59	23	25	149	159	16	15	190	167	516	467	51	48	145	0.947	2.5	10	PKG611620
3112002006	58	18	17	148	156	18	15	208	186	579	560	51	54	149	0.947	2.5	10	PKF610080
3112002007	57	18	16	148	156	18	15	208	186	579	560	51	54	149	0.947	2.5	10	PKF610080
3112002010	58	19	19	160	159	16	15	198	165	541	494	51	54	149	0.947	2.5	10	PKF610080
3112002011	58	21	18	160	159	16	15	198	165	541	494	51	54	149	0.947	2.5	10	PKF610080
3112002015	59	20	21	161	158	18	17	208	190	558	550	51	56	154	0.946	2.4	10	PKF610080
3112002016	61	17	19	161	158	18	17	208	190	558	550	51	56	154	0.946	2.4	10	PKF610080
3112002017	60	18	18	161	158	18	17	208	190	558	550	51	56	154	0.946	2.4	10	PKF610080
3112002018	59	19	17	161	158	18	17	208	190	558	550	51	56	154	0.946	2.4	10	PKF610080
3112002020	59	17	17	173	158	16	18	195	213	558	568	51	56	154	0.946	2.5	10	PKF610080



Product: 60-HD-11-BLK-BLK-GRI-STD-23.5
Project : Sherburne County Closure Pond 2, MN
Cust PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*
Date: October 1, 2019
SKAPS SO: 31C1900102

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

Roll Number	Thickness MAV (mil)	Asperity Height (mil)		Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Puncture Resist (lb)	Density (g/cc)	Carbon Black (%)	Carbon Black Disper (Cat 1 & 2)	Resin Lot #
	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	
		Side A	Side B	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD					
3112002021	60	20	19	173	158	16	18	195	213	558	568	51	56	154	0.946	2.5	10	PKF610080
3112002022	61	19	18	173	158	16	18	195	213	558	568	51	56	154	0.946	2.5	10	PKF610080
3112002023	61	18	18	173	158	16	18	195	213	558	568	51	56	154	0.946	2.5	10	PKF610080
3112002024	60	20	18	156	163	18	17	207	221	553	601	49	53	145	0.946	2.4	10	PKF610080
3112002025	59	19	19	156	163	18	17	207	221	553	601	49	53	145	0.946	2.4	10	PKF610080
3112002026	62	19	19	156	163	18	17	207	221	553	601	49	53	145	0.946	2.4	10	PKF610080
3112002027	61	20	19	156	163	18	17	207	221	553	601	49	53	145	0.946	2.4	10	PKF610080
3112002029	60	17	18	150	154	19	16	210	172	578	512	49	53	145	0.946	2.6	10	PKF610080
3112002030	60	17	18	150	154	19	16	210	172	578	512	49	53	145	0.946	2.6	10	PKF610080
3112002031	61	18	18	150	154	19	16	210	172	578	512	49	53	145	0.946	2.6	10	PKF610080
3112002032	61	17	19	150	154	19	16	210	172	578	512	49	53	145	0.946	2.6	10	PKG611320
3112002033	61	19	17	150	154	19	16	210	172	578	512	49	53	145	0.946	2.6	10	PKG611320



Product: 60-HD-11-BLK-BLK-GRI-STD-23.5
Project : Sherburne County Closure Pond 2, MN
Cust PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*
Date: October 1, 2019
SKAPS SO: 31C1900102

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

Roll Number	Thickness MAV (mil)	Asperity Height (mil)		Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Puncture Resist (lb)	Density (g/cc)	Carbon Black (%)	Carbon Black Disper (Cat 1 & 2)	Resin Lot #
	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	
		Side A	Side B	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD					
3112002035	61	18	19	159	163	17	16	202	172	554	448	51	46	141	0.946	2.6	10	PKG611320
3112002036	60	17	17	159	163	17	16	202	172	554	448	51	46	141	0.946	2.6	10	PKG611320
3112002038	60	20	18	148	150	18	17	199	159	559	451	51	46	141	0.946	2.3	10	PKG611320
3112002041	59	19	18	148	150	18	17	199	159	559	451	51	46	141	0.946	2.3	10	PKG611320
3112002043	58	18	18	162	170	16	16	205	193	555	565	50	53	144	0.947	2.3	10	PKG611320
3112002044	58	19	18	162	170	16	16	205	193	555	565	50	53	144	0.947	2.3	10	PKG611320
3112002045	60	19	16	162	170	16	16	205	193	555	565	50	53	144	0.947	2.3	10	PKG611320
3112002086	59	23	23	148	155	17	16	196	170	541	515	53	49	146	0.946	2.4	10	PKG611330
3112002126	58	21	21	150	164	18	15	197	181	537	528	51	55	145	0.947	2.5	10	PKG611330
3112002127	57	22	22	150	164	18	15	197	181	537	528	51	55	145	0.947	2.5	10	PKG611330
3112002128	58	22	23	150	164	18	15	197	181	537	528	51	55	145	0.947	2.5	10	PKG611330
3112002129	58	22	22	150	164	18	15	197	181	537	528	51	55	145	0.947	2.5	10	PKG611330



Product: 60-HD-11-BLK-BLK-GRI-STD-23.5
 Project : Sherburne County Closure Pond 2, MN
 Cust PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*
 Date: October 1, 2019
 SKAPS SO: 31C1900102

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

Roll Number	Thickness MAV (mil)	Asperity Height (mil)		Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Puncture Resist (lb)	Density (g/cc)	Carbon Black (%)	Carbon Black Disper (Cat 1 & 2)	Resin Lot #
	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	
		Side A	Side B	MD	TD	MD	TD	MD	TD	MD	TD	MD	TD					
3112002130	59	22	22	154	162	18	16	194	185	514	541	51	55	145	0.947	2.6	10	PKG611330
3112002131	59	22	22	154	162	18	16	194	185	514	541	51	55	145	0.947	2.6	10	PKG611330
3112002132	58	22	21	154	162	18	16	194	185	514	541	51	55	145	0.947	2.6	10	PKG611330
3112002133	57	22	22	154	162	18	16	194	185	514	541	51	55	145	0.947	2.6	10	PKG611330
3112002134	57	22	22	154	162	18	16	194	185	514	541	51	55	145	0.947	2.6	10	PKG611330
3112002135	58	22	20	156	160	17	16	205	188	552	555	50	55	148	0.946	2.6	10	PKG611330
3112002136	58	21	22	156	160	17	16	205	188	552	555	50	55	148	0.946	2.6	10	PKG611330
3112002137	59	23	22	156	160	17	16	205	188	552	555	50	55	148	0.946	2.6	10	PKG611330
3112002138	58	21	22	156	160	17	16	205	188	552	555	50	55	148	0.946	2.6	10	PKG611330



Product: 60-HD-00-BLK-BLK-AVG-STD-23.5

Project : Sherburne County Closure Pond 2, MN

Cust PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*

Date: April 20, 2020

SKAPS SO: 31C1900102

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

Roll Number	Thickness MAV (mil)	Tensile at Yield (ppi)		Elong at Yield (%)		Tensile at Break (ppi)		Elong at Break (%)		Tear Resistance (lb)		Puncture Resist (lb)	Density (g/cc)	Carbon Black (%)	Carbon Black Disper (Cat 1 & 2)	Resin Lot #
	ASTM D 5199	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	
		MD	TD	MD	TD	MD	TD	MD	TD	MD	TD					
2111001152	61	152	160	18	17	205	202	812	807	46	51	140	0.947	2.6	10	PKG611380
3111001154	61	157	160	19	17	270	274	766	802	46	50	151	0.947	2.6	10	PKG611380
3111001155	61	157	160	19	17	270	274	766	802	46	50	151	0.947	2.6	10	PKG611380
3111001156	61	157	160	19	17	270	274	766	802	46	50	151	0.947	2.6	10	PKG611380
3111001157	62	157	160	19	17	270	274	766	802	46	50	151	0.947	2.6	10	PKG611380
3111001182	61	155	161	18	17	283	288	787	854	46	50	145	0.946	2.6	10	PKG611390
3111001183	61	155	161	18	17	283	288	787	854	46	50	145	0.946	2.6	10	PKG611390
3111001184	61	155	161	18	17	283	288	787	854	46	50	145	0.946	2.6	10	PKG611390



Product: 60-HD-11-BLK-BLK-GRI-STD-23.5
Project: Sherburne County Closure Pond 2, MN
Customer PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*
Date: October 1, 2019
SKAPS SO: 31C1900102

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

Resin Lot #	Resin Manufacturer	Density (g/cc)	Melt Index (g/10m)	OIT 200 ⁰ C; 1 atm O ₂ (minutes)
		ASTM D 1505	ASTM 1238 ^(a)	ASTM D 3895 "Modified"
PKC810930	Chevron Phillips Chemical Company	0.933	0.07	284
PKF610080	Chevron Phillips Chemical Company	0.934	0.08	280
PKG611200	Chevron Phillips Chemical Company	0.934	0.08	279
PKG611320	Chevron Phillips Chemical Company	0.934	0.07	281
PKG611330	Chevron Phillips Chemical Company	0.934	0.07	278
PKG611620	Chevron Phillips Chemical Company	0.936	0.08	254

(a) Condition 190/2.16



Product: 60-HD-00-BLK-BLK-AVG-STD-23.5
Project: Sherburne County Closure Pond 2, MN
Customer PO: 19-07-1083-01

Quality Manager: *Rajesh Patel*
Date: April 20, 2020
SKAPS SO: 31C1900102

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

Resin Lot #	Resin Manufacturer	Density (g/cc)	Melt Index (g/10m)	OIT 200 ⁰ C; 1 atm O ₂ (minutes)
		ASTM D 1505	ASTM 1238 ^(a)	ASTM D 3895 "Modified"
PKG611380	Chevron Phillips Chemical Company	0.934	0.07	278
PKG611390	Chevron Phillips Chemical Company	0.936	0.08	272

(a) Condition 190/2.16

Certificate of Analysis

Shipped To: SKAPS
571 Industrial Park Way
COMMERCE GA 30529-1326
USA

Recipient: Patel
Fax:

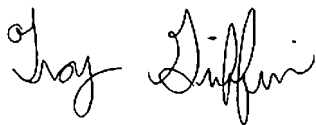
Delivery #: 89888097
PO #: 30131190016
Weight: 184900.000 LB
Ship Date: 04/29/2019
Package: BULK
Mode: Hopper Car
Car #: CEFX053933
Seal No: 164695

Product:
MARLEX K306 POLYETHYLENE in Bulk

Lot Number: PKC810930

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.080	g/10min
HLMI Flow Rate	ASTM D1238	10.70	g/10min
Density	D1505 or D4883	0.9370	g/cm3

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.



Troy Griffin
Quality Systems Coordinator

For CoA questions contact Melissa Alexander at +-832-813-4244

Certificate of Analysis

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COMMERCE GA 30529-1326
USA

Recipient: Patel
Fax:

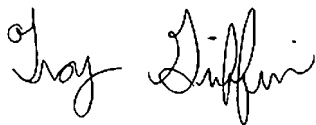
Delivery #: 80002967
PO #: 30131190238
Weight: 182800.000 LB
Ship Date: 07/18/2019
Package: BULK
Mode: Hopper Car
Car #: CPCX814553
Seal No: 174285

Product:
MARLEX K306 POLYETHYLENE in Bulk

Lot Number: PKF610080

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.080	g/10min
HLMI Flow Rate	ASTM D1238	11.70	g/10min
Density	D1505 or D4883	0.9370	g/cm3

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.



Troy Griffin
Quality Systems Coordinator

For CoA questions contact James Garcia at +1-832-813-4806

Certificate of Analysis

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571 Industrial Park Way
COMMERCE GA 30529-1326
USA

Recipient: Patel
Fax:

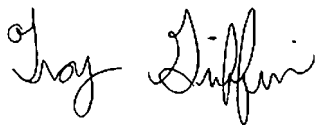
Delivery #: 80012614
PO #: 30131190342
Weight: 183200.000 LB
Ship Date: 08/01/2019
Package: BULK
Mode: Hopper Car
Car #: GPLX077119
Seal No: 148754

Product:
MARLEX K306 POLYETHYLENE in Bulk

Lot Number: PKG611200

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.080	g/10min
HLMI Flow Rate	ASTM D1238	10.90	g/10min
Density	D1505 or D4883	0.9370	g/cm3

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.



Troy Griffin
Quality Systems Coordinator

For CoA questions contact James Garcia at +1-832-813-4806

Certificate of Analysis

Shipped To: SKAPS
571 Industrial Park Way
COMMERCE GA 30529-1326
USA

Recipient: UA- OP
Fax:

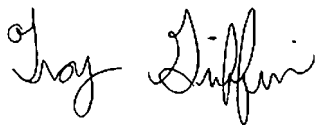
Delivery #: 80033059
PO #: 30131190395
Weight: 183700.000 LB
Ship Date: 08/31/2019
Package: BULK
Mode: Hopper Car
Car #: SHQX041365
Seal No: 148810

Product:
MARLEX K306 POLYETHYLENE in Bulk

Lot Number: PKG611320

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.080	g/10min
HLMI Flow Rate	ASTM D1238	10.30	g/10min
Density	D1505 or D4883	0.9370	g/cm3

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Troy Griffin
Quality Systems Coordinator

For CoA questions contact James Garcia at +1-832-813-4806

Certificate of Analysis

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571 Industrial Park Way
COMMERCE GA 30529-1326
USA

Recipient: Patel
Fax:

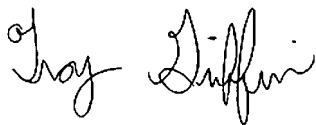
Delivery #: 80033060
PO #: 30131190395
Weight: 183600.000 LB
Ship Date: 08/31/2019
Package: BULK
Mode: Hopper Car
Car #: CPCX815937
Seal No: 148807

Product:
MARLEX K306 POLYETHYLENE in Bulk

Lot Number: PKG611330

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.090	g/10min
HLMI Flow Rate	ASTM D1238	10.20	g/10min
Density	D1505 or D4883	0.9370	g/cm3

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.



Troy Griffin
Quality Systems Coordinator

For CoA questions contact James Garcia at +1-832-813-4806

Certificate of Analysis

Shipped To: SKAPS
571 Industrial Park Way
COMMERCE GA 30529-1326
USA

Recipient: Patel
Fax:

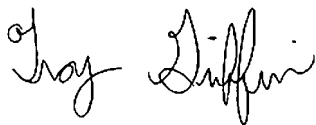
Delivery #: 80012611
PO #: 30131190342
Weight: 183400.000 LB
Ship Date: 08/01/2019
Package: BULK
Mode: Hopper Car
Car #: CHVX896696
Seal No: 148899

Product:
MARLEX K306 POLYETHYLENE in Bulk

Lot Number: PKG611620

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.080	g/10min
HLMI Flow Rate	ASTM D1238	11.10	g/10min
Density	D1505 or D4883	0.9370	g/cm3

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.



Troy Griffin
Quality Systems Coordinator

For CoA questions contact James Garcia at +1-832-813-4806

Certificate of Analysis

Shipped To: SKAPS
571 Industrial Park Way
COMMERCE GA 30529-1326
USA

Recipient: Patel
Fax:

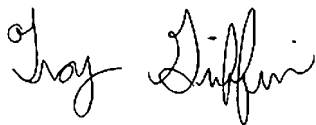
Delivery #: 80022001
PO #: 30131190395
Weight: 184100.000 LB
Ship Date: 08/15/2019
Package: BULK
Mode: Hopper Car
Car #: CHVX890506
Seal No: 148600

Product:
MARLEX K306 POLYETHYLENE in Bulk

Lot Number: PKG611380

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.090	g/10min
HLMI Flow Rate	ASTM D1238	10.10	g/10min
Density	D1505 or D4883	0.9370	g/cm3

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.



Troy Griffin
Quality Systems Coordinator

For CoA questions contact James Garcia at +1-832-813-4806

Certificate of Analysis

Shipped To: SKAPS
571 Industrial Park Way
COMMERCE GA 30529-1326
USA

Recipient: Patel
Fax:

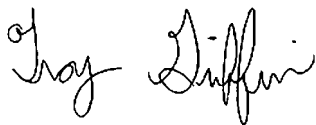
Delivery #: 80022002
PO #: 30131190395
Weight: 184000.000 LB
Ship Date: 08/15/2019
Package: BULK
Mode: Hopper Car
Car #: CPCX816201
Seal No: 148582

Product:
MARLEX K306 POLYETHYLENE in Bulk

Lot Number: PKG611390

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.080	g/10min
HLMI Flow Rate	ASTM D1238	10.30	g/10min
Density	D1505 or D4883	0.9370	g/cm3

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.



Troy Griffin
Quality Systems Coordinator

For CoA questions contact James Garcia at +1-832-813-4806

Tensiometer Calibration Certificate

Demtech Services, Inc.
Placerville, California, USA

CALIBRATION CERTIFICATE

Tensiometer Model:

Pro-Tester T-0100

Device Calibrated:

S-Type load cell
0 - 750 lbs. Tension

Range:

Model No:

M2405-750#

Serial No:

116359

Calibration Apparatus:

Pro-Cal unit, model TC-0100/A

A/D Module Model No:

T-029

A/D Module Serial No:

4519116359

Channel No:

N/A

Dead Weight:

W1

2

W2

152

W3

302

Reference Cell:

R1

2

R2

152

R3

302

Indicator reading with no load:

0

Offset

4.246237

Scale:

3.323518

Applied Force lbs.

2
52
102
152
202
252
302

Cell Response:

2
52
102
152
202
252
302

Deviation Error:

0.00
0.00
0.00
0.00
0.00
0.00
0.00

Total Deviation Error (%)

0.00%

Temperature at time of calibration:

73 degrees F

Excitation Voltage:

5

V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

Calibration Technician:

Frank Kawa

Date:

03/02/20

Signature:

Demtech Services, Inc.
Placerville, California, USA

CALIBRATION CERTIFICATE

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell
Range: 0 - 750 lbs. Tension

Model No: M2405-750#

Serial No: 116420

A/D Module Model No: T-029

A/D Module Serial No: 4519116420

Channel No: N/A

Indicator reading with no load: 0

Calibration Apparatus:

Pro-Cal unit, model TC-0100/A

Dead Weight:

W1	2
W2	152
W3	302

Reference Cell:

R1	2
R2	152
R3	302

Offset: 4.012568

Scale: 3.331239

Applied Force lbs.

2
52
102
152
202
252
302

Cell Response:

2
52
102
152
202
252
302

Deviation Error:

0.00
0.00
0.00
0.00
0.00
0.00
0.00

Total Deviation Error (%): 0.00%

Temperature at time of calibration: 73 degrees F

Excitation Voltage: 5 V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

Calibration Technician:

Frank Kawa

Date: 03/02/20

Signature:

[Signature]

As-Built Panel Layout Drawing



NOTE:

1. RECORD DRAWING IS BASED ON FIELD OBSERVATIONS AND NOT SURVEYED LOCATIONS.

Subgrade Acceptance Forms



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 41,429 Liner / GCL

PANEL NUMBERS: P1 - P14

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

[Signature] _____ Supervisor _____ 4/24/2020
Signature Title DATE

AUTHORIZED REPRESENTATIVE OF *cmc*

Ashton Kogel _____ Engineer _____ 4/24/20
Signature Title DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 31,126 ~~36,671~~ Liner / GCL

PANEL NUMBERS: P15 - P26 - P42 - P26

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie _____ Supervisor _____ 4/25/2020
Signature Title DATE

AUTHORIZED REPRESENTATIVE OF CNC

Ashton Kogel _____ Engineer _____ 4/25/20
Signature Title DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature Title DATE

405 East Forest Street, Suite 110, Oconomowoc, WI 53066

Rev 5-26-09



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 55,584 Liner / GCL

PANEL NUMBERS: P27-P39

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie
Signature

Supervisor
Title

4/27/2020
DATE

AUTHORIZED REPRESENTATIVE OF

Ashton Koegel
Signature

Engineer
Title

4/27/20
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 48,359 Liner / GCL

PANEL NUMBERS: P40-P51

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie
Signature

Supervisor
Title

4/29/2020
DATE

AUTHORIZED REPRESENTATIVE OF

Ashton Vogel
Signature

Engineer
Title

4/29/20
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 57,563 Liner / GCL

PANEL NUMBERS: P52-P72

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

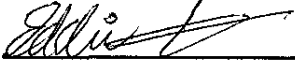
OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

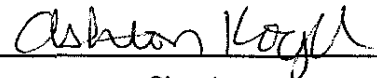
AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC


Signature

Supervisor
Title

4/30/2020
DATE

AUTHORIZED REPRESENTATIVE OF


Signature

Engineer
Title

4/30/2020
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 8,389 Liner / GCL

PANEL NUMBERS: P72-P75

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie
Signature

Supervisor
Title

5/1/2020
DATE

AUTHORIZED REPRESENTATIVE OF

Ashley Vogel
Signature

Engineer
Title

5/1/2020
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 24,608 Liner / GCL

PANEL NUMBERS: P76-P81

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie
Signature

Supervisor
Title

5/2/2020
DATE

AUTHORIZED REPRESENTATIVE OF

Ashton Kogel
Signature

Engineer
Title

5/2/2020
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 64,764 Liner / GCL

PANEL NUMBERS: P82-P97

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

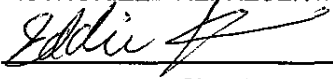
OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

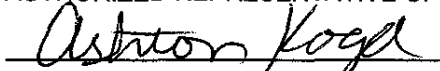
AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC


Signature

Supervisor
Title

5/4/2020
DATE

AUTHORIZED REPRESENTATIVE OF


Signature

Engineer
Title

5/4/2020
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 52,805 Liner / GCL

PANEL NUMBERS: P98 - P106

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

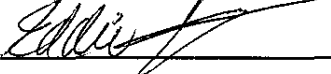
OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC


Signature

Supervisor

Title

5/5/2020

DATE

AUTHORIZED REPRESENTATIVE OF


Signature

Engineer

Title

5/5/20

DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 38,256 Liner / GCL

PANEL NUMBERS: P107 - P116

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

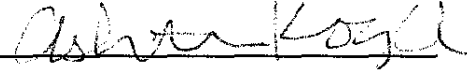
The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

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AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

 Supervisor 5/6/2020
Signature Title DATE

AUTHORIZED REPRESENTATIVE OF

 Engineer 5/6/20
Signature Title DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature Title DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 32,455 Liner / GCL

PANEL NUMBERS: P117 - P133

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie

Signature

Supervisor

Title

5/7/2020

DATE

AUTHORIZED REPRESENTATIVE OF

Whitton Kozel

Signature

Engineer

Title

5/7/20

DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 34,263 Liner / GCL

PANEL NUMBERS: P134 - P142

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

[Signature]

Signature

Supervisor

Title

5/8/2020

DATE

AUTHORIZED REPRESENTATIVE OF

[Signature]

Signature

Engineer

Title

5/8/20

DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Signature

Title

Title

DATE

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 9,822 Liner / GCL

PANEL NUMBERS: P143 - P146

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

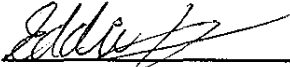
OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC


Signature

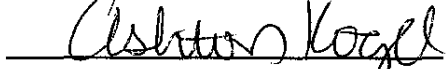
Supervisor

Title

5/9/2020

DATE

AUTHORIZED REPRESENTATIVE OF


Signature

Engineer

Title

5/9/20

DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 68,968 Liner / GCL

PANEL NUMBERS: P147 - P164

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC


Signature

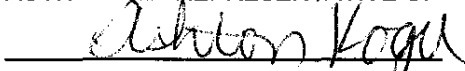
Supervisor

Title

5/11/2020

DATE

AUTHORIZED REPRESENTATIVE OF


Signature

Engineer
Title

5/11/20
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

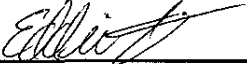
CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC		
PROJECT NAME:	Xcel - Sherco Bottom Ash Pond 2	PROJECT NO: 19-07-1083
LOCATION:	Becker, MN	
AREA ACCEPTED:	58,529 Liner / GCL	
PANEL NUMBERS:	P165 - P187	
GRADE ACCEPTANCE: INSPECTOR: _____		
GENERAL CONTRACTOR: _____		
OWNER: _____		
AUTHORIZED REPRESENTATIVE: _____		

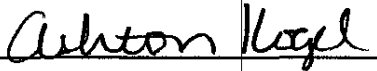
The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

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AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

	Supervisor	5/12/2020
Signature	Title	DATE

AUTHORIZED REPRESENTATIVE OF

	Engineer	5/12/20
Signature	Title	DATE

AUTHORIZED REPRESENTATIVE OF AEP

_____	_____	_____
Signature	Title	DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 9,740 Liner / GCL

PANEL NUMBERS: P188 - P189

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

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AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

[Signature]

Signature

Supervisor

Title

5/13/2020

DATE

AUTHORIZED REPRESENTATIVE OF

Ashton Kogel

Signature

Engineer

Title

5/13/20

DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 22,682 Liner / GCL Texture

PANEL NUMBERS: P190 - P197

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

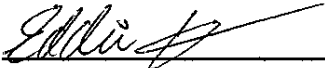
OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

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AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC


Signature

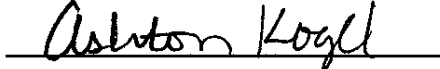
Supervisor

Title

5/14/2020

DATE

AUTHORIZED REPRESENTATIVE OF


Signature

Engineer

Title

5/14/20

DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 25,830 Liner / GCL Smooth

PANEL NUMBERS: P198 -P199

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie _____
Signature Title DATE
5/14/2020

AUTHORIZED REPRESENTATIVE OF

Ashton Kogel _____
Signature Title DATE
5/14/20

AUTHORIZED REPRESENTATIVE OF AEP

Signature Title DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 120,150 Liner / GCL

PANEL NUMBERS: P200 - P210

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

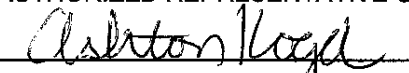
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This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

 Supervisor 5/15/2020
Signature Title DATE

AUTHORIZED REPRESENTATIVE OF

 Engineer 5/15/20
Signature Title DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature Title DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 10,058 Liner / GCL *Smooth*

PANEL NUMBERS: P211 - P213

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie
Signature

Supervisor

Title

5/16/2020

DATE

AUTHORIZED REPRESENTATIVE OF

Ashton Coyle
Signature

Engineer
Title

5/16/20
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 29,479 Liner / GCL Smooth

PANEL NUMBERS: P214 - P223

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie
Signature

Supervisor

Title

5/18/2020

DATE

AUTHORIZED REPRESENTATIVE OF

Ashton Kogel
Signature

Engineer
Title

5/18/20
DATE

AUTHORIZED REPRESENTATIVE OF AEP

Signature

Title

DATE



Global Containment Solutions

CERTIFICATE OF SUBGRADE SURFACE ACCEPTANCE

INSTALLER: Global Containment Solutions, LLC

PROJECT NAME: Xcel - Sherco Bottom Ash Pond 2 PROJECT NO: 19-07-1083

LOCATION: Becker, MN

AREA ACCEPTED: 15,933 Liner / GCL Texture

PANEL NUMBERS: P224 -P226

GRADE ACCEPTANCE: INSPECTOR: _____

GENERAL CONTRACTOR: _____

OWNER: _____

AUTHORIZED REPRESENTATIVE: _____

The undersigned, _____, certifies that he/she is a representative of Global Containment Solutions, LLC authorized to execute this certificate, that he/she has visually inspected the subgrade surface described above on _____ and found the surface to be acceptable for installation of the geomembrane.

This certification is based on observation of the surface of the subgrade only. No subsurface inspections or test have been performed and Global Containment Solutions, LLC makes no representations or warranties regarding conditions which may exist below the surface of the subgrade.

AUTHORIZED REPRESENTATIVE OF GLOBAL CONTAINMENT SOLUTIONS, LLC

Eddie _____
Signature Title DATE
5/19/2020

AUTHORIZED REPRESENTATIVE OF

Ashton Kogel _____
Signature Title DATE
5/19/20

AUTHORIZED REPRESENTATIVE OF AEP

Signature Title DATE

Trial Weld Forms

Global Container Solutions, LLC
Preweld Test Report

Page **1** of

Superintendent: Eddie Keodouangsy

Peel Test Extrusion Minimum	78	PPI
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Peel Test Fusion Minimum	91	PPI
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Shear Test Minimum	120	PPI
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Weld Date		Time		Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Ambient Temp		Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5		Test Results
Liner Type		am	pm								A	B	A	B	A	B	A	B	A	B	
4/24/20		10`20		KS	5374	7	850			Peel	112	112	107	112	104	120					P
TO		S/S									Shear	178	174	172							
4/24/20		10`15A		KP	5375	7	850			Peel	108	109	102	109	108	98					P
TO		S/S									Shear	164	165	164							
4/24/20		1`05P		KP	5374	7	850			Peel	112	129	103	135	104	127					P
TO		S/S									Shear	177	171	169							
4/24/20		1`12P		KS	5374	5	850			Peel	141	147	134	143	135	131					P
TO		T/T									Shear	162	164	161							
4/24/20		1`10P		KS	5375	7	850			Peel	128	130	113	111	131	112					P
TO		S/S									Shear	165	164	161							
4/24/20		1`08P		KP	5375	5	850			Peel	121	128	131	129	124	126					P
TO		T/T									Shear	179	179	168							
4/25/20		7`45A		KS	5374	7	850			Peel	149	135	147	136	133	119					P
TO		S/S									Shear	193	193	193							
4/25/20		7`50A		KS	5374	5	850			Peel	154	133	159	133	137	141					P
TO		T/T									Shear	204	197	190							
4/25/20		7`05A		KP	5375	7	850			Peel	134	126	139	120	131	122					P
TO		S/S									Shear	196	194	189							
4/25/20		12`50P		KP	5375	7	850			Peel	116	112	129	117	105	118					P
TO		S/S									Shear	156	156	157							
4/25/20		12`53P		KP	5375	5	850			Peel	109	112	104	103	106	109					P
TO		S/S									Shear	164	157	167							
4/25/20		12`55P		KS	5374	5	850			Peel	129	136	136	133	136	124					P
TO		T/T									Shear	167	166	166							
4/25/20		12`50P		KS	4374	7	850			Peel	135	118	133	137	118	112					P
TO		S/S									Shear	165	168	161							
4/27/20		7`30A		KP	5375	7	850			Peel	132	134	124	118	129	114					P
TO		S/S									Shear	195	186	182							
4/27/20		7`25A		KS	5374	7	850			Peel	143	135	118	129	135	128					P
TO		S/S									Shear	200	197	197							
4/27/20		7`30A		KS	5374	5	850			Peel	133	134	141	128	134	139					P
TO		T/T									Shear	186</									

Rev 5-26-09

Global Container Solutions, LLC
Preweld Test Report

Page **2** of

Project Name: Xcel - Sherco Bottom Ash Pond 2

Material Type: 60 Mil

Job Description:

Reported By Nalilath Ssavath

Liner Types **S = Smooth** **T = Textured** **SG = Super Grip**

Weld Date Liner Type	Time am pm	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Ambient Temp		Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5		Test Results
									A	B	A	B	A	B	A	B	A	B	
4/27/20	12' 05P	KS	5374	5	850			Peel	132	129	128	136	131	139					P
TO	T/T								Shear	169		173	175						
4/27/20	12' 00P	KP	5375	7	850			Peel	120	129	139	119	128	116					P
TO	S/S								Shear	167		165	165						
4/27/20	11' 50P	KP	5375	5	850			Peel	144	138	142	144	149	161					P
TO	T/T								Shear	182		193	195						
4/29/20	9' 35A	KP	5375	7	850			Peel	148	148	135	137	139	133					P
TO	S/S								Shear	234		230	228						
4/29/20	9' 40A	KP	5375	5	850			Peel	150	146	144	125	128	138					P
TO	T/T								Shear	195		196	197						
4/29/20	9' 30A	KS	5374	7	850			Peel	135	130	128	129	144	139					P
TO	S/S								Shear	225		211	218						
4/29/20	9' 40A	KS	5374	5	850			Peel	145	163	150	161	159	137					P
TO	T/T								Shear	212		211	209						
4/29/20	12' 45P	KS	5374	7	850			Peel	127	127	127	122	122	120					P
TO	S/S								Shear	196		189	194						
4/29/20	12' 47P	KS	5374	5	850			Peel	150	136	134	122	126	134					P
TO	T/T								Shear	156		163	165						
4/29/20	12' 50P	KP	5375	7	850			Peel	116	126	112	120	130	140					P
TO	S/S								Shear	193		196	180						
4/29/20	1' 00P	KP	5375	5	850			Peel	138	118	135	112	123	132					P
TO	T/T								Shear	167		167	166						
4/30/20	7' 50A	KP	5375	7	850			Peel	125	130	130	111	126	128					P
TO	S/S								Shear	203		217	210						
4/30/20	7' 55A	KP	5375	5	850			Peel	109	116	111	112	111	131					P
TO	T/T								Shear	179		184	189						
4/30/20	8' 00A	TV	5374	7	850			Peel	133	123	128	106	120	130					P
TO	S/S								Shear	206		206	201						
4/30/20	8' 05A	TV	5374	5	850			Peel	125	129	122	126	115	137					P
TO	T/T								Shear	191		190	196						
4/30/20	7' 50A	KS	566		500	500		Peel	125		124		113						P
TO									Shear	210		206	199						
4/30/20	1' 00P	KP	566		500	500		Peel	105		108		111						P
TO									Shear	150		151	142						

Rev 5-26-08

Page **3** of

Superintendent: Eddie Keodouangsy

Primary Layer

Pond	X	Peel Test Extrusion Minimum	78	PPI
Cell		Peel Test Fusion Minimum	91	PPI
Cap		Shear Test Minimum	120	PPI

Other

Weild Date	Time	Operator	Mach	Mach	Mach	Preheat	Ambient		Coupon 1	Coupon 2	Coupon 3	Coupon 4	Coupon 5	Test
Liner Type	am pm	Name/ ID	No.	Speed	Temp	Temp	Temp		A B	A B	A B	A B	A B	Results
4/30/20	1*00P	KS	5375	7	850			Peel	115 122	118 109	105 114			P
TO	S/S								160	165	170			
4/30/20	1*10P	KS	5375	5	850			Peel	123 119	119 132	132 129			P
TO	T/T								172	175	169			
4/30/20	1*10P	TV	5374	7	850			Peel	115 123	101 115	110 108			P
TO	S/S								155	158	159			
4/30/20	1*15P	TV	5374	5	850			Peel	128 140	136 137	141 125			P
TO	T/T								173	171	166			
5/1/20	8*10A	KP	566		500	500		Peel	107	100	98			P
TO									163	174	168			
5/1/20	8*00A	TV	5374	7	850			Peel	114 150	131 127	126 134			P
TO	S/S								191	195	189			
5/1/20	8*05A	TV	5374	5	850			Peel	156 152	142 132	151 132			P
TO	T/T								163	174	168			
5/2/20	7*50A	TV	5374	7	850			Peel	151 154	127 139	129 143			P
TO	S/S								217	212	216			
5/2/20	7*52A	TV	5374	5	850			Peel	145 151	150 155	135 142			P
TO	T/T								207	198	196			
5/2/20	8*10A	KP	566		500	500		Peel	113	97	109			P
TO									198	194	190			
5/4/20	8*00A	KS	5375	7	850			Peel	145 140	143 142	140 140			P
TO	S/S								230	231	235			
5/4/20	8*03A	KS	5375	5	850			Peel	133 136	140 139	131 148			P
TO	T/T								219	211	220			
5/4/20	8*00A	TV	5374	7	850			Peel	132 118	133 119	127 128			P
TO	S/S								213	212	215			
5/4/20	8*05A	TV	5374	5	850			Peel	153 163	132 148	160 141			P
TO	T/T								229	222	220			
5/4/20	8*15A	KP	566		500	500		Peel	117	120	110			P
TO									197	188	201			
5/4/20	1*30P	KS	5375	7	850			Peel	113 131	100 111	109 99			P
TO	T/T								186	179	179			
5/4/20	1*35P	KS	5374	5	850			Peel	139 128	132 124	133 117			P
TO	S/S								174	186	180			

Global Container Solutions, LLC

Preweld Test Report

Page 4 of

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath Ssavath

Primary Layer

Other

Pond	X
Cell	
Cap	

Peel Test Extrusion Minimum 78 PPI

Peel Test Fusion Minimum 91 PPI

Shear Test Minimum 120 PPI

Liner Types S = Smooth T = Textured SG = Super Grip

Weld Date	Time	Operator	Mach	Mach	Mach	Preheat	Ambient		Coupon 1	Coupon 2	Coupon 3	Coupon 4	Coupon 5	Test
Liner Type	am pm	Name/ ID	No.	Speed	Temp	Temp	Temp		A B	A B	A B	A B	A B	Results
5/4/20	1' 30P	TV	5374	7	850			Peel	119 118	112 136	107 125			P
TO	S/S							Shear	185	175	189			
5/4/20	1' 35P	TV	5374	5	850			Peel	125 139	116 131	120 126			P
TO	T/T							Shear	186	179	164			
5/4/20	1' 30P	KP	566		500	500		Peel	117	131	109			P
TO								Shear	167	166	160			
5/5/20	8' 50A	TV	3574	5	850			Peel	110 115	98 110	106 108			P
TO								Shear	162	160	163			
5/5/20	9' 15A	KS	5375	7	850			Peel	123 134	120 133	121 130			P
TO								Shear	171	166	178			
5/5/20	2' 15P	KS	5375	7	850			Peel	112 137	110 116	111 109			P
TO								Shear	176	175	178			
5/5/20	2' 10P	KS	5375	5	850			Peel	121 119	106 115	118 111			P
TO								Shear	169	172	171			
5/5/20	1' 15P	TV	5374	7	850			Peel	130 137	131 113	134 130			P
TO								Shear	170	161	167			
5/5/20	1' 20P	TV	5374	5	850			Peel	130 138	127 134	130 131			P
TO								Shear	176	174	172			
5/5/20	1' 20P	KP	566		500	500		Peel	131	121	127			P
TO								Shear	167	167	157			
5/6/20	8' 17A	TV	5374	5	850			Peel	109 120	97 125	115 125			P
TO								Shear	182	190	187			
5/6/20	8' 15A	TV	5374	7	850			Peel	128 134	119 129	132 129			P
TO								Shear	183	183	177			
5/6/20	10' 15A	KS	5375	7	850			Peel	106 102	105 111	105 118			P
TO								Shear	180	179	189			
5/6/20	8' 00A	KP	566		500	500		Peel	116	96	113			P
TO								Shear	170	179	172			
5/6/20	1' 00P	KS	5375	7	850			Peel	121 119	112 112	110 116			P
TO								Shear	171	172	177			
5/6/20	1' 00P	TV	5374	7	850			Peel	112 112	118 109	110 120			P
TO								Shear	160	161	171			
5/6/20	1' 05P	TV	5374	5	850			Peel	120 129	119 123	132 123			P
TO								Shear	160	170	154			

Global Container Solutions, LLC

Preweld Test Report

Page **5** of **5**

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath Ssavath

Primary Layer

Other

Pond	X
Cell	
Cap	

Peel Test Extrusion Minimum 78 **PPI**

Peel Test Fusion Minimum 91 **PPI**

Shear Test Minimum 120 **PPI**

Liner Types S = Smooth T = Textured SG = Super Grip

Weld Date	Time	Operator	Mach	Mach	Mach	Preheat	Ambient		Coupon 1	Coupon 2	Coupon 3	Coupon 4	Coupon 5	Test
Liner Type	am pm	Name/ ID	No.	Speed	Temp	Temp	Temp		A B	A B	A B	A B	A B	Results
5/6/20	3'00P	KP	566		500	500		Peel	93	94	99			P
TO								Shear	172	167	148			
5/7/20	8'40A	KS	5375	5	850			Peel	126 136	131 129	135 129			P
TO								Shear	212	203	208			
5/7/20	8'45A	KS	5374	7	850			Peel	137 152	149 139	131 128			P
TO								Shear	214	211	210			
5/7/20	8'30A	TV	5374	5	850			Peel	112 109	115 119	129 109			P
TO								Shear	204	203	209			
5/7/20	8'35A	TV	5374	7	850			Peel	145 155	134 143	125 120			P
TO								Shear	207	199	202			
5/7/20	1'10P	TV	5374	7	850			Peel	126 131	125 128	117 120			P
TO								Shear	175	173	179			
5/7/20	1'15P	TV	5374	5	850			Peel	140 132	126 122	121 129			P
TO								Shear	160	164	163			
5/7/20	1'00P	KS	5375	7	850			Peel	127 128	124 125	113 120			P
TO								Shear	171	166	163			
5/7/20	1'05P	KS	5375	5	850			Peel	130 133	127 135	120 125			P
TO								Shear	155	147	151			
5/8/20	8'00A	KS	5375	7	850			Peel	131 119	119 140	126 120			P
TO								Shear	232	235	227			
5/8/20	8'05A	KS	5375	5	850			Peel	146 164	135 143	163 152			P
TO								Shear	229	227	221			
5/8/20	8'00A	TV	5374	7	850			Peel	145 162	117 128	157 141			P
TO								Shear	222	220	222			
5/8/20	8'05A	TV	5374	5	850			Peel	146 159	129 153	151 145			P
TO								Shear	227	221	211			
5/8/20	8'45A	KP	566		500	500		Peel	95	112	126			P
TO								Shear	200	226	200			
5/8/20	1'05P	TV	5374	7	850			Peel	124 142	119 122	131 126			P
TO								Shear	179	197	189			
5/8/20	1'10P	TV	5374	5	850			Peel	126 102	122 131	124 120			P
TO								Shear	173	178	175			
5/8/20	1'10P	KP	566		500	500		Peel	114	105	106			P
TO								Shear	179	170	178			

Global Container Solutions, LLC
Preweld Test Report

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Liner Types **S = Smooth** **T = Textured** **SG = Super Grip**

Weld Date Liner Type	Time		Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Ambient Temp		Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5		Test Results
	am	pm								A	B	A	B	A	B	A	B	A	B	
5/8/20	1' 10P		KS	5375	7	850			Peel	146	136	145	138	117	134					P
TO										Shear	190	184	177							
5/8/20	1' 05A		KS	5375	5	850			Peel	135	141	129	137	128	136					P
TO										Shear	190	197	195							
5/9/20	7' 40A		KS	5375	7	850			Peel	116		103		106						P
TO										Shear	182	196	177							
5/9/20	7' 45A		KS	5375	5	850			Peel	133	143	134	130	149	134					P
TO										Shear	226	226	219							
5/9/20	7' 40A		TV	5374	7	850			Peel	160	175	146	164	139	139					P
TO										Shear	229	220	224							
5/9/20	7' 45A		TV	5374	5	850			Peel	127	153	121	140	112	146					P
TO										Shear	224	221	223							
5/9/20	7' 45A		KP	566		500	500		Peel	168	138	167	137	144	122					P
TO										Shear	218	208	213							
5/11/20	8' 30A		KS	5375	7	850			Peel	133	114	126	138	122	115					P
TO										Shear	190	189	191							
5/11/20	8' 35A		KS	5375	5	850			Peel	147	149	151	151	143	146					P
TO										Shear	195	198	194							
5/11/20	8' 24A		TV	5374	7	850			Peel	151	121	140	110	134	135					P
TO										Shear	191	190	190							
5/11/20	8' 30A		TV	5374	5	850			Peel	134	135	134	139	129	140					P
TO										Shear	213	206	204							
5/11/20	1' 05P		KP	566		500	500		Peel	148		141		137						P
TO										Shear	178	178	183							
5/11/20	12' 55P		TV	5374	7	850			Peel	119	141	115	131	116	129					P
TO										Shear	191	189	184							
5/11/20	12' 57P		TV	5374	5	850			Peel	122	138	122	137	126	129					P
TO										Shear	164	165	158							
5/11/20	1' 10P		KS	5375	7	850			Peel	136	119	118	118	118	124					P
TO										Shear	198	190	194							
5/11/20	1' 15P		KS	5375	5	850			Peel	137	148	151	146	140	146					P
TO										Shear	195	198	194							
5/12/20	7' 45S		KS	5375	7	850			Peel	139	144	127	133	131	130					P
TO										Shear	225	227	226							

Global Container Solutions, LLC
Preweld Test Report

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Pond	X
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Peel Test Extrusion Minimum	78	PPI
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Job Description:

Cell

Peel Test Fusion Minimum	91	PPI
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Reported By Nalilath Ssavath

Other

Cap

Shear Test Minimum	120	PPI
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Liner Types **S = Smooth** **T = Textured** **SG = Super Grip**

Weld Date Liner Type	Time am pm	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Ambient Temp			Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5		Test Results
										A	B	A	B	A	B	A	B	A	B	
5/12/20	7:50A	KS	5375	5	850			Peel	Shear	144	146	133	134	130	118					P
TO										219	206	202								
5/12/20	7:50A	TV	5374	7	850			Peel	Shear	150	149	142	138	154	141					P
TO										219	220	205								
5/12/20	7:55A	TV	5374	5	850			Peel	Shear	146	140	160	129	141	128					P
TO										209	216	202								
5/12/20	1:05P	TV	5374	7	850			Peel	Shear	114	108	110	106	109	105					P
TO										170	163	171								
5/12/20	1:10P	TV	5374	5	850			Peel	Shear	125	127	125	128	115	114					P
TO										150	161	158								
5/12/20	1:05P	KS	5375	7	850			Peel	Shear	114	132	107	128	115	114					P
TO										170	165	171								
5/12/20	1:10P	KS	5375	5	850			Peel	Shear	131	137	113	125	125	115					P
TO										167	171	169								
5/12/20	1:25P	KP	566		500	500		Peel	Shear	109		113		109						P
TO										170	162	165								
5/13/20	8:00A	TV	5374	7	850			Peel	Shear	152	153	126	131	133	130					P
TO										215	210	208								
5/13/20	8:05A	TV	5374	5	850			Peel	Shear	158	150	154	138	142	153					P
TO										210	209	214								
5/13/20	8:15A	KS	5375	7	850			Peel	Shear	129	125	142	114	153	109					P
TO										219	211	213								
5/13/20	8:00A	KP	566		500	500		Peel	Shear	119		127		130						P
TO										193	192	190								
5/14/20	8:35A	KS	5375	7	850			Peel	Shear	132	118	132	115	122	108					P
TO										202	193	193								
5/14/20	8:40A	KS	5375	5	850			Peel	Shear	144	131	128	120	136	118					P
TO										204	195	199								
5/14/20	8:30A	TV	5374	7	850			Peel	Shear	128	146	111	129	139	117					P
TO										197	189	193								
5/14/20	8:35A	TV	5374	5	850			Peel	Shear	125	144	120	128	117	137					P
TO										202	195	193								
5/14/20	8:50A	KP	566		500	500		Peel	Shear	94		82		85						P
TO										173	181	172								

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Global Container Solutions, LLC

Preweld Test Report

Page 8 of

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath Ssavath

Liner Types S = Smooth T = Textured SG = Super Grip

Primary Layer

Other

Pond	X	Peel Test Extrusion Minimum	<u>78</u>	PPI
Cell	 	Peel Test Fusion Minimum	<u>91</u>	PPI
Cap	 	Shear Test Minimum	<u>120</u>	PPI

Weld Date	Time	Operator	Mach	Mach	Mach	Preheat	Ambient		Coupon 1	Coupon 2	Coupon 3	Coupon 4	Coupon 5	Test
Liner Type	am pm	Name/ ID	No.	Speed	Temp	Temp	Temp		A B	A B	A B	A B	A B	Results
5/14/20	1'00P	TV	5374	7	850			Peel	126 128	105 126	118 120			P
TO								Shear	158	155	154			
5/14/20	1'05P	TV	5374	5	850			Peel	119 124	114 115	121 118			P
TO								Shear	160	153	154			
5/14/20	1'00P	KS	5375	7	850			Peel	120 115	113 119	113 107			P
TO								Shear	173	170	167			
5/14/20	1'05P	KS	5375	5	850			Peel	119 146	104 106	110 128			P
TO								Shear	162	161	158			
5/14/20	1'10P	KP	566		500	500		Peel	112	94	99			P
TO								Shear	159	157	151			
5/15/20	7'45A	KS	5375	9	850			Peel	144 139	127 139	151 129			P
TO								Shear	190	186	191			
5/15/20	7'50A	KP	5373	9	850			Peel	157 163	132 151	135 132			P
TO								Shear	190	189	189			
5/15/20	7'45A	TV	5374	9	850			Peel	127 133	115 125	125 140			P
TO								Shear	191	192	193			
5/15/20	1'15P	KS	5375	9	850			Peel	121 123	118 110	117 116			P
TO								Shear	145	149	149			
5/15/20	1'20P	KS	5375	5	850			Peel	125 124	128 122	123 117			P
TO								Shear	150	149	157			
5/15/20	1'20P	KP	5373	9	850			Peel	121 143	114 112	110 115			P
TO								Shear	153	144	143			
5/15/20	1'20P	TV	7374	9	850			Peel	121 128	113 116	111 111			P
TO								Shear	136	129	127			
5/16/20	7'25A	KS	5375	5	850			Peel	133 114	118 115	118 139			P
TO								Shear	181	185	189			
5/16/20	7'30A	TV	5374	5	850			Peel	144 158	125 137	138 143			P
TO								Shear	183	177	181			
5/16/20	8'00A	KP	5375		500	500		Peel	143	141	129			P
TO								Shear	216	210	210			
5/16/20	9'40A	TV	5374	7	850			Peel	141 140	126 129	133 132			P
TO								Shear	187	175	181			
5/16/20	9'40A	KS	5375	5	850			Peel	144 117	145 124	145 121			P
TO								Shear	183	177	181			

Global Container Solutions, LLC

Preweld Test Report

Page **9** of

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath Ssavath

Liner Types S = Smooth T = Textured SG = Super Grip

Primary Layer

Other

Pond	X
Cell	
Cap	

Peel Test Extrusion Minimum 78 **PPI**

Peel Test Fusion Minimum 91 **PPI**

Shear Test Minimum 120 **PPI**

Weld Date	Time	Operator	Mach	Mach	Mach	Preheat	Ambient		Coupon 1	Coupon 2	Coupon 3	Coupon 4	Coupon 5	Test
Liner Type	am pm	Name/ ID	No.	Speed	Temp	Temp	Temp		A B	A B	A B	A B	A B	Results
5/18/20	8:30A	KP	566		500	500		Peel	130	94	111			P
TO								Shear	189	182	178			
5/18/20	8:45A	TV	5374	9	850			Peel	144 145	145 131	122 142			P
TO								Shear	185	178	176			
5/18/20	9:00A	KS	5375	7	850			Peel	120 147	116 139	120 137			P
TO								Shear	189	183	181			
5/18/20	1:00P	TV	5375	7	850			Peel	121 132	122 124	121 131			P
TO								Shear	151	156	159			
5/18/20	1:05P	KS	5375	7	850			Peel	141 128	133 120	118 125			P
TO								Shear	165	160	156			
5/18/20	1:10P	KP	566		500	500		Peel	135	131	143			P
TO								Shear	175	174	162			
5/18/20	4:00P	KS	565		500	500		Peel	120	123	129			P
TO								Shear	189	181	182			
5/19/20	9:30A	KS	5375	7	850			Peel	135 131	122 122	118 122			P
TO								Shear	170	165	162			
5/19/20	9:35A	KS	5375	5	850			Peel	159 143	120 121	120 114			P
TO								Shear	167	166	164			
5/19/20	9:35A	TV	5374	9	850			Peel	109 119	110 106	106 110			P
TO								Shear	162	159	165			
5/19/20	2:30P	DO	566		500	500		Peel	122	115	116			P
TO								Shear	140	139	141			
5/19/20	1:00P	KS	565		500	500		Peel	123	134	134			P
TO								Shear	153	138	144			
5/19/20	2:30P	TV	567		500	500		Peel	119	115	116			P
TO								Shear	140	142	141			
	.							Peel						P
TO								Shear						
	.							Peel						P
TO								Shear						
	.							Peel						P
TO								Shear						
	.							Peel						P
TO								Shear						
	.							Peel						P
TO								Shear						

Panel Placement Forms

Daily Panel Placement

Deployment Date 04/24/20Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # <u>1</u>	Roll # <u>2135</u>	Panel # <u>2</u>	Roll # <u>2135</u>	Panel # <u>3</u>	Roll # <u>2133</u>
Initial SF <u>235</u>		Initial SF <u>232</u>		Initial SF <u>219</u>	
Lineal Feet Trench <u> </u>		Lineal Feet Trench <u> </u>		Lineal Feet Trench <u> </u>	
Final SF <u>5522</u>		Final SF <u>5452</u>		Final SF <u>5146</u>	
Panel # <u>4</u>	Roll # <u>2133</u>	Panel # <u>5</u>	Roll # <u>2133</u>	Panel # <u>6</u>	Roll # <u>2086</u>
Initial SF <u>29</u>		Initial SF <u>168</u>		Initial SF <u>173</u>	
Lineal Feet Trench <u> </u>		Lineal Feet Trench <u> </u>		Lineal Feet Trench <u> </u>	
Final SF <u>681</u>		Final SF <u>3948</u>		Final SF <u>4065</u>	
Panel # <u>7</u>	Roll # <u>2086</u>	Panel # <u>8</u>	Roll # <u>2086</u>	Total Initial SF This Page <u>1,321</u> SF	
				Total Final SF This Page <u>31,041</u> SF	
Initial SF <u>146</u>		Initial SF <u>119</u>		Anchor Trench	
Lineal Feet Trench <u> </u>		Lineal Feet Trench <u> </u>		Total Linear Feet In Trench <u> </u> LF	
Final SF <u>3431</u>		Final SF <u>2796</u>		X	
				Depth and Width Allowed in Trench <u> </u> LF	
				= Total SF in Trench <u> </u> SF	
				Total Pay Area This Page <u> </u> SF	
				Total Previous Pages <u> </u> SF	
				Total Pay Area to Date <u> </u> SF	

Deployment Date 04/24/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # <u>9</u>	Roll # <u>2131</u>	Panel # <u>10</u>	Roll # <u>2131</u>	Panel # <u>11</u>	Roll # <u>2131</u>
Initial SF <u>93</u> Lineal Feet Trench <u> </u>		Initial SF <u>68</u> Lineal Feet Trench <u> </u>		Initial SF <u>44</u> Lineal Feet Trench <u> </u>	
Final SF <u>2185</u>		Final SF <u>1598</u>		Final SF <u>1034</u>	
Panel # <u>12</u>	Roll # <u>2131</u>	Panel # <u>13</u>	Roll # <u>2131</u>	Panel # <u>14</u>	Roll # <u>2007</u>
Initial SF <u>135</u> Lineal Feet Trench <u> </u>		Initial SF <u>35</u> Lineal Feet Trench <u> </u>		Initial SF <u>65</u> Lineal Feet Trench <u> </u>	
Final SF <u>3172</u>		Final SF <u>822</u>		Final SF <u>1527</u>	
Panel # <u> </u>	Roll # <u> </u>	Panel # <u> </u>	Roll # <u> </u>	Total Initial SF This Page <u>235</u> SF	
				Total Final SF This Page 10,388 SF	
Initial SF <u> </u> Lineal Feet Trench <u> </u>		Initial SF <u> </u> Lineal Feet Trench <u> </u>		Anchor Trench	
Final SF <u> </u>		Final SF <u> </u>		Total Linear Feet In Trench <u> </u> LF	
				X	
				Depth and Width Allowed in Trench <u> </u> LF	
				= Total SF in Trench <u> </u> SF	
				Total Pay Area This Page <u> </u> SF	
				Total Previous Pages <u> </u> SF	
				Total Pay Area to Date <u> </u> SF	

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
23.5 23.5		23.5 23.5		23.5 23.5	
Initial SF		Initial SF		Initial SF	
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
15	2007	16	2007	17	2007
23.5 9723.568		23.5 6823.543		23.5 4323.515	
Initial SF		Initial SF		Initial SF	
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Total Initial SF This Page 337 SF	
18	2007	19	2007	Total Final SF This Page 7,815 SF	
12 9129		23.5 17523.5150		Anchor Trench Total Linear Feet In Trench X Depth and Width Allowed in Trench = Total SF in Trench LF LF SF	
Initial SF		Initial SF		Total Pay Area This Page	
Final SF		Final SF		Total Previous Pages	
				Total Pay Area to Date	
				Rev 5-26-09	

Deployment Date 04/25/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # <u>20</u> Roll # <u>525</u> Initial SF <u>186</u> Lineal Feet Trench <u> </u> Final SF <u>4371</u> <u> </u>	Panel # <u>21</u> Roll # <u>525</u> Initial SF <u>199</u> Lineal Feet Trench <u> </u> Final SF <u>4676</u> <u> </u>	Panel # <u>22</u> Roll # <u>525</u> Initial SF <u>92</u> Lineal Feet Trench <u> </u> Final SF <u>2162</u> <u> </u>
Panel # <u>23</u> Roll # <u>554</u> Initial SF <u>108</u> Lineal Feet Trench <u> </u> Final SF <u>2538</u> <u> </u>	Panel # <u>24</u> Roll # <u>554</u> Initial SF <u>202</u> Lineal Feet Trench <u> </u> Final SF <u>4747</u> <u> </u>	Panel # <u>25</u> Roll # <u>534</u> Initial SF <u>165</u> Lineal Feet Trench <u> </u> Final SF <u>3877</u> <u> </u>
Panel # <u>26</u> Roll # <u>2007</u> Initial SF <u>40</u> Lineal Feet Trench <u> </u> Final SF <u>940</u> <u> </u>	Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Total Initial SF This Page <u>992</u> SF Total Final SF This Page <u>23,311</u> SF Anchor Trench Total Linear Feet In Trench <u> </u> LF X Depth and Width Allowed in Trench <u> </u> LF = Total SF in Trench <u> </u> SF
		Total Pay Area This Page <u> </u> SF Total Previous Pages <u> </u> SF Total Pay Area to Date <u> </u> SF

Deployment Date 04/27/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 27	Roll # 2127	Panel # 28	Roll # 2127	Panel # 29	Roll # 2127
Initial SF 205		Initial SF 206		Initial SF 94	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 4612		Final SF 4841		Final SF 2209	
Panel # 30	Roll # 537	Panel # 31	Roll # 537	Panel # 32	Roll # 537
Initial SF 114		Initial SF 205		Initial SF 161	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 2679		Final SF 4817		Final SF 3787	
Panel # 33	Roll # 522	Panel # 34	Roll # 522	Total Initial SF This Page 1252 SF Total Final SF This Page 29,219 SF Anchor Trench Total Linear Feet In Trench <u> </u> LF X Depth and Width Allowed in Trench <u> </u> LF = Total SF in Trench <u> </u> SF	
Initial SF 41		Initial SF 226			
Lineal Feet Trench		Lineal Feet Trench			
Final SF 963		Final SF 5311		Total Pay Area This Page <u> </u> SF Total Previous Pages <u> </u> SF Total Pay Area to Date <u> </u> SF	

Daily Panel Placement

Material: 60 Mil Pond X Cell Cap Other:

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Deployment Date 04/29/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 40	Roll # 1799	Panel # 41	Roll # 1799	Panel # 42	Roll # 1799
Initial SF 225		Initial SF 224		Initial SF 61	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 5287		Final SF 5264		Final SF 1433	
Panel # 43	Roll # 1801	Panel # 44	Roll # 1801	Panel # 45	Roll # 1801
Initial SF 163		Initial SF 224		Initial SF 129	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 3830		Final SF 5264		Final SF 3031	
Panel # 46	Roll # 2031	Panel # 47	Roll # 2031	Total Initial SF This Page 1,341 SF	
				Total Final SF This Page 32,852 SF	
Initial SF 95		Initial SF 220		Anchor Trench	
Lineal Feet Trench		Lineal Feet Trench		Total Linear Feet In Trench LF	
Final SF 2232		Final SF 5170		X	
				Depth and Width Allowed in Trench LF	
				= Total SF in Trench SF	
				Total Pay Area This Page SF	
				Total Previous Pages SF	
				Total Pay Area to Date SF	

Deployment Date 4/29/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # <u>48</u>	Roll # <u>2031</u>	Panel # <u>49</u>	Roll # <u>2030</u>	Panel # <u>50</u>	Roll # <u>2030</u>
Initial SF <u>188</u> Lineal Feet Trench		Initial SF <u>33</u> Lineal Feet Trench		Initial SF <u>220</u> Lineal Feet Trench	
Final SF <u>4418</u>		Final SF <u>775</u>		Final SF <u>5170</u>	
Panel # <u>51</u>	Roll # <u>2030</u>	Panel # <u> </u>	Roll # <u> </u>	Panel # <u> </u>	Roll # <u> </u>
Initial SF <u>219</u> Lineal Feet Trench		Initial SF <u> </u> Lineal Feet Trench		Initial SF <u> </u> Lineal Feet Trench	
Final SF <u>5146</u>		Final SF <u> </u>		Final SF <u> </u>	
Panel # <u> </u>	Roll # <u> </u>	Panel # <u> </u>	Roll # <u> </u>	Total Initial SF This Page <u>660</u> SF	
				Total Final SF This Page <u>15,509</u> SF	
Initial SF <u> </u> Lineal Feet Trench		Initial SF <u> </u> Lineal Feet Trench		Anchor Trench	
Final SF <u> </u>		Final SF <u> </u>		Total Linear Feet In Trench <u> </u> LF	
				X	
				Depth and Width Allowed in Trench <u> </u> LF	
				= Total SF in Trench <u> </u> SF	
				Total Pay Area This Page <u> </u> SF	
				Total Previous Pages <u> </u> SF	
				Total Pay Area to Date <u> </u> SF	

Deployment Date 4/30/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # <u>52</u>	Roll # <u>2017</u>	Panel # <u>53</u>	Roll # <u>2017</u>	Panel # <u>54</u>	Roll # <u>2017</u>
Initial SF <u>218</u> Lineal Feet Trench <u> </u>		Initial SF <u>219</u> Lineal Feet Trench <u> </u>		Initial SF <u>65</u> Lineal Feet Trench <u> </u>	
Final SF <u>5123</u>		Final SF <u>5146</u>		Final SF <u>1527</u>	
Panel # <u>55</u>	Roll # <u>1802</u>	Panel # <u>56</u>	Roll # <u>1802</u>	Panel # <u>57</u>	Roll # <u>1802</u>
Initial SF <u>154</u> Lineal Feet Trench <u> </u>		Initial SF <u>219</u> Lineal Feet Trench <u> </u>		Initial SF <u>130</u> Lineal Feet Trench <u> </u>	
Final SF <u>3619</u>		Final SF <u>5146</u> <u>1797</u>		Final SF <u>3055</u>	
Panel # <u>58</u>	Roll # <u>1797</u>	Panel # <u>59</u>	Roll # <u> </u>	Total Initial SF This Page <u>1,324</u> SF	
				Total Final SF This Page <u>31,112</u> SF	
Initial SF <u>94</u> Lineal Feet Trench <u> </u>		Initial SF <u>225</u> Lineal Feet Trench <u> </u>		Anchor Trench Total Linear Feet In Trench <u> </u> LF X Depth and Width Allowed in Trench <u> </u> LF = Total SF in Trench <u> </u> SF	
Final SF <u>2209</u>		Final SF <u>5287</u>		Total Pay Area This Page <u> </u> SF	
				Total Previous Pages <u> </u> SF	
				Total Pay Area to Date <u> </u> SF	

Daily Panel Placement

Material: 60 Mil Pond X Cell Cap Other:

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Daily Panel Placement

Material: 60 Mil **Pond** X **Cell** **Cap** **Other:**

Rev 5-26-09

Deployment Date 5/1/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 73	Roll # 2006	Panel # 74	Roll # 2006	Panel # 75	Roll # 2022
Initial SF 83	Lineal Feet Trench	Initial SF 122	Lineal Feet Trench	Initial SF 152	Lineal Feet Trench
Final SF 1950		Final SF 2867		Final SF 3572	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Total Initial SF This Page 357 SF	
				Total Final SF This Page 8,389 SF	
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Anchor Trench	
Final SF		Final SF		Total Linear Feet In Trench LF	
				X	
				Depth and Width Allowed in Trench LF	
				= Total SF in Trench SF	
Total Pay Area This Page SF		Total Previous Pages SF		Total Pay Area to Date SF	
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench		
Final SF		Final SF			

Deployment Date 5/2/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 76 Roll # 2022 Initial SF 181 Lineal Feet Trench Final SF 4259 	Panel # 77 Roll # 2022 Initial SF 129 Lineal Feet Trench Final SF 3031 	Panel # 78 Roll # 527 Initial SF 75 Lineal Feet Trench Final SF 1762
Panel # 79 Roll # 527 Initial SF 217 Lineal Feet Trench Final SF 5099 	Panel # 80 Roll # 2018 Initial SF 221 Lineal Feet Trench Final SF 5193 	Panel # 81 Roll # 2018 Initial SF 224 Lineal Feet Trench Final SF 5264
Panel # Roll # Initial SF Lineal Feet Trench Final SF 	Panel # Roll # Initial SF Lineal Feet Trench Final SF 	Total Initial SF This Page 1,047 SF Total Final SF This Page 24,068 SF Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF
		Total Pay Area This Page SF Total Previous Pages SF Total Pay Area to Date SF

Deployment Date 5/4/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 82	Roll # 2128	Panel # 83	Roll # 2128	Panel # 84	Roll # 2128
Initial SF 225	Lineal Feet Trench	Initial SF 226	Lineal Feet Trench	Initial SF 48	Lineal Feet Trench
Final SF 5287		Final SF 5311		Final SF 1128	
Panel # 85	Roll # 2006	Panel # 86	Roll # 2006	Panel # 87	Roll # 2020
Initial SF 178	Lineal Feet Trench	Initial SF 158	Lineal Feet Trench	Initial SF 69	Lineal Feet Trench
Final SF 4183		Final SF 3713		Final SF 1621	
Panel # 88	Roll # 2020	Panel # 89	Roll # 2020	Total Initial SF This Page 1347 SF	
				Total Final SF This Page 31,653 SF	
Initial SF 227	Lineal Feet Trench	Initial SF 216	Lineal Feet Trench	Anchor Trench	
Final SF 5334		Final SF 5076		Total Linear Feet In Trench <u> </u> LF	
				Depth and Width Allowed in Trench <u> </u> LF	
				= Total SF in Trench <u> </u> SF	
				Total Pay Area This Page <u> </u> SF	
				Total Previous Pages <u> </u> SF	
				Total Pay Area to Date <u> </u> SF	

Deployment Date 5/4/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 90	Roll # 2134	Panel # 91	Roll # 2136	Panel # 92	Roll # 2136
Initial SF 10		Initial SF 234		Initial SF 234	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 235		Final SF 5499		Final SF 5499	
Panel # 93	Roll # 2130	Panel # 94	Roll # 2130	Panel # 95	Roll # 2130
Initial SF 234		Initial SF 233		Initial SF 30	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 5499		Final SF 5475		Final SF 705	
Panel # 96	Roll # 2024	Panel # 97	Roll # 2024	Total Initial SF This Page 1,049 SF	
				Total Final SF This Page 33,111 SF	
Initial SF 202		Initial SF 232		Anchor Trench	
Lineal Feet Trench		Lineal Feet Trench		Total Linear Feet In Trench LF	
Final SF 4747		Final SF 5452		X	
				Depth and Width Allowed in Trench LF	
				= Total SF in Trench SF	
				Total Pay Area This Page SF	
				Total Previous Pages SF	
				Total Pay Area to Date SF	

Deployment Date 5/5/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 98	Roll # 1156	Panel # 99	Roll # 1156	Panel # 100	Roll # 1155
Initial SF 216		Initial SF 216		Initial SF 540	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 5076		Final SF 5076		Final SF 12690	
Panel # 101	Roll # 1138	Panel # 102	Roll # 1138	Panel # 103	Roll # 1140
Initial SF 540		Initial SF 35		Initial SF 540	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 9450		Final SF 350		Final SF 12690	
Panel # 104	Roll # 1157	Panel # 105	Roll # 1157	Total Initial SF This Page 2299 SF Total Final SF This Page 50,314 SF Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF	
Initial SF 106		Initial SF 106			
Lineal Feet Trench		Lineal Feet Trench			
Final SF 2491		Final SF 2491		Total Pay Area This Page SF Total Previous Pages SF Total Pay Area to Date SF	

Deployment Date 5/5/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # <u>106</u> Roll # <u>1157</u> 23.5 23.5 106 106 23.5 Initial SF <u>106</u> Lineal Feet Trench <u> </u> Final SF <u>2491</u> <u> </u>	Panel # <u> </u> Roll # <u> </u> 23.5 23.5 23.5 Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> 23.5 23.5 23.5 Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>
Panel # <u> </u> Roll # <u> </u> 23.5 23.5 23.5 Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> 23.5 23.5 23.5 Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> 23.5 23.5 23.5 Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>
Panel # <u> </u> Roll # <u> </u> 23.5 23.5 23.5 Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> 23.5 23.5 23.5 Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> 23.5 23.5 23.5 Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>
		Total Initial SF This Page <u>106</u> SF Total Final SF This Page <u>2,491</u> SF Anchor Trench Total Linear Feet In Trench <u> </u> LF X Depth and Width Allowed in Trench <u> </u> LF = Total SF in Trench <u> </u> SF
		Total Pay Area This Page <u> </u> SF Total Previous Pages <u> </u> SF Total Pay Area to Date <u> </u> SF

Daily Panel Placement

Deployment Date 5/6/20

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 107	Roll # 2016	Panel # 108	Roll # 2016	Panel # 109	Roll # 2016
Initial SF 236	Lineal Feet Trench	Initial SF 235	Lineal Feet Trench	Initial SF 34	Lineal Feet Trench
Final SF 5546		Final SF 5522		Final SF 799	
Panel # 110	Roll # 2027	Panel # 111	Roll # 2027	Panel # 112	Roll # 2027
Initial SF 201	Lineal Feet Trench	Initial SF 234	Lineal Feet Trench	Initial SF 64	Lineal Feet Trench
Final SF 4723		Final SF 5499		Final SF 1504	
Panel # 113	Roll # 2029	Panel # 114	Roll # 2029	Total Initial SF This Page 1408 SF Total Final SF This Page 33,087 SF Anchor Trench Total Linear Feet In Trench _____ LF X _____ Depth and Width Allowed in Trench _____ LF = Total SF in Trench _____ SF	
Initial SF 170	Lineal Feet Trench	Initial SF 234	Lineal Feet Trench		
Final SF 3995		Final SF 5499			
Total Pay Area This Page _____ SF Total Previous Pages _____ SF Total Pay Area to Date _____ SF					

Deployment Date 5/6/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 115	Roll # 2029	Panel # 116	Roll # 2032	Panel #	Roll #
Initial SF 77	Lineal Feet Trench	Initial SF 143	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF 1809		Final SF 3360		Final SF	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Total Initial SF This Page 220 SF	
				Total Final SF This Page 5,169 SF	
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Anchor Trench	
Final SF		Final SF		Total Linear Feet In Trench LF	
				X	
				Depth and Width Allowed in Trench LF	
				= Total SF in Trench SF	
Panel #	Roll #	Panel #	Roll #	Total Pay Area This Page SF	
				Total Previous Pages SF	
Initial SF	Lineal Feet Trench	Initial SF	Lineal Feet Trench	Total Pay Area to Date SF	
Final SF		Final SF			

Daily Panel Placement

Material: 60 Mil **Pond** X **Cell** **Cap** **Other:**

Rev 5-26-09

Deployment Date 5/7/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 125	Roll # 2024	Panel # 126	Roll # 2024	Panel # 127	Roll # 2018
Initial SF 25		Initial SF 27		Initial SF 40	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 475		Final SF 634		Final SF 940	
Panel # 128	Roll # 2015	Panel # 129	Roll # 2015	Panel # 130	Roll # 2015
Initial SF 59		Initial SF 80		Initial SF 106	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 1386		Final SF 1880		Final SF 2491	
Panel # 131	Roll # 2015	Panel # 132	Roll # 2015	Total Initial SF This Page 482 SF	
				Total Final SF This Page 11,213 SF	
Initial SF 125		Initial SF 20		Anchor Trench	
Lineal Feet Trench		Lineal Feet Trench		Total Linear Feet In Trench LF	
Final SF 2937		Final SF 470		X	
				Depth and Width Allowed in Trench LF	
				= Total SF in Trench SF	
				Total Pay Area This Page SF	
				Total Previous Pages SF	
				Total Pay Area to Date SF	

Deployment Date 5/7/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
133	2021				
23.5 132 132		23.5 23.5 23.5		23.5 23.5 23.5	
Initial SF	132	Lineal Feet Trench		Initial SF	
Final SF	3102			Final SF	
23.5 23.5 23.5		23.5 23.5 23.5		23.5 23.5 23.5	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Final SF	
23.5 23.5 23.5		23.5 23.5 23.5		23.5 23.5 23.5	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Final SF	
23.5 23.5 23.5		23.5 23.5 23.5		23.5 23.5 23.5	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Final SF	
				Total Initial SF This Page 132 SF	
				Total Final SF This Page 3,102 SF	
				Anchor Trench Total Linear Feet In Trench <u> </u> LF X Depth and Width Allowed in Trench <u> </u> LF = Total SF in Trench <u> </u> SF	
				Total Pay Area This Page <u> </u> SF	
				Total Previous Pages <u> </u> SF	
				Total Pay Area to Date <u> </u> SF	

Deployment Date 5/8/2020

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 134	Roll # 2021	Panel # 135	Roll # 2021	Panel # 136	Roll # 2023
Initial SF 190		Initial SF 157		Initial SF 52	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 4465		Final SF 3689		Final SF 1222	
Panel # 137	Roll # 2023	Panel # 138	Roll # 2023	Panel # 139	Roll # 2023
Initial SF 211		Initial SF 212		Initial SF 29	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 4958		Final SF 4982		Final SF 681	
Panel # 140	Roll # 2138	Panel # 141	Roll # 2138	Total Initial SF This Page 1,246 SF	
				Total Final SF This Page 29,279 SF	
Initial SF 183		Initial SF 212		Anchor Trench	
Lineal Feet Trench		Lineal Feet Trench		Total Linear Feet In Trench <u> </u> LF	
Final SF 4300		Final SF 4982		X	
				Depth and Width Allowed in Trench <u> </u> LF	
				= Total SF in Trench <u> </u> SF	
				Total Pay Area This Page <u> </u> SF	
				Total Previous Pages <u> </u> SF	
				Total Pay Area to Date <u> </u> SF	

Deployment Date 5/8/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
142	2035				
23.5 212		23.5 212		23.5 212	
Initial SF	212	Lineal Feet Trench		Initial SF	
Final SF	4982			Final SF	
23.5 212		23.5 212		23.5 212	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Final SF	
23.5 212		23.5 212		23.5 212	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Final SF	
23.5 212		23.5 212		23.5 212	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Final SF	
				Total Initial SF This Page	
				212 SF	
				Total Final SF This Page	
				4,982 SF	
				Anchor Trench	
				Total Linear Feet In Trench	
				X	
				Depth and Width Allowed in Trench	
				=	
				Total SF in Trench	
				SF	
				Total Pay Area This Page	
				SF	
				Total Previous Pages	
				SF	
				Total Pay Area to Date	
				SF	

Daily Panel Placement

Material: 60 Mil **Pond** X **Cell** **Cap** **Other:**

Rev 5-26-09

Daily Panel Placement

Deployment Date 5/11/20Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 147 Roll # 2045 Initial SF 210 Lineal Feet Trench Final SF 4935 	Panel # 148 Roll # 2045 Initial SF 212 Lineal Feet Trench Final SF 4982 	Panel # 149 Roll # 2045 Initial SF 68 Lineal Feet Trench Final SF 1598
Panel # 150 Roll # 2129 Initial SF 145 Lineal Feet Trench Final SF 3407 	Panel # 151 Roll # 2129 Initial SF 211 Lineal Feet Trench Final SF 4958 	Panel # 152 Roll # 2129 Initial SF 150 Lineal Feet Trench Final SF 3525
Panel # 153 Roll # 137 Initial SF 60 Lineal Feet Trench Final SF 1410 	Panel # 154 Roll # 137 Initial SF 210 Lineal Feet Trench Final SF 4935 	Total Initial SF This Page 1,265 SF Total Final SF This Page 29,750 SF Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF Total Pay Area This Page SF Total Previous Pages SF Total Pay Area to Date SF

Deployment Date 5/11/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 155	Roll # 137	Panel # 156	Roll # 137	Panel # 157	Roll # 2041
Initial SF 210		Initial SF 29		Initial SF 178	
Final SF 4935		Final SF 681		Final SF 4183	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Panel # 158	Roll # 2041	Panel # 159	Roll # 2041	Panel # 160	Roll # 2043
Initial SF 207		Initial SF 111		Initial SF 98	
Final SF 4864		Final SF 2608		Final SF 2303	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Panel # 161	Roll # 2043	Panel # 162	Roll # 2043	Total Initial SF This Page 1,251 SF Total Final SF This Page 29,396 SF Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF	
Initial SF 209		Initial SF 209			
Final SF 4911		Final SF 4911			
Lineal Feet Trench		Lineal Feet Trench		Total Pay Area This Page SF Total Previous Pages SF Total Pay Area to Date SF	

Deployment Date 5/11/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
163	2126	164	2126		
Initial SF 209		Initial SF 209		Initial SF	
Final SF 4911		Final SF 4911		Final SF	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Initial SF		Initial SF		Initial SF	
Final SF		Final SF		Final SF	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Initial SF		Initial SF		Initial SF	
Final SF		Final SF		Final SF	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Initial SF		Initial SF		Initial SF	
Final SF		Final SF		Final SF	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
				Total Initial SF This Page 418 SF	
				Total Final SF This Page 9,822 SF	
				Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF	
				Total Pay Area This Page SF	
				Total Previous Pages SF	
				Total Pay Area to Date SF	

Deployment Date 5/12/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 165	Roll # 2126	Panel # 166	Roll # 2010	Panel # 167	Roll # 2010
Initial SF 89 Lineal Feet Trench		Initial SF 121 Lineal Feet Trench		Initial SF 209 Lineal Feet Trench	
Final SF 2091		Final SF 2843		Final SF 4911	
Panel # 168	Roll # 2010	Panel # 169	Roll # 2132	Panel # 170	Roll # 2132
Initial SF 176 Lineal Feet Trench		Initial SF 32 Lineal Feet Trench		Initial SF 206 Lineal Feet Trench	
Final SF 4136		Final SF 752		Final SF 4841	
Panel # 171	Roll # 2132	Panel # 172	Roll # 2132	Total Initial SF This Page 1,094 SF	
				Total Final SF This Page 25,707 SF	
Initial SF 206 Lineal Feet Trench		Initial SF 55 Lineal Feet Trench		Anchor Trench	
Final SF 4841		Final SF 1292		Total Linear Feet In Trench LF	
X Depth and Width Allowed in Trench LF					
= Total SF in Trench SF					
Total Pay Area This Page SF					
Total Previous Pages SF					
Total Pay Area to Date SF					

Daily Panel Placement

Deployment Date 5/12/20

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 173	Roll # 2038	Panel # 174	Roll # 2038	Panel # 175	Roll # 2038
Initial SF 152	Lineal Feet Trench	Initial SF 206	Lineal Feet Trench	Initial SF 136	Lineal Feet Trench
Final SF 3572		Final SF 4841		Final SF 3196	
Panel # 176	Roll # 2044	Panel # 177	Roll # 536	Panel # 178	Roll # 2044
Initial SF 53	Lineal Feet Trench	Initial SF 35	Lineal Feet Trench	Initial SF 126	Lineal Feet Trench
Final SF 1245		Final SF 822		Final SF 2961	
Panel # 179	Roll # 2044	Panel # 180	Roll # 2044	Total Initial SF This Page 952 SF	
				Total Final SF This Page 22,730 SF	
Initial SF 133	Lineal Feet Trench	Initial SF 111	Lineal Feet Trench	Anchor Trench Total Linear Feet In Trench _____ LF X Depth and Width Allowed in Trench _____ LF = Total SF in Trench _____ SF	
Final SF 3125		Final SF 2608		Total Pay Area This Page _____ SF	
				Total Previous Pages _____ SF	
				Total Pay Area to Date _____ SF	

Daily Panel Placement

Deployment Date 5/12/20

Object Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 181	Roll # 1800	Panel # 182	Roll # 2044	Panel # 183	Roll # 1800
Initial SF 99 Lineal Feet Trench		Initial SF 33 Lineal Feet Trench		Initial SF 6 Lineal Feet Trench	
Final SF 2326		Final SF 775		Final SF 183	
Panel # 184	Roll # 1800	Panel # 185	Roll # 1800	Panel # 186	Roll # 1800
Initial SF 22 Lineal Feet Trench		Initial SF 54 Lineal Feet Trench		Initial SF 82 Lineal Feet Trench	
Final SF 517		Final SF 1269		Final SF 1927	
Panel # 187	Roll # 1800	Panel #	Roll #	Total Initial SF This Page 448 SF	
				Total Final SF This Page 10,452 SF	
Initial SF 152 Lineal Feet Trench		Initial SF		Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF	
Final SF 3572		Final SF		Total Pay Area This Page SF	
				Total Previous Pages SF	
				Total Pay Area to Date SF	

Deployment Date 5/13/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # <u>188</u> Roll # <u>1796</u> Initial SF <u>190</u> Lineal Feet Trench <u> </u> Final SF <u>4465</u> <u> </u>	Panel # <u>189</u> Roll # <u>1796</u> Initial SF <u>224</u> Lineal Feet Trench <u> </u> Final SF <u>5275</u> <u> </u>	Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>
Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>
Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Total Initial SF This Page <u>414</u> SF Total Final SF This Page <u>9,740</u> SF Anchor Trench Total Linear Feet In Trench <u> </u> LF X Depth and Width Allowed in Trench <u> </u> LF = Total SF in Trench <u> </u> SF
Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Panel # <u> </u> Roll # <u> </u> Initial SF <u> </u> Lineal Feet Trench <u> </u> Final SF <u> </u> <u> </u>	Total Pay Area This Page <u> </u> SF Total Previous Pages <u> </u> SF Total Pay Area to Date <u> </u> SF

Deployment Date 5/14/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 190	Roll # 2033	Panel # 191	Roll # 2033	Panel # 192	Roll # 1796
Initial SF 241		Initial SF 240		Initial SF 22	
Final SF 5663		Final SF 5640		Final SF 517	
Panel # 193	Roll # 1796	Panel # 194	Roll # 1798	Panel # 195	Roll # 1798
Initial SF 8		Initial SF 82		Initial SF 19	
Final SF 48		Final SF 1927		Final SF 380	
Panel # 196	Roll # 1798	Panel # 197	Roll # 1798	Total Initial SF This Page 972 SF	
				Total Final SF This Page 22,682 SF	
Initial SF 158		Initial SF 204		Anchor Trench	
Final SF 3713		Final SF 4794		Total Linear Feet In Trench LF	
				X	
				Depth and Width Allowed in Trench LF	
				= Total SF in Trench SF	
				Total Pay Area This Page SF	
				Total Previous Pages SF	
				Total Pay Area to Date SF	

Daily Panel Placement

Deployment Date 5/14/20Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 198 Roll # 1149 540 540 Initial SF 540 Lineal Feet Trench Final SF 12,690 	Panel # 199 Roll # 1144 540 540 Initial SF 540 Lineal Feet Trench Final SF 12,690 	Panel # Roll # Initial SF Lineal Feet Trench Final SF
Panel # Roll # Initial SF Lineal Feet Trench Final SF 	Panel # Roll # Initial SF Lineal Feet Trench Final SF 	Panel # 203 Roll # Initial SF Lineal Feet Trench Final SF
Panel # Roll # Initial SF Lineal Feet Trench Final SF 	Panel # Roll # Initial SF Lineal Feet Trench Final SF 	Total Initial SF This Page 1080 SF Total Final SF This Page 25,380 SF Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF
Panel # Roll # Initial SF Lineal Feet Trench Final SF 	Panel # Roll # Initial SF Lineal Feet Trench Final SF 	Total Pay Area This Page SF Total Previous Pages SF Total Pay Area to Date SF

Deployment Date 5/15/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel # 200	Roll # 1151	Panel # 201	Roll # 1141	Panel # 202	Roll # 1183
Initial SF 540 Lineal Feet Trench		Initial SF 540 Lineal Feet Trench		Initial SF 540 Lineal Feet Trench	
Final SF 12,690		Final SF 12,690		Final SF 12,690	
Panel # 203	Roll # 1154	Panel # 204	Roll # 1136	Panel # 205	Roll # 1152
Initial SF 540 Lineal Feet Trench		Initial SF 540 Lineal Feet Trench		Initial SF 540 Lineal Feet Trench	
Final SF 12,690		Final SF 12,690		Final SF 12,690	
Panel # 206	Roll # 1150	Panel # 207	Roll # 1153	Total Initial SF This Page 4,320 SF Total Final SF This Page 101,520 SF Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF	
Initial SF 540 Lineal Feet Trench		Initial SF 540 Lineal Feet Trench			
Final SF 12,690		Final SF 12,690			
Total Pay Area This Page SF		Total Previous Pages SF		Total Pay Area to Date SF	

Deployment Date 5/15/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
208	1137	209	1184	210	1184
Initial SF 540 Lineal Feet Trench		Initial SF 270 Lineal Feet Trench		Initial SF 270 Lineal Feet Trench	
Final SF 12,690		Final SF 2970		Final SF 2970	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench	
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Total Initial SF This Page 1,080 SF	
				Total Final SF This Page 18,630 SF	
Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench		Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF	
Final SF		Final SF		Total Pay Area This Page SF Total Previous Pages SF Total Pay Area to Date SF	

Daily Panel Placement

Deployment Date 5/16/20Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
211	1184	212	1157	213	1182
Initial SF <u>138</u> Lineal Feet Trench <u> </u>		Initial SF <u>142</u> Lineal Feet Trench <u> </u>		Initial SF <u>148</u> Lineal Feet Trench <u> </u>	
Final SF <u>3243</u>		Final SF <u>3337</u>		Final SF <u>3478</u>	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
Initial SF <u> </u> Lineal Feet Trench <u> </u>		Initial SF <u> </u> Lineal Feet Trench <u> </u>		Initial SF <u> </u> Lineal Feet Trench <u> </u>	
Final SF <u> </u>		Final SF <u> </u>		Final SF <u> </u>	
Panel #	Roll #	Panel #	Roll #	Total Initial SF This Page <u>428</u> SF	
				Total Final SF This Page <u>10,058</u> SF	
Initial SF <u> </u> Lineal Feet Trench <u> </u>		Initial SF <u> </u> Lineal Feet Trench <u> </u>		Anchor Trench	
Final SF <u> </u>		Final SF <u> </u>		Total Linear Feet In Trench <u> </u> LF	
				X	
				Depth and Width Allowed in Trench <u> </u> LF	
				= Total SF in Trench <u> </u> SF	
Panel #	Roll #	Panel #	Roll #	Total Pay Area This Page <u> </u> SF	
				Total Previous Pages <u> </u> SF	
Initial SF <u> </u> Lineal Feet Trench <u> </u>		Initial SF <u> </u> Lineal Feet Trench <u> </u>		Total Pay Area to Date <u> </u> SF	
Final SF <u> </u>		Final SF <u> </u>			

Daily Panel Placement

Deployment Date 5/18/20Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel # 214	Roll # 1182	Panel # 215	Roll # 1182	Panel # 216	Roll # 1182
Initial SF 156		Initial SF 157		Initial SF 70	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 3666		Final SF 3689		Final SF 1645	
Panel # 217	Roll # 1184	Panel # 218	Roll # 1156	Panel # 219	Roll # 1157
Initial SF 86		Initial SF 101		Initial SF 54	
Lineal Feet Trench		Lineal Feet Trench		Lineal Feet Trench	
Final SF 2021		Final SF 2373		Final SF 1269	
Panel # 220	Roll # 1139	Panel # 221	Roll # 1139	Total Initial SF This Page 1,081 SF	
				Total Final SF This Page 25,402 SF	
Initial SF 157		Initial SF 3525		Anchor Trench	
Lineal Feet Trench		Lineal Feet Trench		Total Linear Feet In Trench	
Final SF 3689		Final SF		X	
				Depth and Width Allowed in Trench	
				= Total SF in Trench	
				SF	
				Total Pay Area This Page	
				SF	
				Total Previous Pages	
				SF	
				Total Pay Area to Date	
				SF	

Deployment Date 5/18/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt: Material: 60 Mil Pond X Cell Cap Other:

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
222	1139	223	1139		
23.5 150		12 46		23.5 23.5	
Initial SF	150	Lineal Feet Trench		Initial SF	46
Final SF	3525			Initial SF	
		Lineal Feet Trench		Final SF	
23.5 23.5		23.5 23.5		23.5 23.5	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Initial SF	
		Lineal Feet Trench		Final SF	
23.5 23.5		23.5 23.5		23.5 23.5	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Initial SF	
		Lineal Feet Trench		Final SF	
23.5 23.5		23.5 23.5		23.5 23.5	
Initial SF		Lineal Feet Trench		Initial SF	
Final SF				Initial SF	
		Lineal Feet Trench		Final SF	
				Total Initial SF This Page	
				196 SF	
				Total Final SF This Page	
				4,077 SF	
				Anchor Trench	
				Total Linear Feet In Trench	
				X	
				Depth and Width Allowed in Trench	
				= Total SF in Trench	
				SF	
				Total Pay Area This Page	
				SF	
				Total Previous Pages	
				SF	
				Total Pay Area to Date	
				SF	

Deployment Date 5/19/20

Daily Panel Placement

Project Name: Xcel - Sherco Bottom Ash Pond 2 Job # 19-07-1083 Supt:

Material: 60 Mil Pond X Cell Cap Other:

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
224	531	225	531	226	2036
Initial SF 136 Lineal Feet Trench		Initial SF 136 Lineal Feet Trench		Initial SF 136 Lineal Feet Trench	
Final SF 3196		Final SF 3196		Final SF 3196	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench	
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench	
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench	
Final SF		Final SF		Final SF	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
				Total Initial SF This Page 678 SF	
				Total Final SF This Page 15,933 SF	
				Anchor Trench Total Linear Feet In Trench LF X Depth and Width Allowed in Trench LF = Total SF in Trench SF	
				Total Pay Area This Page SF	
				Total Previous Pages SF	
				Total Pay Area to Date SF	
Panel #	Roll #	Panel #	Roll #	Panel #	Roll #
Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench		Initial SF Lineal Feet Trench	
Final SF		Final SF		Final SF	

Panel Seaming Forms

Global Container Solutions, LLC
Seam Control Form

Page 1

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/24/20	P1	P2	235	10' 33A	KP	5375	7	850		4/24/20	AT	1' 35P 30	1' 40P 30		P
Seam Notes EOS															
4/24/20	P2	P3	230	10' 45A	KS	5374	7	850		4/24/20	AT	1' 40P 30	1' 45P 30		P
Seam Notes EOS															
4/24/20	P3	P4	29	1' 31P	KP	5375	7	850		4/24/20	AT	2' 10P 30	2' 15P 30		P
Seam Notes EOS															
4/24/20	P3	P5	180	1' 38P	KP	5375	7	850		4/24/20	AT	2' 10P 30	2' 15P 30		P
Seam Notes EOS															
4/24/20	P4	P5	23	1' 25P	KS	5374	5	850		4/24/20	AT	1' 50P 30	1' 55P 30		P
Seam Notes EOS															
4/24/20	P4	P6	29	1' 45P	KS	5374	7	850		4/24/20	AT	2' 16P 30	2' 21P 30		P
Seam Notes EOS															
4/24/20	P5	P6	157	1' 50P	KS	5374	7	850		4/24/20	AT	2' 16P 30	2' 21P 30		P
Seam Notes EOS															
4/24/20	P6	P7	160	2' 08P	KP	5375	7	850		4/24/20	AT	2' 35P 30	2' 40P 30		P
Seam Notes EOS															
4/24/20	P7	P8	133	2' 30P	KS	5374	7	850		4/24/20	AT	2' 50P 30	2' 55P 30		P
Seam Notes EOS															
4/24/20	P8	P9	106	3' 18P	KP	5375	7	850		4/24/20	AT	3' 35P 30	3' 40P 30		P

Global Containers Solutions, LLC

Seam Control Form

Page 2

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By: Nalilath sysavath

Primary Layer

Cell

Pond

Cap

Air Pressure Test 30 PSI

Air Pressure Hold Time 5 Minutes

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/24/20	P9	P10	81	3' 25P	KS	5374	7	850	4/24/20	AT	3' 42P 30	3' 47P 28		P
Seam Notes EOS														
4/24/20	P10	P11	55	3' 40P	KP	5375	7	850	4/25/20	AT	5' 15P 30	5' 20P 30		P
Seam Notes EOS														
4/24/20	P12	P13	85	4' 20P	KS	5374	7	850	4/25/20	AT	8' 48A 30	8' 53A 30		P
Seam Notes EOS														
4/24/20	P12	P14	35	4' 40P	KS	5374	7	850	4/25/20	AT	8' 38A 30	8' 43A 30		P
Seam Notes EOS														
4/24/20	P13	P14	23	4' 30P	KP	5375	5	850	4/25/20	AT	8' 30A 30	8' 35A 30		P
Seam Notes EOS														
4/25/20	P14	P15	37	8' 34A	KP	5375	7	850	4/25/20	AT	8' 58A 30	9' 03A 30		P
Seam Notes EOS														
4/25/20	P13	P15	60	8' 21A	KP	5375	7	850	4/25/20	AT	8' 51A 30	8' 56A 30		P
Seam Notes EOS														
4/25/20	P15	16	68	8' 20A	KS	5374	7	850	4/25/20	AT	9' 06A 30	9' 11A 30		P
Seam Notes EOS														
4/25/20	P16	P17	43	8' 30A	KS	5374	7	850	4/25/20	AT	9' 18A 30	9' 23A 30		P
Seam Notes EOS														
4/25/20	P17	P18	15	8' 40A	KS	5374	7	850	4/25/20	AT	9' 22A 30	9' 27A 30		P

Global Containers Solutions, LLC
Seam Control Form

Page 3

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By: Nalilath sysavath

Primary Layer

Cell

Pond X

Other

Cap

Air Pressure Test 30 PSI

Air Pressure Hold Time 5 Minutes

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/25/20	P12	P19	150	9' 30A	KP	5375	7	850	4/25/20	AT	9' 54A 30	9' 59A 30		P
Seam Notes EOS														
4/25/20	P19	P20	175	9' 50A	KS	5374	7	850	4/25/20	AT	10' 14A 30	10' 19A 30		P
Seam Notes EOS														
4/25/20	P3	P20	18	10' 35A	KS	5374	5	850	4/25/20	AT	10' 43A 30	10' 48A 30		P
Seam Notes EOS														
4/25/20	P5	P20	12	10' 39A	KS	5374	5	850	4/25/20	AT	11' 00A 30	11' 05A 30		P
Seam Notes EOS														
4/25/20	P5	P19	23	10' 42A	KS	5374	5	850	4/25/20	AT	11' 00A 30	11' 05A 30		P
Seam Notes EOS														
4/25/20	P6	P19	6	10' 45A	KS	5374	5	850	4/25/20	AT	11' 01A 30	11' 06A 30		P
Seam Notes EOS														
4/25/20	P6	P12	20	10' 46A	KS	5374	5	850	4/25/20	AT	11' 15A 30	11' 20A 30		P
Seam Notes EOS														
4/25/20	P7	P12	10	10' 50A	KS	5374	5	850	4/25/20	AT	11' 15A 30	11' 20A 30		P
Seam Notes EOS														
4/25/20	P7	P13	24	10' 52A	KS	5374	5	850	4/25/20	AT	11' 15A 30	11' 20A 30		P
Seam Notes EOS														
4/25/20	P8	P13	12	10' 56A	KS	5374	5	850	4/25/20	AT	11' 15A 30	11' 20A 30		P

Global Container Solutions, LLC
Seam Control Form

Page 4

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath sysavath

Primary Layer

Cell

Pond

Cap

Air Pressure Test 30 PSI

Air Pressure Hold Time 5 Minutes

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/25/20	P8	P15	23	10' 59A	KS	5374	5	850	4/25/20	AT	11' 15A 30	11' 20A 30		P
Seam Notes EOS														
4/25/20	P9	P15	14	11' 03A	KS	5374	5	850	4/25/20	AT	11' 15A 30	11' 20A 30		P
Seam Notes EOS														
4/25/20	P9	P16	21	11' 06A	KS	5374	5	850	4/25/20	AT	11' 15A 30	11' 20A 30		P
Seam Notes EOS														
4/25/20	P10	P16	13	11' 10A	KS	5374	5	850	4/25/20	AT	11' 25A 30	11' 30A 30		P
Seam Notes EOS														
4/25/20	P10	P17	23	11' 14A	KS	5374	5	850	4/25/20	AT	11' 25A 30	11' 30A 30		P
Seam Notes EOS														
4/25/20	P11	P17	12	11' 17A	KS	5374	5	850	4/25/20	AT	11' 25A 30	11' 30A 30		P
Seam Notes EOS														
4/25/20	P11	P18	20	11' 21A	KS	5374	5	850	4/25/20	AT	11' 25A 30	11' 30A 30		P
Seam Notes EOS														
4/25/20	P20	P21	198	1' 15P	KP	5375	7	850	4/25/20	AT	1' 46P 30	1' 51P 30		P
Seam Notes EOS														
4/25/20	P21	P22	92	1' 40P	KS	5374	7	850	4/25/20	AT	2' 13P 30	2' 18P 30		P
Seam Notes EOS														
4/25/20	P21	P23	108	1' 50P	KS	5374	7	850	4/25/20	AT	2' 13P 30	2' 18P 30		P

Global Container Solutions, LLC
Seam Control Form

Page 5

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/25/20	P22	P23	23	1' 30P	KS	5374	5	850		4/25/20	AT	1' 40P 30	1' 45P 30		P
Seam Notes EOS															
4/25/20	P22	P24	92	2' 23P	KP	5375	7	850		4/25/20	AT	3' 01P 30	3' 06P 30		P
Seam Notes EOS															
4/25/20	P23	P24	108	2' 37P	KP	5375	7	850		4/25/20	AT	3' 01P 30	3' 06P 30		P
Seam Notes EOS															
4/25/20	P24	P26	40	2' 55P	KS	5374	7	850		4/25/20	AT	3' 20P 30	3' 25P 30		P
Seam Notes EOS															
4/25/20	P24	P25	165	3' 00P	KS	5374	7	850		4/25/20	AT	3' 20P 30	3' 25P 30		P
Seam Notes EOS															
4/25/20	P25	P26	23	2' 50P	KS	5374	5	850		4/25/20	AT	2' 54P 30	2' 59P 30		P
Seam Notes EOS															
4/27/20	P26	P27	40	9' 35A	KS	5374	7	850		4/27/20	AT	10' 00A 30	10' 05A 30		P
Seam Notes EOS															
4/27/20	P25	P27	165	9' 40A	KS	5374	7	850		4/27/20	AT	10' 00A 30	10' 05A 30		P
Seam Notes EOS															
4/27/20	P27	P28	205	9' 48A	KP	5375	7	850		4/27/20	AT	10' 34A 30	10' 39A 30		P
Seam Notes EOS															
4/27/20	P28	P29	94	10' 15A	KP	5375	7	850		4/27/20	AT	1' 49A 30	10' 54A 30		P

Seam Control Form

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By: Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/27/20	P28	P30	114	10' 30A	KP	5375	7	850	4/27/20	AT	10' 49A	10' 54A	30	P
Seam Notes EOS														
4/27/20	P29	P30	23	10' 05A	KS	5374	5	850	4/27/20	AT	10' 13A	10' 18A	30	P
Seam Notes EOS														
4/27/20	P29	P31	94	11' 05A	KS	5374	7	850	4/27/20	AT	11' 27A	11' 32A	30	P
Seam Notes EOS														
4/27/20	P30	P31	115	11' 15A	KS	5374	7	850	4/27/20	AT	11' 27A	11' 32A	30	P
Seam Notes EOS														
4/27/20	P31	P32	161	11' 20A	KP	5375	7	850	4/27/20	AT	1' 00P	1' 05P	30	P
Seam Notes EOS														
4/27/20	P31	P33	40	2' 22P	KP	5375	7	850	4/27/20	AT	2' 45P	2' 50P	30	P
Seam Notes EOS														
4/27/20	P32	P33	23	2' 25P	KP	5375	5	850	4/27/20	AT	2' 33P	2' 38P	30	P
Seam Notes EOS														
4/27/20	P33	P34	42	2' 45P	KS	5374	7	850	4/27/20	AT	3' 06P	3' 11P	30	P
Seam Notes EOS														
4/27/20	P32	P34	161	2' 50P	KS	5374	7	850	4/27/20	AT	3' 06P	3' 11P	30	P
Seam Notes EOS														
4/27/20	P34	P35	223	2' 50P	KP	5375	7	850	4/27/20	AT	3' 54P	3' 59P	30	P

Global Containment Solutions, LLC
Seam Control Form

Page 7

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/27/20	P35	P36	223	4' 10P	KS	5374	7	850	4/27/20	AT	4' 34P	4' 39P		P
											30	30		
Seam Notes EOS														
4/27/20	P36	P37	225	4' 20P	KP	5375	7	850	4/27/20	AT	4' 45P	4' 50P		P
											30	30		
Seam Notes EOS														
4/27/20	P37	P38	225	5' 30P	KP	5375	7	850	4/27/20	AT	6' 05P	6' 10P		P
											30	30		
Seam Notes EOS														
4/27/20	P38	P39	225	6' 10P	KS	5374	7	850	4/27/20	AT	6' 55P	7' 00P		P
											30	30		
Seam Notes EOS														
4/29/20	P39	P40	225	10' 30A	KP	5375	7	850	4/29/20	AT	3' 42P	3' 47P		P
											30	30		
Seam Notes EOS														
4/29/20	P40	P41	225	10' 50A	KS	5374	7	850	4/29/20	AT	11' 32P	11' 37P		P
											30	30		
Seam Notes EOS														
4/29/20	P41	P43	163	1' 10P	KS	5374	7	850	4/29/20	AT	1' 57P	2' 02P		P
											30	30		
Seam Notes EOS														
4/29/20	P41	P42	61	1' 33P	KP	5375	7	850	4/29/20	AT	1' 57P	2' 02P		P
											30	30		
Seam Notes EOS														
4/29/20	P42	P43	23	1' 30P	KP	5375	5	850	4/29/20	AT	1' 38P	1' 43P		P
											30	30		
Seam Notes EOS														
4/29/20	P43	P44	163	1' 55P	KS	5374	7	850	4/29/20	AT	2' 11P	2' 16P		P
											30	30		

Global Containers Solutions, LLC
Seam Control Form

Page 8

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/29/20	P42	P44	61	1' 45P	KS	5374	7	850		4/29/20	AT	2' 11P	2' 16P	P
											30	30		
Seam Notes EOS														
4/29/20	P44	P45	95	3' 20P	KP	5375	7	850		4/29/20	AT	4' 00P	4' 05P	P
											30	30		
Seam Notes EOS														
4/29/20	P44	P46	129	3' 05P	KP	5375	7	850		4/29/20	AT	4' 00P	4' 05P	P
											30	30		
Seam Notes EOS														
4/29/20	P45	P46	23	2' 55P	KS	5374	5	850		4/29/20	AT	3' 00P	3' 05P	P
											30	30		
Seam Notes EOS														
4/29/20	P45	P47	129	3' 20P	KS	5374	7	850		4/29/20	AT	4' 10P	4' 15P	P
											30	30		
Seam Notes EOS														
4/29/20	P46	P47	95	3' 40P	KS	5374	7	850		4/29/20	AT	4' 10P	4' 15P	P
											30	30		
Seam Notes EOS														
4/29/20	P47	P48	188	4' 55P	KP	5375	7	850		4/29/20	AT	5' 31P	5' 36P	P
											30	30		
Seam Notes EOS														
4/29/20	P47	P49	33	5' 10P	KP	5375	7	850		4/29/20	AT	5' 51P	5' 56P	P
											30	30		
Seam Notes EOS														
4/29/20	P48	P49	23	4' 45P	KS	5374	5	850		4/29/20	AT	4' 50P	4' 55P	P
											30	30		
Seam Notes EOS														
4/29/20	P48	P50	188	5' 00P	KS	5374	7	850		4/29/20	AT	6' 10P	6' 15P	P
											30	30		

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/29/20	P49	P50	33	5' 25P	KS	5374	7	850	4/29/20	AT	6' 10P	6' 15P	30	P
Seam Notes EOS														
4/29/20	P50	P51	219	5' 37P	KP	5375	7	850	4/29/20	AT	6' 11P	6' 16P	30	P
Seam Notes EOS														
4/30/20	P51	P52	219	9' 18A	KP	5375	7	850	4/30/20	AT	10' 30A	10' 35A	30	P
Seam Notes EOS														
4/30/20	P52	P53	217	9' 30A	TV	5374	7	850	4/30/20	AT	10' 39A	10' 44A	30	P
Seam Notes EOS														
4/30/20	P53	P54	65	10' 35A	KP	5375	7	850	4/30/20	AT	11' 43A	11' 48A	30	P
Seam Notes EOS														
4/30/20	P53	P55	154	10' 44A	KP	5375	7	850	4/30/20	AT	12' 52P	12' 57P	30	P
Seam Notes EOS														
4/30/20	P54	P55	23	10' 00A	KP	5375	5	850	4/30/20	AT	10' 08A	10' 13A	30	P
Seam Notes EOS														
4/30/20	P54	P56	65	10' 30A	TV	5374	7	850	4/30/20	AT	1' 00P	1' 05P	30	P
Seam Notes EOS														
4/30/20	P55	P56	154	10' 39A	TV	5374	7	850	4/30/20	AT	1' 00P	1' 05P	30	P
Seam Notes EOS														
4/30/20	P56	P57	127	11' 12A	TV	5374	7	850	4/30/20	AT	1' 17P	1' 22P	30	P

Global Containers Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Pond

Cap

Air Pressure Test 30 **PSI**

Air Pressure Hold Time 5 **Minutes**

Allowable Air Pressure Loss 2 **PSI**

Job Description:

Reported By Naililath sysavath

Other

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
4/30/20	P56	P58	94	11' 29A	TV	5374	7	850	4/30/20	AT	1' 17P	1' 22P		P
Seam Notes EOS														
4/30/20	P57	P58	23	11' 10A	KP	5375	5	850	4/30/20	AT	11' 17A	11' 22A		P
Seam Notes EOS														
4/30/20	P57	P59	133	11' 30A	KP	5375	7	850	4/30/20	AT	1' 56P	2' 01P		P
Seam Notes EOS														
4/30/20	P58	P59	94	11' 47A	KP	5375	7	850	4/30/20	AT	1' 56P	2' 01P		P
Seam Notes EOS														
4/30/20	P59	P60	195	2' 50P	KS	5375	7	850	4/30/20	AT	4' 15P	4' 20P		P
Seam Notes EOS														
4/30/20	P59	P61	28	3' 15P	KS	5375	7	850	4/30/20	AT	4' 15P	4' 20P		P
Seam Notes EOS														
4/30/20	P60	P61	23	3' 00P	TV	5374	5	850	4/30/20	AT	3' 05P	3' 10P		P
Seam Notes EOS														
4/30/20	P60	P62	176	3' 25P	TV	5374	7	850	4/30/20	AT	4' 25P	4' 30P		P
Seam Notes EOS														
4/30/20	P61	P62	125	3' 38P	TV	5374	7	850	4/30/20	AT	4' 25P	4' 30P		P
Seam Notes EOS														
4/30/20	P62	P63	179	3' 35P	KS	5375	7	850	4/30/20	AT	4' 36P	4' 41P		P

Global Containers Solutions, LLC

Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By: Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
4/30/20	P63	P64	104	4' 10P	KS	5375	7	850		4/30/20	AT	4' 45P 30	4' 50P 30		P
Seam Notes EOS															
4/30/20	P63	P65	51	4' 20P	KS	5375	7	850		4/30/20	AT	4' 45P 30	4' 50P 30		P
Seam Notes EOS															
4/30/20	P64	P65	23	3' 48P	TV	5374	5	850		4/30/20	AT	4' 07P 30	4' 12P 30		P
Seam Notes EOS															
4/30/20	P64	P66	83	4' 45P	KS	5375	7	850		4/30/20	AT	5' 26P 30	5' 31P 30		P
Seam Notes EOS															
4/30/20	P65	P66	50	5' 00P	KS	5375	7	850		4/30/20	AT	5' 35P 30	5' 40P 30		P
Seam Notes EOS															
4/30/20	P66	P67	104	4' 58P	TV	5374	7	850		4/30/20	AT	5' 18P 30	5' 23P 30		P
Seam Notes EOS															
4/30/20	P67	P68	86	5' 33P	TV	5374	7	850		4/30/20	AT	5' 49P 30	5' 54P 30		P
Seam Notes EOS															
4/30/20	P68	P69	65	5' 45P	TV	5374	7	850		4/30/20	AT	5' 58P 30	6' 03P 30		P
Seam Notes EOS															
4/30/20	P70	P71	17	6' 35P	TV	5374	7	850		5/2/20	AT	7' 32A 30	7' 37A 30		P
Seam Notes EOS															
4/30/20	P71	P72	40	6' 30P	TV	5374	7	850		5/2/20	AT	7' 40A 30	7' 45A 30		P

Seam Control Form

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By: Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/1/20	P72	P73	58	8' 25A	TV	5374	7	850	5/1/20	AT	8' 00A 30	8' 05A 30		P
Seam Notes EOS														
5/1/20	P73	P74	109	8' 39A	TV	5374	7	850	5/1/20	AT	8' 05A 30	8' 10A 30		P
Seam Notes EOS														
5/1/20	P74	P75	136	9' 10A	TV	5374	7	850	5/1/20	AT	8' 20A 30	8' 25A 30		P
Seam Notes EOS														
5/1/20	P69	P70	9	9' 45A	TV	5374	5	850	5/1/20	AT	8' 35A 30	8' 40A 30		P
Seam Notes EOS														
5/1/20	P69	P71	33	9' 46A	TV	5374	5	850	5/1/20	AT	8' 35A 30	8' 40A 30		P
Seam Notes EOS														
5/1/20	P68	P72	31	9' 51A	TV	5374	5	850	5/1/20	AT	8' 35A 30	8' 40A 30		P
Seam Notes EOS														
5/1/20	P67	P73	26	9' 54A	TV	5374	5	850	5/1/20	AT	8' 35A 30	8' 40A 30		P
Seam Notes EOS														
5/1/20	P66	P73	12	9' 56A	TV	5374	5	850	5/1/20	AT	8' 35A 30	8' 40A 30		P
Seam Notes EOS														
5/1/20	P66	P74	19	9' 59A	TV	5374	5	850	5/1/20	AT	8' 35A 30	8' 40A 30		P
Seam Notes EOS														
5/1/20	P64	P74	18	10' 02A	TV	5374	5	850	5/1/20	AT	8' 35A 30	8' 40A 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/1/20	P64	P75	13	10' 04A	TV	5374	5	850		5/2/20	AT	8' 35A 30	8' 40A 30		P
Seam Notes EOS															
5/1/20	P63	P75	24	10' 08A	TV	5374	5	850		5/2/20	AT	8' 40A 30	8' 45A 30		P
Seam Notes EOS															
5/2/20	P75	P76	168	9' 45A	TV	5374	7	850		5/2/20	AT	10' 39A 30	10' 44 30		P
Seam Notes EOS															
5/2/20	P76	P78	75	10' 42A	TV	5374	7	850		5/2/20	AT	11' 05A 30	11' 10A 30		P
Seam Notes EOS															
5/2/20	P76	P77	119	10' 52A	TV	5374	7	850		5/2/20	AT	11' 05A 30	11' 10A 30		P
Seam Notes EOS															
5/2/20	P77	P78	23	10' 21A	TV	5374	5	850		5/2/20	AT	10' 30A 30	10' 35A 30		P
Seam Notes EOS															
5/2/20	P78	P79	75	11' 26A	TV	5374	7	850		5/4/20	AT	7' 50A 30	7' 55A 30		P
Seam Notes EOS															
5/2/20	P77	79	139	11' 30A	TV	5374	7	850		5/4/20	AT	7' 50A 30	7' 55A 30		P
Seam Notes EOS															
5/2/20	P79	P80	220	1' 23P	TV	5374	7	850		5/4/20	AT	7' 47A 30	7' 52A 30		P
Seam Notes EOS															
5/2/20	P80	P81	223	1' 53P	TV	5374	7	850		5/4/20	AT	8' 02A 30	8' 07A 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/2/20	P63	P76	6	1' 05P	TV	5374	5	850	5/2/20	AT	1' 45P	1' 50P	30	P
Seam Notes EOS														
5/2/20	P62	P76	27	1' 06P	TV	5374	5	850	5/2/20	AT	1' 45P	1' 50P	30	P
Seam Notes EOS														
5/2/20	P60	P77	26	1' 11P	TV	5374	5	850	5/2/20	AT	1' 32P	1' 37P	30	P
Seam Notes EOS														
5/4/20	P81	P82	220	9' 09A	TV	5374	7	850	5/4/20	AT	10' 46A	10' 51A	30	P
Seam Notes EOS														
5/4/20	P82	P83	220	9' 25A	KS	5375	7	850	5/4/20	AT	10' 55A	11' 00A	30	P
Seam Notes EOS														
5/4/20	P83	P84	48	10' 00A	TV	5374	7	850	5/4/20	AT	10' 56A	11' 01A	30	P
Seam Notes EOS														
5/4/20	P83	P85	178	10' 07A	TV	5374	7	850	5/4/20	AT	10' 56A	11' 01A	30	P
Seam Notes EOS														
5/4/20	P84	P85	23	9' 49A	TV	5374	5	850	5/4/20	AT	9' 57A	10' 02A	30	P
Seam Notes EOS														
5/4/20	P84	P86	48	10' 25A	KS	5375	7	850	5/4/20	AT	11' 05A	11' 10A	30	P
Seam Notes EOS														
5/4/20	P85	P86	109	10' 30A	KS	5375	7	850	5/4/20	AT	11' 05A	11' 10A	30	P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/4/20	P85	P87	69	10' 40A	KS	5375	7	850	5/4/20	AT	11' 05A 30	11' 10A 30		P
Seam Notes EOS														
5/4/20	P86	P87	23	10' 28A	TV	5374	5	850	5/4/20	AT	10' 35A 30	10' 40A 30		P
Seam Notes EOS														
5/4/20	P86	P88	69	10' 43A	TV	5374	7	850	5/4/20	AT	11' 44A 30	11' 49A 30		P
Seam Notes EOS														
5/4/20	P87	P88	160	11' 06A	TV	5374	7	850	5/4/20	AT	11' 44A 30	11' 49A 30		P
Seam Notes EOS														
5/4/20	P88	P90	10	11' 32A	KS	5375	7	850	5/4/20	AT	11' 57A 30	12' 02P 30		P
Seam Notes EOS														
5/4/20	P88	P89	216	11' 33A	KS	5375	7	850	5/4/20	AT	11' 57A 30	12' 02P 30		P
Seam Notes EOS														
5/4/20	P89	P90	23	11' 25A	KS	5375	5	850	5/4/20	AT	11' 34A 30	11' 39A 30		P
Seam Notes EOS														
5/4/20	P1	P91	234	3' 15P	TV	5374	7	850	5/4/20	AT	3' 48P 30	3' 53P 30		P
Seam Notes EOS														
5/4/20	P91	P92	234	3' 30P	KS	5374	7	850	5/4/20	AT	4' 05P 30	4' 10P 30		P
Seam Notes EOS														
5/4/20	P92	P93	234	4' 05P	KS	5374	7	850	5/4/20	AT	4' 47P 30	4' 52P 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nallilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/4/20	P93	P94	234	4' 15P	TV	5374	7	850		5/4/20	AT	4' 50P 30	4' 55P 30		P
Seam Notes EOS															
5/4/20	P94	P96	202	5' 35P	KS	5375	7	850		5/4/20	AT	6' 05P 30	6' 10P 30		P
Seam Notes EOS															
5/4/20	P94	P95	30	6' 00P	KS	5375	7	850		5/4/20	AT	6' 05P 30	6' 10P 30		P
Seam Notes EOS															
5/4/20	P95	P96	23	5' 35P	TV	5374	5	850		5/4/20	AT	5' 41P 30	5' 46P 30		P
Seam Notes EOS															
5/4/20	P96	P97	202	5' 45P	TV	5374	7	850		5/4/20	AT	6' 15P 30	6' 20P 30		P
Seam Notes EOS															
5/4/20	P95	P97	30	6' 09P	TV	5374	7	850		5/4/20	AT	6' 15P 30	6' 20P 30		P
Seam Notes EOS															
5/5/20	P98	P79	23	10' 13A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P
Seam Notes EOS															
5/5/20	P98	P80	23	10' 17A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P
Seam Notes EOS															
5/5/20	P98	P81	23	10' 21A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P
Seam Notes EOS															
5/5/20	P98	P82	23	10' 25A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P

Global Container Solutions, LLC

Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By: Nalilath sysavath

Primary Layer

Cell

Pond

Cap

Air Pressure Test 30 PSI

Air Pressure Hold Time 5 Minutes

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/5/20	P98 P83	23	10' 29A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P
Seam Notes EOS														
5/5/20	P98 P84	23	10' 34A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P
Seam Notes EOS														
5/5/20	P98 P86	23	10' 38A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P
Seam Notes EOS														
5/5/20	P98 P88	23	10' 42A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P
Seam Notes EOS														
5/5/20	P98 P90	23	10' 46A	TV	5374	5	850		5/5/20	AT	10' 49A 30	10' 54A 30		P
Seam Notes EOS														
5/5/20	P98 P99	216	10' 20A	KS	5375	7	850		5/5/20	AT	10' 40A 30	10' 45A 30		P
Seam Notes EOS														
5/5/20	P100 P101	540	3' 10P	KS	5375		850		5/5/20	AT	4' 10P 30	4' 15P 30		P
Seam Notes EOS														
5/5/20	P101 P102	71	3' 33P	TV	5374		850		5/5/20	AT	4' 20P 30	4' 25P 30		P
Seam Notes EOS														
5/5/20	P102 P34	12	3' 57P	TV	5374		850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS														
5/5/20	P101 P34	34	4' 01P	TV	5374		850		5/5/20	AT	4' 55P 30	5' 00P 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI	Test Results
												PSI IN	PSI OUT	Loss	
5/5/20	P101	P35	23	4' 05P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P36	23	4' 09P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P37	23	4' 13P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P38	23	4' 17P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P39	23	4' 21P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P40	23	4' 24P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P41	23	4' 28P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P42	23	4' 32P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P44	23	4' 36P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P
Seam Notes EOS															
5/5/20	P101	P45	23	4' 40P	TV	5374	5	850		5/5/20	AT	4' 55P 30	5' 00P 30		P

Global Container Solutions, LLC
Seam Control Form

Page 19

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/5/20	P101	P47	23	4:44P	TV	5374	5	850	5/5/20	AT	4:55P 30	5:00P 30		P
Seam Notes EOS														
5/5/20	P101	P48	23	4:48P	TV	5374	5	850	5/5/20	AT	4:55P 30	5:00P 30		P
Seam Notes EOS														
5/5/20	P101	P50	23	4:52P	TV	5374	5	850	5/5/20	AT	4:55P 30	5:00P 30		P
Seam Notes EOS														
5/5/20	P101	P51	10	4:53P	TV	5374	5	850	5/5/20	AT	4:55P 30	5:00P 30		P
Seam Notes EOS														
5/5/20	P101	P21	23	4:30P	KS	5375	5	850	5/5/20	AT	5:07P 30	5:12P 30		P
Seam Notes EOS														
5/5/20	P101	P22	23	4:35P	KS	5375	5	850	5/5/20	AT	5:07P 30	5:12P 30		P
Seam Notes EOS														
5/5/20	P101	P24	23	4:40P	KS	5375	5	850	5/5/20	AT	5:07P 30	5:12P 30		P
Seam Notes EOS														
5/5/20	P101	P26	23	4:45P	KS	5375	5	850	5/5/20	AT	5:07P 30	5:12P 30		P
Seam Notes EOS														
5/5/20	P101	P27	23	4:50P	KS	5375	5	850	5/5/20	AT	5:07P 30	5:12P 30		P
Seam Notes EOS														
5/5/20	P101	P28	23	4:55P	KS	5375	5	850	5/5/20	AT	5:28P 30	5:33P 30		P

Global Container Solutions, LLC
Seam Control Form

Page 20

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Seam Notes	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/5/20	P102	P29	23	5' 00P	KS	5375	5	850	5/5/20	AT	5' 38P 30	5' 43P 30		P
Seam Notes EOS														
5/5/20	P102	P31	23	5' 05P	KS	5375	5	850	5/5/20	AT	5' 38P 30	5' 43P 30		P
Seam Notes EOS														
5/5/20	P102	P33	23	5' 10P	KS	5375	5	850	5/5/20	AT	5' 40P 30	5' 45P 30		P
Seam Notes EOS														
5/5/20	P100	P103	540	5' 01P	TV	5374	7	850	5/5/20	AT	6' 29P 30	6' 34P 30		P
Seam Notes EOS														
5/5/20	P103	P91	10	5' 20P	KS	5375	5	850	5/5/20	AT	6' 09P 30	6' 14P 30		P
Seam Notes EOS														
5/5/20	P103	P1	15	5' 22P	KS	5375	5	850	5/5/20	AT	6' 09P 30	6' 14P 30		P
Seam Notes EOS														
5/5/20	P100	P1	8	5' 24P	KS	5375	5	850	5/5/20	AT	6' 09P 30	6' 14P 30		P
Seam Notes EOS														
5/5/20	P100	P2	15	5' 25P	KS	5375	5	850	5/5/20	AT	6' 09P 30	6' 14P 30		P
Seam Notes EOS														
5/5/20	P101	P2	8	5' 27P	KS	5375	5	850	5/5/20	AT	6' 14P 30	6' 19P 30		P
Seam Notes EOS														
5/5/20	P101	P3	7	5' 28P	KS	5375	5	850	5/5/20	Cap	30	30		P

Global Containers Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Job Description:

Pond

Reported By Nalilath sysavath

Other

Cap

Air Pressure Test 30 **PSI**

Air Pressure Hold Time 5 **Minutes**

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/5/20	P104	P105	106	6' 15P	KS	5375	7	850	5/5/20	AT	6' 55P 30	7' 00P 30		P
Seam Notes EOS														
5/5/20	P105	P106	106	6' 00P	KS	5375	7	850	5/5/20	AT	6' 52P 30	6' 57P 30		P
Seam Notes EOS														
5/5/20	P106	P51	13	6' 14P	TV	5374	5	850	5/5/20	AT	6' 51P 30	6' 56P 30		P
Seam Notes EOS														
5/5/20	P106	P52	23	6' 16P	TV	5374	5	850	5/5/20	AT	6' 51P 30	6' 56P 30		P
Seam Notes EOS														
5/5/20	P106	P53	23	6' 20P	TV	5374	5	850	5/5/20	AT	6' 51P 30	6' 56P 30		P
Seam Notes EOS														
5/5/20	P106	P54	23	6' 24P	TV	5374	5	850	5/5/20	AT	6' 51P 30	6' 56P 30		P
Seam Notes EOS														
5/5/20	P106	P56	23	6' 28P	TV	5374	5	850	5/5/20	AT	6' 51P 30	6' 56P 30		P
Seam Notes EOS														
5/5/20	P57	P99	23	6' 32P	TV	5374	5	850	5/5/20	AT	7' 03P 30	7' 08P 30		P
Seam Notes EOS														
5/5/20	P59	P98	23	6' 36P	TV	5374	5	850	5/5/20	AT	7' 03P 30	7' 08P 30		P
Seam Notes EOS														
5/5/20	P99	P104	23	7' 06P	TV	5374	5	850	5/5/20	AT	7' 10P 30	7' 15P 30		P

Global Container Solutions, LLC
Seam Control Form

Page 22

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/5/20	P99	P105	23	7' 03P	TV	5374	5	850		5/5/20	AT	7' 10P 30	7' 15P 30	P
Seam Notes EOS														
5/5/20	P99	P106	23	7' 00P	TV	5374	5	850		5/5/20	AT	7' 10P 30	7' 15P 30	P
Seam Notes EOS														
5/5/20	P103	P104	23	6' 45P	KS	5375	5	850		5/5/20	AT	7' 00P 30	7' 05P 30	P
Seam Notes EOS														
5/5/20	P100	P105	23	6' 50P	KS	5375	5	850		5/5/20	AT	7' 00P 30	7' 05P 30	P
Seam Notes EOS														
5/5/20	P101	P106	23	6' 55P	KS	5375	5	850		5/5/20	AT	7' 00P 30	7' 05P 30	P
Seam Notes EOS														
5/6/20	P97	P107	238	10' 35A	TV	5374	7	850		5/6/20	AT	11' 23A 30	11' 28A 30	P
Seam Notes EOS														
5/6/20	P107	P108	235	10' 50A	KS	5375	7	850		5/6/20	AT	3' 12P 30	3' 17P 30	P
Seam Notes EOS														
5/6/20	P108	P109	201	2' 07P	TV	5374	7	850		5/6/20	AT	2' 52P 30	2' 57P 30	P
Seam Notes EOS														
5/6/20	P108	P110	34	2' 11P	TV	5374	7	850		5/6/20	AT	2' 52P 30	2' 57P 30	P
Seam Notes EOS														
5/6/20	P109	P110	23	1' 51P	TV	5374	5	850		5/6/20	AT	1' 58P 30	2' 03P 30	P

Global Containers Solutions, LLC
Seam Control Form

Page 23

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Job Description:

Pond

Reported By Nalilath sysavath

Other

Cap

Air Pressure Test 30 PSI

Air Pressure Hold Time 5 Minutes

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/6/20	P109	P111	2' 10P	KS	5375	7	850		5/6/20	AT	2' 42P 30	2' 47P 30		P
Seam Notes EOS														
5/6/20	P110	P111	34	KS	5375	7	850		5/6/20	AT	2' 42P 30	2' 47P 30		P
Seam Notes EOS														
5/6/20	P111	P112	64	TV	5374	7	850		5/6/20	AT	4' 50P 30	4' 55P 30		P
Seam Notes EOS														
5/6/20	P111	P113	202	TV	5374	7	850		5/6/20	AT	4' 50P 30	4' 55P 30		P
Seam Notes EOS														
5/6/20	P112	P113	23	TV	5374	5	850		5/6/20	AT	4' 18P 30	4' 23P 30		P
Seam Notes EOS														
5/6/20	P112	P114	64	KS	5375	7	850		5/7/20	AT	8' 22A 30	8' 27A 30		P
Seam Notes EOS														
5/6/20	P113	P114	202	KS	5375	7	850		5/7/20	AT	8' 13A 30	8' 18A 30		P
Seam Notes EOS														
5/6/20	P114	P115	143	TV	5374	7	850		5/7/20	AT	7' 50A 30	7' 55A 30		P
Seam Notes EOS														
5/6/20	P114	P116	91	TV	5374	7	850		5/7/20	AT	7' 50A 30	7' 55A 30		P
Seam Notes EOS														
5/7/20	115	117	63	KS	5375	7	850		5/7/20	AT	10' 46A 30	10' 51A 30		P

Global Containers Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/7/20	P116	P117	143	10' 15A	KS	5375	7	850	5/7/20	AT	10' 46A	10' 51	30	P
Seam Notes EOS														
5/7/20	P117	P118	145	10' 30A	KS	5375	7	850	5/7/20	AT	10' 54A	10' 59A	30	P
Seam Notes EOS														
5/7/20	P117	P119	43	10' 45A	KS	5375	7	850	5/7/20	AT	10' 54A	10' 59A	30	P
Seam Notes EOS														
5/7/20	P118	P119	23	10' 25A	TV	5374	5	850	5/7/20	AT	10' 35A	10' 40A	30	P
Seam Notes EOS														
5/7/20	P118	P120	118	10' 39A	TV	5374	7	850	5/7/20	AT	11' 03A	11' 08A	30	P
Seam Notes EOS														
5/7/20	P119	P120	43	10' 52A	TV	5374	7	850	5/7/20	AT	11' 03A	11' 08A	30	P
Seam Notes EOS														
5/7/20	P120	P121	136	11' 00A	KS	5375	7	850	5/7/20	AT	11' 13A	11' 18A	30	P
Seam Notes EOS														
5/7/20	P121	P122	109	11' 04A	TV	5374	7	850	5/7/20	AT	11' 40A	11' 45A	30	P
Seam Notes EOS														
5/7/20	P122	P123	47	11' 28A	TV	5374	7	850	5/7/20	AT	11' 14A	11' 19A	30	P
Seam Notes EOS														
5/7/20	P122	P124	28	11' 33A	TV	5374	7	850	5/7/20	AT	11' 14A	11' 19A	30	P

Global Containment Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath sysavath

Primary Layer

Cell

Pond

Cap

Air Pressure Test 30 **PSI**

Air Pressure Hold Time 5 **Minutes**

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/7/20	P123	P124	23	11' 25A	KS	5375	5	850		5/7/20	AT	11' 52A 30	11' 57A 30		P
Seam Notes EOS															
5/7/20	P124	P125	25	11' 35A	KS	5375	7	850		5/7/20	AT	1' 20P 30	1' 25P 30		P
Seam Notes EOS															
5/7/20	P123	P126	14	11' 45A	TV	5374	5	850		5/7/20	AT	1' 04P 30	1' 09P 30		P
Seam Notes EOS															
5/7/20	P124	P126	10	11' 47A	TV	5374	5	850		5/7/20	AT	1' 04P 30	1' 09P 30		P
Seam Notes EOS															
5/7/20	P125	P126	22	11' 49A	TV	5374	5	850		5/7/20	AT	1' 04P 30	1' 09P 30		P
Seam Notes EOS															
5/7/20	P126	P127	29	1' 20P	TV	5374	7	850		5/7/20	AT	1' 32P 30	1' 37P 30		P
Seam Notes EOS															
5/7/20	P127	P128	51	1' 24P	TV	5374	7	850		5/7/20	AT	1' 41P 30	1' 46P 30		P
Seam Notes EOS															
5/7/20	P128	P129	67	2' 43P	TV	5374	7	850		5/7/20	AT	3' 16P 30	3' 21P 30		P
Seam Notes EOS															
5/7/20	P129	P130	94	2' 50P	KS	5375	7	850		5/7/20	AT	3' 24P 30	3' 29P 30		P
Seam Notes EOS															
5/7/20	P130	P131	119	2' 55P	TV	5374	7	850		5/7/20	AT	3' 34P 30	3' 39P 30		P

Global Containers Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/7/20	P131	P132	13	3' 31P	TV	5374	7	850	5/7/20	AT	3' 47P 30	3' 52P 30		P
Seam Notes EOS														
5/7/20	P131	P133	132	3' 32P	TV	5374	7	850	5/7/20	AT	3' 47P 30	3' 52P 30		P
Seam Notes EOS														
5/7/20	P132	P133	23	3' 21P	TV	5374	5	850	5/7/20	AT	3' 39P 30	3' 44P 30		P
Seam Notes EOS														
5/7/20	P118	P131	30	3' 25P	KS	5375	5	850	5/7/20	AT	4' 00P 30	4' 05P 30		P
Seam Notes EOS														
5/7/20	P120	P131	6	3' 30P	KS	5375	5	850	5/7/20	AT	4' 00P 30	4' 05P 30		P
Seam Notes EOS														
5/7/20	P120	P130	27	3' 31P	KS	5375	5	850	5/7/20	AT	4' 00P 30	4' 05P 30		P
Seam Notes EOS														
5/7/20	P121	P130	10	3' 35P	KS	5375	5	850	5/7/20	AT	4' 00P 30	4' 05P 30		P
Seam Notes EOS														
5/7/20	P121	P129	25	3' 37P	KS	5375	5	850	5/7/20	AT	4' 00P 30	4' 05P 30		P
Seam Notes EOS														
5/7/20	P122	P129	12	3' 41P	KS	5375	5	850	5/7/20	AT	4' 09P 30	4' 14P 30		P
Seam Notes EOS														
5/7/20	P122	P128	23	3' 44P	KS	5375	5	850	5/7/20	AT	4' 09P 30	4' 14P 30		P

Global Containers t Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/7/20	P123	P127	37	3' 48P	KS	5375	5	850		5/7/20	AT	4' 09P 30	4' 14P 30		P
Seam Notes EOS															
5/8/20	P133	P134	132	10' 13A	TV	5374	7	850		5/8/20	AT	10' 40A 30	10' 45A 30		P
Seam Notes EOS															
5/8/20	P132	P134	41	10' 32A	TV	5374	7	850		5/8/20	AT	10' 40A 30	10' 45A 30		P
Seam Notes EOS															
5/8/20	P134	P135	156	10' 45A	KS	5375	7	850		5/8/20	AT	1' 10P 30	1' 15P 30		P
Seam Notes EOS															
5/8/20	P134	P136	52	11' 05A	KS	5375	7	850		5/8/20	AT	1' 10P 30	1' 15P 30		P
Seam Notes EOS															
5/8/20	P135	P136	23	10' 52A	TV	5374	5	850		5/8/20	AT	1' 00P 30	1' 05P 30		P
Seam Notes EOS															
5/8/20	P136	P137	52	11' 15A	KS	5375	7	850		5/8/20	AT	1' 11P 30	1' 16P 30		P
Seam Notes EOS															
5/8/20	P135	P137	159	11' 20A	KS	5375	7	850		5/8/20	AT	1' 11P 30	1' 16P 30		P
Seam Notes EOS															
5/8/20	P137	P138	212	11' 24A	TV	5374	7	850		5/8/20	AT	1' 22P 30	1' 27P 30		P
Seam Notes EOS															
5/8/20	P138	P140	183	11' 50A	KS	5375	7	850		5/8/20	AT	1' 25P 30	1' 30P 30		P

Global Containm(Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath sysavath

Primary Layer

Other

Cell

Pond

Cap

Air Pressure Test 30 **PSI**

Air Pressure Hold Time 5 **Minutes**

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/8/20	P138	P139	29	12' 00P	TV	5374	7	850	5/8/20	AT	1' 25P 30	1' 30P 30		P
Seam Notes EOS														
5/8/20	P139	P140	23	11' 50A	TV	5374	5	850	5/8/20	AT	1' 38P 30	1' 43P 30		P
Seam Notes EOS														
5/8/20	P140	P141	183	1' 33P	TV	5374	7	850	5/8/20	AT	2' 06P 30	2' 11P 30		P
Seam Notes EOS														
5/8/20	P139	P141	29	1' 20P	TV	5374	7	850	5/8/20	AT	2' 06P 30	2' 11P 30		P
Seam Notes EOS														
5/8/20	P141	P142	212	2' 05P	TV	5374	7	850	5/8/20	AT	2' 25P 30	2' 30P 30		P
Seam Notes EOS														
5/8/20	P117	P132	30	2' 05P	KS	5375	5	850	5/8/20	AT	2' 15P 30	2' 20P 30		P
Seam Notes EOS														
5/8/20	P115	P134	30	2' 10P	KS	5375	5	850	5/8/20	AT	2' 15P 30	2' 20P 30		P
Seam Notes EOS														
5/9/20	P142	P143	113	8' 41A	TV	5374	7	850	5/11/20	AT	8' 00A 30	8' 05A 30		P
Seam Notes EOS														
5/9/20	P142	P144	96	8' 55A	TV	5374	7	850	5/11/20	AT	8' 00A 30	8' 05A 30		P
Seam Notes EOS														
5/9/20	P143	P144	23	8' 35A	KS	5375	5	850	5/11/20	AT	8' 15A 30	8' 20A 30		P

Global Containm Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Job Description:

Pond

Reported By Nalilath sysavath

Other

Cap

Air Pressure Test 30 **PSI**

Air Pressure Hold Time 5 **Minutes**

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/9/20	P143	P146	8	9' 10A	KS	5375	7	850		5/11/20	AT	8' 01A	8' 06A		P
												30	30		
Seam Notes EOS															
5/9/20	P143	P145	105	8' 50A	KS	5375	7	850		5/11/20	AT	8' 01A	8' 06A		P
												30	30		
Seam Notes EOS															
5/9/20	P144	P145	96	9' 00A	KS	5375	7	850		5/11/20	AT	8' 01A	8' 06A		P
												30	30		
Seam Notes EOS															
5/9/20	P145	P146	23	9' 14A	TV	5374	5	850		5/11/20	AT	8' 10A	8' 15A		P
												30	30		
Seam Notes EOS															
5/11/20	P146	P147	11	9' 55A	KS	5375	7	850		5/11/20	AT	10' 41A	10' 46A		P
												30	30		
Seam Notes EOS															
5/11/20	P145	P147	201	9' 57A	KS	5375	7	850		5/11/20	AT	10' 41A	10' 46A		P
												30	30		
Seam Notes EOS															
5/11/20	P147	P148	212	10' 13A	TV	5374	7	850		5/11/20	AT	10' 42A	10' 47A		P
												30	30		
Seam Notes EOS															
5/11/20	P148	P149	68	10' 40A	TV	5374	7	850		5/11/20	AT	11' 08A	11' 13A		P
												30	30		
Seam Notes EOS															
5/11/20	P148	P150	145	10' 47A	TV	5374	7	850		5/11/20	AT	11' 08A	11' 13A		P
												30	30		
Seam Notes EOS															
5/11/20	P149	P150	23	10' 40A	KS	5375	5	850		5/11/20	AT	10' 54A	10' 59		P
												30	30		

Global Containers Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/11/20	P149	P151	68	10:55A	KS	5375	7	850	5/11/20	AT	11:18A	11:23A		P
Seam Notes EOS														
5/11/20	P150	P151	145	11:05A	KS	5375	7	850	5/11/20	AT	11:18A	11:23A		P
Seam Notes EOS														
5/11/20	P151	P152	150	11:49A	TV	5374	7	850	5/11/20	AT	1:05P	1:10P		P
Seam Notes EOS														
5/11/20	P151	P153	60	12:00P	TV	5374	7	850	5/11/20	AT	1:05P	1:10P		P
Seam Notes EOS														
5/11/20	P152	P153	23	11:50A	KS	5375	5	850	5/11/20	AT	1:35P	1:40P		P
Seam Notes EOS														
5/11/20	P152	P154	150	1:10P	KS	5375	7	850	5/11/20	AT	1:30P	1:35P		P
Seam Notes EOS														
5/11/20	P153	P154	60	1:05P	KS	5375	7	850	5/11/20	AT	1:30P	1:35P		P
Seam Notes EOS														
5/11/20	P154	P155	210	2:25P	KS	5375	7	850	5/11/20	AT	3:30P	3:35P		P
Seam Notes EOS														
5/11/20	P155	P156	29	3:02P	TV	5374	7	850	5/11/20	AT	3:31P	3:36P		P
Seam Notes EOS														
5/11/20	P155	P157	178	2:45P	TV	5374	7	850	5/11/20	AT	3:31P	3:36P		P

Global Containm Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/11/20	P156	P157	23	2' 55P	KS	5375	5	850	5/11/20	AT	3' 40P	3' 45P		P
											30	30		
Seam Notes EOS														
5/11/20	P157	P158	178	3' 10P	KS	5375	7	850	5/11/20	AT	3' 45P	3' 50P		P
											30	30		
Seam Notes EOS														
5/11/20	P156	P158	29	3' 35P	KS	5375	7	850	5/11/20	AT	3' 45P	3' 50P		P
											30	30		
Seam Notes EOS														
5/11/20	P158	P160	98	3' 45P	TV	5374	7	850	5/11/20	AT	4' 08P	4' 13P		P
											30	30		
Seam Notes EOS														
5/11/20	P158	P159	111	3' 55P	TV	5374	7	850	5/11/20	AT	4' 08P	4' 13P		P
											30	30		
Seam Notes EOS														
5/11/20	P159	P160	23	3' 23P	TV	5374	5	850	5/11/20	AT	3' 51P	3' 56P		P
											30	30		
Seam Notes EOS														
5/11/20	P160	P161	98	4' 00P	KS	5375	7	850	5/11/20	AT	4' 30P	4' 35P		P
											30	30		
Seam Notes EOS														
5/11/20	P159	P161	111	4' 10P	KS	5375	7	850	5/11/20	AT	4' 30P	4' 35P		P
											30	30		
Seam Notes EOS														
5/11/20	P161	P162	209	4' 45P	TV	5374	7	850	5/11/20	AT	5' 12P	5' 17P		P
											30	30		
Seam Notes EOS														
5/11/20	P162	P163	209	5' 00P	KS	5375	7	850	5/11/20	AT	5' 24P	5' 29P		P
											30	30		

Global Containment Solutions, LLC
Seam Control Form

Page 32

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/11/20	P163	P164	209	5' 10P	TV	5374	7	850	5/11/20	AT	5' 33P 30	5' 38P 30		P
Seam Notes EOS														
5/12/20	P164	P165	89	9' 15A	TV	5374	7	850	5/12/20	AT	9' 45A 30	9' 50A 30		P
Seam Notes EOS														
5/12/20	P164	P166	121	9' 04A	TV	5374	7	850	5/12/20	AT	9' 45A 30	9' 50A 30		P
Seam Notes EOS														
5/12/20	P165	P166	23	9' 00A	KS	5375	5	850	5/12/20	AT	10' 10A 30	10' 15A 30		P
Seam Notes EOS														
5/12/20	P165	P167	89	9' 15A	KS	5375	7	850	5/12/20	AT	9' 47A 30	9' 52A 30		P
Seam Notes EOS														
5/12/20	P166	P167	121	9' 25A	KS	5375	7	850	5/12/20	AT	9' 47A 30	9' 52A 30		P
Seam Notes EOS														
5/12/20	P167	P168	176	9' 27A	TV	5374	7	850	5/12/20	AT	10' 00A 30	10' 05A 30		P
Seam Notes EOS														
5/12/20	P167	P169	32	10' 10A	TV	5374	7	850	5/12/20	AT	10' 00A 30	10' 05A 30		P
Seam Notes EOS														
5/12/20	P168	P169	23	9' 35A	KS	5375	5	850	5/12/20	AT	10' 25A 30	10' 30A 30		P
Seam Notes EOS														
5/12/20	P168	P170	176	9' 50A	KS	5375	7	850	5/12/20	AT	10' 35A 30	10' 40A 30		P

Global Containm Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mll

Job Description:

Reported By: Nalilath sysavath

Primary Layer

Cell	
Pond	X
Cap	

Air Pressure Test 30 PSI

Air Pressure Hold Time 5 Minutes

Allowable Air Pressure Loss 2 PSI

Other

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/12/20	P169	P170	32	10' 10A	KS	5375	7	850		5/12/20	AT	10' 35A	10' 40A		P
Seam Notes EOS															
5/12/20	P170	P171	205		KS	5375	7	850		5/12/20	AT	10' 38A	10' 43A		P
Seam Notes EOS															
5/12/20	P171	P172	55	11' 15A	KS	5375	7	850		5/12/20	AT	11' 35A	11' 40A		P
Seam Notes EOS															
5/12/20	P171	P173	152	11' 25A	KS	5375	7	850		5/12/20	AT	11' 35A	11' 40A		P
Seam Notes EOS															
5/12/20	P172	P173	23	11' 10A	TV	5374	5	850		5/12/20	AT	11' 25A	11' 30A		P
Seam Notes EOS															
5/12/20	P172	P174	55	11' 22A	TV	5374	7	850		5/12/20	AT	11' 40A	11' 45A		P
Seam Notes EOS															
5/12/20	P173	P174	152	11' 27A	TV	5374	7	850		5/12/20	AT	11' 40A	11' 45A		P
Seam Notes EOS															
5/12/20	P174	P175	152	2' 25P	KS	5375	7	850		5/12/20	AT	2' 57P	3' 02P		P
Seam Notes EOS															
5/12/20	P174	P176	53	2' 40P	KS	5375	7	850		5/12/20	AT	2' 57P	3' 02P		P
Seam Notes EOS															
5/12/20	P175	P176	23	2' 29P	TV	5374	5	850		5/12/20	AT	3' 52P	3' 57P		P

Global Containment Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath sysavath

Primary Layer

Cell

Pond

Cap

Air Pressure Test 30 **PSI**

Air Pressure Hold Time 5 **Minutes**

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/12/20	P175	P177	46	2' 52P	TV	5374	7	850	5/12/20	AT	3' 45P	3' 50P	30	P
Seam Notes EOS														
5/12/20	P175	P178	75	2' 55P	TV	5374	7	850	5/12/20	AT	3' 44P	3' 49P	30	P
Seam Notes EOS														
5/12/20	P176	P178	53	3' 05P	TV	5374	7	850	5/12/20	AT	3' 44P	3' 49P	30	P
Seam Notes EOS														
5/12/20	P177	P178	23	2' 43P	TV	5374	5	850	5/12/20	AT	3' 15P	3' 20P	30	P
Seam Notes EOS														
5/12/20	P177	P179	24	2' 50P	KS	5375	7	850	5/12/20	AT	3' 40P	3' 45P	30	P
Seam Notes EOS														
5/12/20	P178	P179	125	2' 55P	KS	5375	7	850	5/12/20	AT	3' 40P	3' 45P	30	P
Seam Notes EOS														
5/12/20	P179	P180	117	3' 30P	TV	5374	7	850	5/12/20	AT	3' 57P	4' 02P	30	P
Seam Notes EOS														
5/12/20	P180	P181	105	4' 25P	TV	5374	7	850	5/12/20	AT	5' 35P	5' 40P	30	P
Seam Notes EOS														
5/12/20	P182	P184	19	5' 20P	KS	5375	5	850	5/12/20	AT	5' 45P	5' 50P	30	P
Seam Notes EOS														
5/12/20	P182	P183	11	5' 25P	KS	5375	5	850	5/12/20	AT	5' 45P	5' 50P	30	P

Global Containers Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath sysavath

Primary Layer

Cell

Pond

Cap

Air Pressure Test 30 PSI

Air Pressure Hold Time 5 Minutes

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/12/20	P183 P184	12	5' 10P	KS	5375	5	850		5/12/20	AT	5' 58P 30	6' 03P 30		P
Seam Notes EOS														
5/12/20	P184 P185	33	5' 15P	TV	5374	5	850		5/12/20	AT	5' 40P 30	5' 45P 30		P
Seam Notes EOS														
5/12/20	P182 P185	24	5' 20P	TV	5374	5	850		5/12/20	AT	5' 40P 30	5' 45P 30		P
Seam Notes EOS														
5/12/20	P185 P186	76	4' 55P	KS	7		850		5/12/20	AT	5' 21P 30	5' 26P 30		P
Seam Notes EOS														
5/12/20	P186 P187	88	4' 50P	TV	7		850		5/12/20	AT	5' 19P 30	5' 24P 30		P
Seam Notes EOS														
5/12/20	P181 P186	23	5' 52P	TV	5		850		5/12/20	AT	6' 18P 30	6' 23P 30		P
Seam Notes EOS														
5/12/20	P181 P185	23	5' 57P	TV	5		850		5/12/20	AT	6' 21P 30	6' 26P 30		P
Seam Notes EOS														
5/12/20	P181 P182	47	6' 02P	TV	7		850		5/12/20	AT	6' 21P 30	6' 26P 30		P
Seam Notes EOS														
5/12/20	P187 P181	23	5' 45P	KS	5		850		5/12/20	AT	6' 07P 30	6' 12P 30		P
Seam Notes EOS														
5/12/20	P187 P180	23	5' 50P	KS	5		850		5/12/20	AT	6' 07P 30	6' 12P 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath sysavath

Primary Layer

Cell

Pond

Cap

Air Pressure Test 30 **PSI**

Air Pressure Hold Time 5 **Minutes**

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/12/20	P187 P179	35	5' 55P	KS	5375	7	850		5/12/20	AT	6' 07P 30	6' 12P 30		P
Seam Notes EOS														
5/13/20	P187 P188	170	8' 22P	TV	5374	7	850		5/14/20	AT	7' 54A 30	7' 59A 30		P
Seam Notes EOS														
5/13/20	P188 P189	210	8' 40P	KS	5375	7	850		5/14/20	AT	7' 30A 30	7' 35A 30		P
Seam Notes EOS														
5/13/20	P175 P189	35	8' 54P	TV	5374	5	850		5/14/20	AT	7' 44A 30	7' 49A 30		P
Seam Notes EOS														
5/13/20	P175 P188	7	8' 59P	TV	5374	5	850		5/14/20	AT	8' 10A 30	8' 15A 30		P
Seam Notes EOS														
5/13/20	P177 P188	35	9' 00P	TV	5374	5	850		5/14/20	AT	8' 22A 30	8' 27A 30		P
Seam Notes EOS														
5/14/20	P189 P190	238	9' 30A	KS	5375	7	850		5/14/20	AT	9' 54A 30	9' 59A 30		P
Seam Notes EOS														
5/14/20	P190 P191	244	9' 53A	TV	5374	7	850		5/14/20	AT	10' 25A 30	10' 30A 30		P
Seam Notes EOS														
5/14/20	P192 P194	55	11' 55A	KS	5375	7	850		5/14/20	AT	1' 46P 30	1' 51P 30		P
Seam Notes EOS														
5/14/20	P193 P194	17	11' 50A	KS	5375	7	850		5/14/20	AT	1' 45P 30	1' 50P 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By: Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Result
												PSI IN	PSI OUT		
5/14/20	P194	P196	92	11'00A	KS	5375	7	850		5/14/20	AT	1'27P	1'32P		P
												30	30		
Seam Notes EOS															
5/14/20	P195	P196	39	1'05P	TV	5374	5	850		5/14/20	AT	1'35P	1'40P		P
												30	30		
Seam Notes EOS															
5/14/20	P194	P195	20	11'57P	TV	5374	5	850		5/14/20	AT	1'26P	1'31P		P
												30	30		
Seam Notes EOS															
5/14/20	P196	P197	185	11'50A	TV	5374	7	850		5/14/20	AT	1'15P	1'20P		P
												30	30		
Seam Notes EOS															
5/14/20	P191	P192	60	1'24P	TV	5374	5	850		5/14/20	AT	1'53P	1'58P		P
												30	30		
Seam Notes EOS															
5/14/20	P191	P193	12	1'30P	TV	5374	5	850		5/14/20	AT	1'53P	1'58P		P
												30	30		
Seam Notes EOS															
5/14/20	P191	P194	25	1'34P	TV	5374	5	850		5/14/20	AT	1'53P	1'58P		P
												30	30		
Seam Notes EOS															
5/14/20	P191	P195	39	1'36P	TV	5374	5	850		5/14/20	AT	1'53P	1'58P		P
												30	30		
Seam Notes EOS															
5/14/20	P191	P196	64	3'35P	KS	5375	5	850		5/14/20	AT	1'55P	2'00P		P
												30	30		
Seam Notes EOS															
5/14/20	P191	P197	36	3'30P	KS	5375	5	850		5/14/20	AT	1'55P	2'00P		P
												30	30		

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/14/20	P103	P198	540	4' 02P	TV	5374	7	850		5/14/20	AT	5' 28P 30	5' 33P 30		P
Seam Notes EOS															
5/14/20	P198	P199	540	4' 45P	KS	5375	7	850		5/14/20	AT	5' 42P 30	5' 47P 30		P
Seam Notes EOS															
5/15/20	P199	P200	540	9' 47A	TV	5374	7	850		5/15/20	AT	11' 30A 30	11' 35A 30		P
Seam Notes EOS															
5/15/20	P200	P201	540	10' 06A	KP	5373	7	850		5/15/20	AT	11' 32A 30	11' 37A 30		P
Seam Notes EOS															
5/15/20	P201	P202	540	10' 35A	KS	5375	7	850		5/15/20	AT	11' 40A 30	11' 45A 30		P
Seam Notes EOS															
5/15/20	P202	P203	540	10' 55A	TV	5374	7	850		5/15/20	AT	12' 07P 30	12' 12P 30		P
Seam Notes EOS															
5/15/20	P203	P204	540	11' 20A	KP	5373	7	850		5/15/20	AT	1' 16P 30	1' 21P 30		P
Seam Notes EOS															
5/15/20	P204	P205	540	1' 50P	KP	5373	7	850		5/15/20	AT	3' 04P 30	3' 09P 30		P
Seam Notes EOS															
5/15/20	P205	P206	540	1' 57P	TV	5374	7	850		5/15/20	AT	2' 55P 30	3' 00P 30		P
Seam Notes EOS															
5/15/20	P206	P207	540	2' 25P	KS	5375	7	850		5/15/20	AT	3' 44P 30	3' 49P 30		P

Global Container Solutions, LLC

Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond X

Air Pressure Hold Time 5 Minutes

Reported By: Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/15/20	P207	P208	540	2' 51P	TV	5374	7	850		5/15/20	AT	4' 05P 30	4' 10P 30		P
Seam Notes EOS															
5/15/20	P112	P208	16	3' 35P	KS	5375	5	850		5/15/20	AT	4' 29P 30	4' 34P 30		P
Seam Notes EOS															
5/15/20	P112	P207	7	3' 38P	KS	5375	5	850		5/15/20	AT	4' 29P 30	4' 34P 30		P
Seam Notes EOS															
5/15/20	P111	P207	16	3' 40P	KS	5375	5	850		5/15/20	AT	4' 29P 30	4' 34P 30		P
Seam Notes EOS															
5/15/20	P111	P206	7	3' 43P	KS	5375	5	850		5/15/20	AT	4' 29P 30	4' 34P 30		P
Seam Notes EOS															
5/15/20	P109	P206	16	3' 45P	KS	5375	5	850		5/15/20	AT	4' 29P 30	4' 34P 30		P
Seam Notes EOS															
5/15/20	P109	P205	7	3' 48P	KS	5375	5	850		5/15/20	AT	4' 29P 30	4' 34P 30		P
Seam Notes EOS															
5/15/20	P108	P205	16	3' 50P	KS	5375	5	850		5/15/20	AT	4' 29P 30	4' 34P 30		P
Seam Notes EOS															
5/15/20	P108	P204	7	3' 53P	KS	5375	5	850		5/15/20	AT	4' 29P 30	4' 34P 30		P
Seam Notes EOS															
5/15/20	P107	P204	16	3' 55P	KS	5375	5	850		5/15/20	AT	4' 44P 30	4' 49P 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Naililath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/15/20	P107	P203	7	3 58P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P97	P203	16	4 00P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P97	P202	7	4 03P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P96	P202	16	4 05P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P96	P201	7	4 08P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P94	P201	16	4 10P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P94	P200	7	4 13P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P93	P200	16	4 15P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P93	P199	7	4 18P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P
Seam Notes EOS														
5/15/20	P92	P199	16	4 20P	KS	5375	5	850	5/15/20	AT	4 44P	4 49P		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/15/20	P92	P198	7	4 23P	KS	5375	5	850		5/15/20	AT	4 44P	4 49P	P
											30	30		
Seam Notes EOS														
5/15/20	P91	P198	16	4 25P	KS	5375	5	850		5/15/20	AT	4 44P	4 49P	P
											30	30		
Seam Notes EOS														
5/15/20	P208	P209	270	4 12P	TV	5374	7	850		5/15/20	AT	5 22P	5 27P	P
											30	30		
Seam Notes EOS														
5/15/20	P208	P210	270	4 35P	TV	5374	7	850		5/15/20	AT	5 22P	5 27P	P
											30	30		
Seam Notes EOS														
5/15/20	P209	P210	11	4 22P	KP	5373	7	850		5/15/20	AT	4 57P	5 02P	P
											30	30		
Seam Notes EOS														
5/16/20	P209	P167	17	8 34A	KS	5375	5	850		5/16/20	AT	8 58A	9 03A	P
											30	30		
Seam Notes EOS														
5/16/20	P209	P165	23	8 30A	KS	5375	5	850		5/16/20	AT	8 58A	9 03A	P
											30	30		
Seam Notes EOS														
5/16/20	P209	P164	23	8 26A	KS	5375	5	850		5/16/20	AT	8 58A	9 03A	P
											30	30		
Seam Notes EOS														
5/16/20	P209	P163	23	8 22A	KS	5375	5	850		5/16/20	AT	8 58A	9 03A	P
											30	30		
Seam Notes EOS														
5/16/20	P209	P162	23	8 18A	KS	5375	5	850		5/16/20	AT	8 51A	8 56A	P
											30	30		

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam No	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/16/20	P209	P161	23	8' 14A	KS	5375	5	850		5/16/20	AT	8' 51A 30	8' 56A 30		P
Seam Notes EOS															
5/16/20	P209	P159	23	8' 10A	KS	5375	5	850		5/16/20	AT	8' 51A 30	8' 56A 30		P
Seam Notes EOS															
5/16/20	P209	P158	23	8' 06A	KS	5375	5	850		5/16/20	AT	8' 51A 30	8' 56A 30		P
Seam Notes EOS															
5/16/20	P209	P156	23	8' 02A	KS	5375	5	850		5/16/20	AT	8' 51A 30	8' 56A 30		P
Seam Notes EOS															
5/16/20	P209	P155	23	7' 58A	KS	5375	5	850		5/16/20	AT	8' 51A 30	8' 56A 30		P
Seam Notes EOS															
5/16/20	P209	P154	23	7' 54A	KS	5375	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS															
5/16/20	P209	P152	23	7' 50A	KS	5375	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS															
5/16/20	P210	P151	23	8' 44A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS															
5/16/20	P210	P149	23	8' 40A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS															
5/16/20	P210	P148	23	8' 36A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P

Global Container Solutions, LLC

Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By: Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/16/20	P210 P147	23	8' 32A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS														
5/16/20	P210 P146	23	8' 28A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS														
5/16/20	P210 P146	23	8' 26A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS														
5/16/20	P210 P143	23	8' 22A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS														
5/16/20	P210 P142	23	8' 18A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS														
5/16/20	P210 P138	23	8' 14A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS														
5/16/20	P210 P141	23	8' 10A	TV	5374	5	850		5/16/20	AT	8' 45A 30	8' 50A 30		P
Seam Notes EOS														
5/16/20	P210 P139	23	7' 45A	TV	5374	5	850		5/16/20	AT	8' 15A 30	8' 20A 30		P
Seam Notes EOS														
5/16/20	P210 P137	18	7' 40A	TV	5374	5	850		5/16/20	AT	8' 15A 30	8' 20A 30		P
Seam Notes EOS														
5/16/20	P210 P135	15	7' 59A	TV	5374	5	850		5/16/20	AT	8' 07A 30	8' 12A 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/16/20	P208	P114	8	8:00A	TV	5374	5	850		5/16/20	AT	8:06A 30	8:11A 30		P
Seam Notes EOS															
5/16/20	P114	P135	10	7:58A	TV	5374	5	850		5/16/20	AT	8:08A 30	8:13A 30		P
Seam Notes EOS															
5/16/20	P211	P167	23	10:25A	KS	5375	5	850		5/16/20	AT	10:42A 30	10:47A 30		P
Seam Notes EOS															
5/16/20	P211	P168	23	10:26A	KS	5375	5	850		5/16/20	AT	10:50A 30	10:55A 30		P
Seam Notes EOS															
5/16/20	P211	P170	23	10:30A	KS	5375	5	850		5/16/20	AT	10:50A 30	10:55A 30		P
Seam Notes EOS															
5/16/20	P211	P171	23	10:34A	KS	5375	5	850		5/16/20	AT	10:50A 30	10:55A 30		P
Seam Notes EOS															
5/16/20	P211	P172	23	10:38A	KS	5375	5	850		5/16/20	AT	10:50A 30	10:55A 30		P
Seam Notes EOS															
5/16/20	P211	P174	23	10:42A	KS	5375	5	850		5/16/20	AT	10:50A 30	10:55A 30		P
Seam Notes EOS															
5/16/20	P211	P189	14	10:43A	KS	5375	5	850		5/16/20	AT	10:50A 30	10:55A 30		P
Seam Notes EOS															
5/16/20	P211	P190	9	10:44A	KS	5375	5	850		5/16/20	AT	10:50A 30	10:55A 30		P

Seam Control Form

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By

Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/16/20	P190	P212	9	10' 46A	KS	5375	5	850		5/16/20	AT	10' 50A 30	10' 55A 30		P
Seam Notes EOS															
5/16/20	P191	P212	14	10' 47A	KS	5375	5	850		5/16/20	AT	10' 50A 30	10' 55A 30		P
Seam Notes EOS															
5/16/20	P211	P212	138	10' 18A	TV	5374	7	850		5/16/20	AT	9' 34A 30	9' 39A 30		P
Seam Notes EOS															
5/16/20	P212	P213	146	11' 04A	TV	5374	7	850		5/16/20	AT	11' 15A 30	11' 20A 30		P
Seam Notes EOS															
5/16/20	P209	P211	8	10' 45A	TV	5374	7	850		5/16/20	AT	10' 55A 30	11' 00A 30		P
Seam Notes EOS															
5/16/20	P208	P211	15	10' 44A	TV	5374	7	850		5/16/20	AT	10' 55A 30	11' 00A 30		P
Seam Notes EOS															
5/16/20	P208	P212	8	10' 42A	TV	5374	7	850		5/16/20	AT	10' 55A 30	11' 00A 30		P
Seam Notes EOS															
5/16/20	P207	P212	15	10' 41A	TV	5374	7	850		5/16/20	AT	10' 55A 30	11' 00A 30		P
Seam Notes EOS															
5/16/20	P191	P213	9	11' 05A	KS	5375	5	850		5/16/20	AT	11' 10A 30	11' 15A 30		P
Seam Notes EOS															
5/16/20	P197	P213	9	11' 06A	KS	5375	5	850		5/16/20	AT	11' 10A 30	11' 15A 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI	Test Results
												PSI IN	PSI OUT	Loss	
5/16/20	P206	P213	15	11' 15A	TV	5374	7	850		5/16/20	AT	11' 20A 30	11' 25A 30		P
Seam Notes EOS															
5/16/20	P207	P213	8	11' 16A	TV	5374	7	850		5/16/20	AT	11' 20A 30	11' 25A 30		P
Seam Notes EOS															
5/18/20	P214	P215	156	10' 53A	TV	5374	7	850		5/18/20	AT	11' 17A 30	11' 22A 30		P
Seam Notes EOS															
5/18/20	P215	P216	71	11' 20A	KS	5375	7	850		5/18/20	AT	11' 52A 30	11' 57A 30		P
Seam Notes EOS															
5/18/20	P215	P217	87	11' 27A	KS	5375	7	850		5/18/20	AT	11' 52A 30	11' 57A 30		P
Seam Notes EOS															
5/18/20	P216	P217	23	11' 30A	KS	5375	7	850		5/18/20	AT	11' 38A 30	11' 43A 30		P
Seam Notes EOS															
5/18/20	P216	P218	70	11' 40A	KS	5375	7	850		5/18/20	AT	1' 08P 30	1' 13P 30		P
Seam Notes EOS															
5/18/20	P217	P218	31	11' 50A	KS	5375	7	850		5/18/20	AT	1' 08P 30	1' 13P 30		P
Seam Notes EOS															
5/18/20	P217	P219	54	11' 55A	KS	5375	7	850		5/18/20	AT	1' 08P 30	1' 13P 30		P
Seam Notes EOS															
5/18/20	P218	P219	23	11' 35A	TV	5375	7	850		5/18/20	AT	1' 20P 30	1' 25P 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By: Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/18/20	P218	P220	112	11:46A	TV	5374	7	850	5/18/20	AT	11:11A	11:16A	30	P
Seam Notes EOS														
5/18/20	P219	P220	55	12:00P	TV	5374	7	850	5/18/20	AT	11:11A	11:16A	30	P
Seam Notes EOS														
5/18/20	P104	P214	23	2:03P	KS	5375	7	850	5/18/20	AT	2:45P	2:50P	30	P
Seam Notes EOS														
5/18/20	P104	P215	23	2:06P	KS	5375	7	850	5/18/20	AT	2:45P	2:50P	30	P
Seam Notes EOS														
5/18/20	P104	P216	23	2:09P	KS	5375	7	850	5/18/20	AT	2:45P	2:50P	30	P
Seam Notes EOS														
5/18/20	P104	P218	23	2:12P	KS	5375	7	850	5/18/20	AT	2:50P	2:55P	30	P
Seam Notes EOS														
5/18/20	P104	P220	12	2:15P	KS	5375	7	850	5/18/20	AT	2:36P	2:41P	30	P
Seam Notes EOS														
5/18/20	P103	P220	11	2:00P	KS	5375	7	850	5/18/20	AT	2:15P	2:20P	30	P
Seam Notes EOS														
5/18/20	P220	P198	23	2:03P	TV	5374	7	850	5/18/20	AT	2:31P	2:36P	30	P
Seam Notes EOS														
5/18/20	P220	P199	23	2:06P	TV	5374	7	850	5/18/20	AT	2:31P	2:36P	30	P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/18/20	P220	P200	23	06P	5374	7	850		5/18/20	AT	2' 31P 30	2' 36P 30		P
Seam Notes EOS														
5/18/20	P220	P201	23	TV	5374	7	850		5/18/20	AT	2' 31P 30	2' 36P 30		P
Seam Notes EOS														
5/18/20	P220	P202	23	TV	5374	7	850		5/18/20	AT	2' 31P 30	2' 36P 30		P
Seam Notes EOS														
5/18/20	P220	P203	23	TV	5374	7	850		5/18/20	AT	2' 31P 30	2' 36P 30		P
Seam Notes EOS														
5/18/20	P220	P204	23	TV	5374	7	850		5/18/20	AT	2' 31P 30	2' 36P 30		P
Seam Notes EOS														
5/18/20	P213	P221	150	TV	5374	7	850		5/18/20	AT	3' 03P 30	3' 08P 30		P
Seam Notes EOS														
5/18/20	P221	P222	150	KS	5375	7	850		5/18/20	AT	3' 06P 30	3' 11P 30		P
Seam Notes EOS														
5/18/20	P222	P223	46	KS	5375	7	850		5/18/20	AT	3' 12P 30	3' 17P 30		P
Seam Notes EOS														
5/18/20	P98	P223	23	KS	5375	7	850		5/18/20	AT	3' 26P 30	3' 31P 30		P
Seam Notes EOS														
5/18/20	P99	P223	23	KS	5375	7	850		5/18/20	AT	3' 26P 30	3' 31P 30		P

Global Container Solutions, LLC
Seam Control Form

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Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 PSI

Job Description:

Pond

Air Pressure Hold Time 5 Minutes

Reported By: Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/18/20	P222	P214	23	3' 25P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P222	P215	23	3' 28P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P222	P217	23	3' 31P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P222	P219	23	3' 34P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P222	P220	23	3' 37P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P204	P222	5	3' 40P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P205	P222	7	3' 41P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P205	P221	15	3' 42P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P206	P221	7	3' 43P	TV	5374	7	850	5/18/20	AT	3' 42P 30	3' 47P 30		P
Seam Notes EOS														
5/18/20	P214	P223	10	3' 20P	KS	5374	7	850	5/18/20	AT	3' 29P 30	3' 34P 30		P

Global Container Solutions, LLC
Seam Control Form

Page 50

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Cell

Air Pressure Test 30 **PSI**

Job Description:

Pond

Air Pressure Hold Time 5 **Minutes**

Reported By Nalilath sysavath

Other

Cap

Allowable Air Pressure Loss 2 **PSI**

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In PSI IN	AT Time Out PSI OUT	PSI Loss	Test Results
5/19/20	P90	P224	10	9:43A	TV	5374	7	850	5/19/20	AT	10:21A	10:26A		P
Seam Notes EOS														
5/19/20	P89	P224	216	9:44A	TV	5374	7	850	5/19/20	AT	10:21A	10:26A		P
Seam Notes EOS														
5/19/20	P224	P225	226	9:45A	KS	5375	7	850	5/19/20	AT	10:20A	10:25A		P
Seam Notes EOS														
5/19/20	P225	P226	226	10:20A	TV	5374	7	850	5/19/20	AT	10:55A	11:00A		P
Seam Notes EOS														
5/19/20	P226	P197	226	10:20A	KS	5375	7	850	5/19/20	AT	10:56A	11:01A		P
Seam Notes EOS														
5/19/20	P223	P224	12	11:01A	TV	5374	5	850	5/19/20	AT	11:13A	11:18A		P
Seam Notes EOS														
5/19/20	P222	P224	11	11:03A	TV	5374	5	850	5/19/20	AT	11:13A	11:18A		P
Seam Notes EOS														
5/19/20	P222	P225	13	11:05A	TV	5374	5	850	5/19/20	AT	11:13A	11:18A		P
Seam Notes EOS														
5/19/20	P221	P225	10	11:07A	TV	5374	5	850	5/19/20	AT	11:13A	11:18A		P
Seam Notes EOS														
5/19/20	P221	P226	14	11:09A	TV	5374	5	850	5/19/20	AT	11:13A	11:18A		P

Global Container Solutions, LLC
Seam Control Form

Page 51

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By: Nalilath sysavath

Primary Layer

Cell

Pond X

Other

Cap

Air Pressure Test 30 PSI

Air Pressure Hold Time 5 Minutes

Allowable Air Pressure Loss 2 PSI

Weld Date	Seam No.		Seam Length	Time Welded	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Test Date	Test Type	AT Time In	AT Time Out	PSI Loss	Test Results
												PSI IN	PSI OUT		
5/19/20	P213	P226	9	11:11A	TV	5374	5	850		5/19/20	AT	11:13A 30	11:18A 30		P
Seam Notes EOS															
5/6/20	P115	P116	23	4:45P	TV	5374	5	850		5/20/20	AT	7:55A 30	8:00A 30		P
Seam Notes EOS															
											AT	30	30		P
Seam Notes EOS															
											AT	30	30		P
Seam Notes EOS															
											AT	30	30		P
Seam Notes EOS															
											AT	30	30		P
Seam Notes EOS															
											AT	30	30		P
Seam Notes EOS															
											AT	30	30		P
Seam Notes EOS															
											AT	30	30		P
Seam Notes EOS															
											AT	30	30		P

Field Destructive Testing Forms

Global Container Solutions, LLC
Destructive Sample Information

Page 1 of 1

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Job Description: _____

Reported By Nalilath Sysavath

Other _____

Cell	
Pond	X
Cap	

Peel Test Extrusion Minimum 78 PPI

Peel Test Fusion Minimum 91 PPI

Shear Test Minimum 120 PPI

D.S. No.	Seam No.		Weld Date	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp		Coupon 1 A B	Coupon 2 A B	Coupon 3 A B	Coupon 4 A B	Coupon 5 A B	Test Results
1	P3	P5	4/24/20	KP	5375	7	850		Peel Shear	119 : 151 204	151 : 168 212	122 : 124 216	110 : 141 214	125 : 137 209	P
	DS Location and Notes		N 150												
2	P6	P7	4/24/20	KP	5375	7	850		Peel Shear	118 : 149 207	150 : 141 204	154 : 94 213	94 : 149 206	142 : 142 208	P
	DS Location and Notes		N 55												
3	P12	P13	4/24/20	KS	5374	7	850		Peel Shear	135 : 159 207	127 : 163 199	165 : 131 212	151 : 140 205	153 : 144 200	P
	DS Location and Notes		W 35												
4	P19	P20	4/25/20	KS	5374	7	850		Peel Shear	151 : 128 213	121 : 126 204	122 : 158 199	132 : 157 209	126 : 135 212	P
	DS Location and Notes		W 145												
5	P20	P21	4/25/20	KP	5375	7	850		Peel Shear	160 : 176 226	158 : 133 226	171 : 173 232	158 : 155 228	131 : 128 227	P
	DS Location and Notes		W 105												
6	P23	P24	4/25/20	KP	5375	7	850		Peel Shear	135 : 151 216	152 : 121 216	132 : 139 218	142 : 123 215	118 : 118 207	P
	DS Location and Notes		W 37												
7	P27	P28	4/27/20	KP	5375	7	850		Peel Shear	134 : 140 201	150 : 148 206	135 : 156 206	129 : 144 206	152 : 151 201	P
	DS Location and Notes		W 37												
8	P30	P31	4/27/20	KS	5374	7	850		Peel Shear	126 : 109 214	113 : 137 209	155 : 152 212	152 : 151 210	160 : 130 206	P
	DS Location and Notes		W 100												
9	P32	P34	4/27/20	KS	5374	7	850		Peel Shear	130 : 137 211	128 : 122 211	129 : 138 218	112 : 148 218	118 : 109 210	P
	DS Location and Notes		W 35												
10	P36	P37	4/27/20	KP	5375	7	850		Peel Shear	144 : 119 203	148 : 119 201	147 : 134 202	127 : 140 205	144 : 110 199	P
	DS Location and Notes		W 10												

Page 2 of

Superintendent: Eddie Keodouangsy

Primary Layer

Cell	
Pond	X
Cap	

Peel Test Fusion Minimum	91	PPI
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Other

Shear Test	Minimum	120	PPI
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Rev 2-26-10

Global Container Solutions, LLC
Destructive Sample Information

Page 3 of

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Job Description:

Reported By Nalilath Sysavath

Primary Layer

Other

Cell

Pond

Cap

Peel Test Extrusion Minimum 78 PPI

Peel Test Fusion Minimum 91 PPI

Shear Test Minimum 120 PPI

D.S. No.	Seam No.	Weld Date	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp		Coupon 1 A B	Coupon 2 A B	Coupon 3 A B	Coupon 4 A B	Coupon 5 A B	Test Results
21	P74 P75	5/1/20	TV	5374	7	850		Peel Shear	125 112 181	114 112 173	143 124 177	124 115 175	120 101 178	P
	DS Location and Notes W 110													
22	P79 P80	5/4/20	TV	5374	7	850		Peel Shear	139 118 183	139 114 179	110 141 179	118 138 192	115 135 173	P
	DS Location and Notes S 40													
23	P83 P85	5/4/20	TV	5374	7	850		Peel Shear	134 123 188	116 124 184	133 119 185	118 121 183	112 114 182	P
	DS Location and Notes S 155													
24	P1 P91	5/4/20	TV	5374	7	850		Peel Shear	129 125 176	118 138 174	125 126 178	126 116 177	124 133 176	P
	DS Location and Notes W 185													
25	P94 P96	5/4/20	KS	5375	7	850		Peel Shear	120 130 178	121 115 175	131 127 181	118 127 178	126 145 178	P
	DS Location and Notes W 190													
26	P100 P101	5/5/20	KS	5375	7	850		Peel Shear	113 141 176	107 119 172	123 144 177	120 124 175	114 113 154	P
	DS Location and Notes W 310													
27	P100 P103	5/5/20	TV	5374	7	850		Peel Shear	122 107 169	115 107 164	130 111 167	120 105 168	128 108 167	P
	DS Location and Notes W 25													
28	P111 P112	5/6/20	TV	5374	7	850		Peel Shear	133 165 219	135 145 221	123 122 225	133 171 225	122 125 223	P
	DS Location and Notes W 27													
29	P121 P122	5/6/20	TV	5374	7	850		Peel Shear	134 120 231	126 122 221	143 111 230	131 140 231	132 125 222	P
	DS Location and Notes W 80													
30	P135 P137	5/8/20	KS	5375	7	850		Peel Shear	137 133 197	123 129 191	137 123 198	124 115 193	126 115 191	P
	DS Location and Notes N 35													

Global Container Solutions, LLC
Destructive Sample Information

Page 4 of

Project Name: Xcel - Sherco Bottom Ash Pond 2

Job # 19-07-1083

Superintendent: Eddie Keodouangsy

Material Type: 60 Mil

Primary Layer

Job Description:

Reported By Nalilath Sysavath

Other

Cell	
Pond	X
Cap	

Peel Test Extrusion Minimum 78

Peel Test Fusion Minimum 91 **PPI**

Shear Test Minimum 120 **PPI**

D.S. No.	Seam No.	Weld Date	Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp		Coupon 1 A B	Coupon 2 A B	Coupon 3 A B	Coupon 4 A B	Coupon 5 A B	Test Results
31	P145 P147	5/11/20	KS	5375	7	850		Peel Shear	147 145 192	141 140 191	139 154 194	133 132 192	145 133 184	P
	DS Location and Notes N 110													
32	P158 P160	5/11/20	TV	5374	7	850		Peel Shear	140 118 198	136 136 191	138 142 194	130 108 190	124 136 198	P
	DS Location and Notes S 5													
33	P170 P171	5/12/20	KS	5375	7	850		Peel Shear	134 117 194	125 108 189	124 134 191	114 107 187	116 125 188	P
	DS Location and Notes N 25													
34	P188 P189	5/13/20	KS	5375	7	850		Peel Shear	128 116 163	119 98 159	113 126 161	111 103 154	110 106 152	P
	DS Location and Notes W 10													
35	P199 P200	5/15/20	TV	5374	7	850		Peel Shear	116 119 154	109 110 152	112 122 150	103 105 147	102 108 144	P
	DS Location and Notes W 300													
36	P203 P204	5/15/20	KP	5373	7	850		Peel Shear	116 122 162	110 108 157	119 106 162	111 116 159	105 92 150	P
	DS Location and Notes W 85													
37	P206 P207	5/15/20	KS	5375	7	850		Peel Shear	109 105 172	103 98 158	113 102 170	96 99 163	98 100 157	P
	DS Location and Notes W 70													
38	P211 P212	5/16/20	TV	5374	7	850		Peel Shear	108 129 161	101 110 161	106 127 159	101 118 159	109 96 158	P
	DS Location and Notes E 105													
39	P222 P223	5/18/20	KS	5375	7	850		Peel Shear	108 114 169	113 111 161	116 133 172	121 119 164	115 104 159	P
	DS Location and Notes W 6													
40	P225 P226	5/19/20	TV	5374	7	850		Peel Shear	129 123 168	132 117 161	133 110 159	115 112 163	120 128 153	P
	DS Location and Notes E 185													

Lab Destructive Testing Forms



Date: 2020-05-04

Mail To:
Steve Bluhm
Xcel Energy
13999 Industrial Blvd
Becker, MN, 55308

Bill To:

Xcel Energy

e-mail:
Steven.l.bluhm@xcelenergy.com driggs@carlsonmccain.com

Dear Mr. Bluhm,

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: **Xcel Energy BA Pond 2**

TRI Job Reference Number: **55599**

Material(s) Tested: (5) 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,

Jarret Nelson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Xcel Energy

Project: Xcel Energy BA Pond 2

Material: 60 mil. HDPE

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

TRI Log#: 55599

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-1 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	144	159	133	152	147	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	
Side: B						Peel B
Peel Strength (ppi)	118	125	121	119	121	121
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	180	183	184	186	189	184
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-2 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	151	150	153	143	145	148
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	121	147	123	164	159	143
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	177	178	179	185	183	180
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

TRI ENVIRONMENTAL, INC.

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



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Xcel Energy

Project: Xcel Energy BA Pond 2

Material: 60 mil. HDPE

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

TRI Log#: 55599

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-3 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	135	136	138	133	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)	147	142	144	142	144	144
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	180	179	180	183	185	181
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-4 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	133	130	131	150	129	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)	135	154	150	151	157	149
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	176	176	175	180	180	177
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.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Xcel Energy

Project: Xcel Energy BA Pond 2

Material: 60 mil. HDPE

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

TRI Log#: 55599

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-5 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	148	160	149	152	143	150
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	152	130	158	134	159	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)	191	190	191	196	194	192
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

TRI ENVIRONMENTAL, INC.

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



Date: 2020-05-14

Mail To:
Steve Bluhm
Xcel Energy
13999 Industrial Blvd
Becker, MN, 55308

Bill To:

Xcel Energy

e-mail:
Steven.l.bluhm@xcelenergy.com driggs@carlsonmccain.com

Dear Mr. Bluhm,

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: **Xcel Energy BA Pond 2**

TRI Job Reference Number: **55891**

Material(s) Tested: (2) Heat Fusion Weld Seam(s)

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

Codes:

AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

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

Jarret Nelson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Xcel Energy

Project: Xcel Energy BA Pond 2

Material: 60 mil. HDPE

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

TRI Log#: 55891

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-28 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	134	135	129	133	133	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)	145	124	145	148	145	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)	178	180	174	176	177	177
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-29 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	136	134	137	135	137	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)	140	139	152	141	153	145
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	174	175	180	180	176	177
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

Repair Forms

Page 1 of

Job # : 19-07-1083

Superintendent: Eddie Keodouangsy

Cell ☐ Cap ☐

Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
1	SJ			P3-P4-P5	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
2	SJ			P4-P5-P6	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
3	BO	P3-P4		W Ach	P	2	x	4		4/30/20	KS	566	VT	P	5/7/20
4	DO		P15	E6,S1	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
5	SJ			P13-P14-P15	P	2	x	3		4/30/20	KS	566	VT	P	5/7/20
6	SJ			P12-P13-P14	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
7	BO	P12-P19		W 40	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
8	SJ			P11-P17-P18	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
9	SJ			P10-P11-P17	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
10	SJ			P10-P16-P17	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
11	SJ			P9-P10-P16	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
12	SJ			P9-P15-P16	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
13	SJ			P8-P9-P15	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
14	SJ			P8-P13-P15	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
15	SJ			P7-P8-P13	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
16	SJ			P7-P12-P13	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
17	SJ			P6-P7-P12	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
18	SJ			P6-P12-P19	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
19	SJ			P5-P6-P19	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
20	SJ			P5-P19-P20	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20

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Job # : 19-07-1083

Superintendent: Eddie Keodouangsy

Cell ☐ Cap ☐

Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
21	SJ			P3-P5-P20	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
22	DS	P6-P7		N 55	P	2	x	4		4/30/20	KS	566	VT	P	5/7/20
23	DS	P3-P5		N 150	P	2	x	4		4/30/20	KS	566	VT	P	5/7/20
24	DS	P12-P13		W 35	P	2	x	4		4/30/20	KS	566	VT	P	5/7/20
25	DS	P19-P20		W 145	P	2	x	4		4/30/20	KS	566	VT	P	5/7/20
26	SJ			P21-P22-P23	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
27	SJ			P22-P23-P24	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
28	SJ			P24-P25-P26	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
29	SJ			P25-P26-P27	P	2	x	2		4/30/20	KS	566	VT	P	5/7/20
30	SJ			P28-P29-P30	P	2	x	2		4/30/20	KP	566	VT	P	5/7/20
31	SJ			P29-P30-P31	P	2	x	2		4/30/20	KP	566	VT	P	5/7/20
32	SJ			P31-P32-P33	P	2	x	2		4/30/20	KP	566	VT	P	5/7/20
33	SJ			P32-P33-P34	P	2	x	2		4/30/20	KP	566	VT	P	5/7/20
34					P		x						VT	P	
35				P38-P39-P40	P		x						VT	P	
36	DS	P20-P21		W 105	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
37	BO	P40-P41		W Ach	P	2	x	3		4/30/20	KP	566	VT	P	5/7/20
38	SJ			P41-P42-P43	P	2	x	2		4/30/20	KP	566	VT	P	5/7/20
39	SJ			P42-P43-P44	P	2	x	2		4/30/20	KP	566	VT	P	5/7/20
40	DO	P39-P40		W 105	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20

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Job # : 19-07-1083

Superintendent: Eddie Keodouangsy

Cell ☐ Cap ☐

Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
41	DO	P39-P40		W 195	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
42	BO	P47-P49		W 20	P	2	x	3		5/1/20	KP	566	VT	P	5/7/20
43	SJ			P47-P48-P49	P	2	x	2		5/1/20	KP	566	VT	P	5/7/20
44	SJ			P48-P49-P50	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
45	SJ			P53-P54-P55	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
46	SJ			P54-P55-P56	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
47	SJ			P56-P57-P58	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
48	SJ			P57-P58-P59	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
49	BO	P56-P58		W 8	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
50	DS	P23-P24		W 37	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
51	DS	P27-P28		W 37	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
52	DS	P30-P31		W 100	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
53	DS	P32-P34		W 35	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
54	DS	P36-P37		W 10	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
55	DS	P38-P39		W 55	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
56	DS	P40-P41		W 100	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
57	DS	P43-P44		W 125	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
58	DS	P45-P47		W 65	P	2	x	4		4/30/20	KP	566	VT	P	5/7/20
59	SJ			P63-P64-P65	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
60	SJ			P64-P65-P66	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20

Repair Report

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Job # : 19-07-1083

Cell Cap

Pond ☒ Other

Job Description: _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrev.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
61	BO	P64-P66		W 58	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
62	BO	P74-P75		S 10	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
63	SJ			P69-P70-P71	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
64	SJ			P68-P69-P71-P72	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
65	SJ			P67-P68-P72-P73	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
66	SJ			P66-P67-P73	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
67	SJ			P66-P73-P74	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
68	SJ			P64-P66-P74	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
69	SJ			P64-P74-P75	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
70	SJ			P63-P64-P75	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
71	DO	P72-P73		S Ach	P	2	x	5		5/2/20	KP	566	VT	P	5/7/20
72	DS	P49-P50		W 30	P	2	x	4		5/2/20	KP	566	VT	P	5/7/20
73	DS	P52-P53		W180	P	2	x	4		5/2/20	KP	566	VT	P	5/7/20
74	DS	P55-P56		W 135	P	2	x	4		5/2/20	KP	566	VT	P	5/7/20
75	DS	P57-P59		W45	P	2	x	4		5/2/20	KP	566	VT	P	5/7/20
76	BO	P77-P78		S Ach	P	2	x	4		5/4/20	KP	566	VT	P	5/7/20
77	DS	P60-P62		W 155	P	2	x	4		5/2/20	KP	566	VT	P	5/7/20
78	DS	P65-P66		W 10	P	2	x	4		5/2/20	KP	566	VT	P	5/7/20
79	DS	P74-P75		S 110	P	2	x	4		5/2/20	KP	566	VT	P	5/7/20
80	SJ			P76-P77-P78	P	2	x	2		5/4/20	KP	566	VT	P	5/7/20

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Job # : 19-07-1083

Superintendent: Eddie Keodouangsy

Cell ☐ Cap ☐

Pond	X	Other	
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Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
81	SJ			P77-P78-P79	P	2	x	2		5/4/20	KP	566	VT	P	5/7/20
82	SJ			P63-P75-P76	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
83	SJ			P62-P63-P76	P	2	x	2		5/2/20	KP	566	VT	P	5/7/20
84	SJ			P60-P62-P76-P77	P	2	x	4		5/2/20	KP	566	VT	P	5/7/20
85	SJ			P83-P84-P85	P	2	x	2		5/4/20	KP	566	VT	P	5/7/20
86	SJ			P84-P85-P86	P	2	x	2		5/4/20	KP	566	VT	P	5/7/20
87	SJ			P85-P86-P87	P	2	x	2		5/4/20	KP	566	VT	P	5/7/20
88	SJ			P86-P87-P88	P	2	x	2		5/4/20	KP	566	VT	P	5/7/20
89	SJ			P88-P89-P90	P	2	x	2		5/4/20	KP	566	VT	P	5/7/20
90	DS	P79-P80		S 40	P	2	x	4		5/4/20	KP	566	VT	P	5/7/20
91	DS	P83-P85		S 155	P	2	x	4		5/4/20	KP	566	VT	P	5/7/20
92	SJ			P94-P95-P96	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
93	SJ			P95-P96-P97	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
94	SJ			P89-P90-P98	P	2	x	2		5/5/20	KP	566	VT	P	5/7/20
95	SJ			P86-P88-P98	P	2	x	2		5/5/20	KP	566	VT	P	5/7/20
96	SJ			P84-P86-P98	P	2	x	2		5/5/20	KP	566	VT	P	5/7/20
97	SJ			P83-P84-P98	P	2	x	2		5/5/20	KP	566	VT	P	5/7/20
98	SJ			P82-P83-P98	P	2	x	2		5/5/20	KP	566	VT	P	5/7/20
99	SJ			P81-P82-P98	P	2	x	2		5/5/20	KP	566	VT	P	5/7/20
100	SJ			P80-P81-P98	P	2	x	2		5/5/20	KP	566	VT	P	5/7/20

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Job # : 19-07-1083

Superintendent: Eddie Keodouangsy

Cell ☐ Cap ☐

Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
101	SJ			P79-P80-P98	P	2	x	2		5/5/20	KP	566	VT	P	5/7/20
102	SJ			P59-P60-P77-P79-P98	P	2	x	15		5/6/20	KP	566	VT	P	5/7/20
103	DS	P1-P91		W 185	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
104	DS	P94-P96		W 190	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
105	SJ			P21-P22-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
106	SJ			P22-P24-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
107	SJ			P24-P26-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
108	BO	P27-P101		W 10	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
109	SJ			P27-P28-P101	P	2	x	7		5/6/20	KP	566	VT	P	5/7/20
110	SJ			P28-P29-P101-P102	P	2	x	4		5/6/20	KP	566	VT	P	5/7/20
111	SJ			P29-P31-P102	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
112	SJ			P31-P33-P102	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
113	SJ			P33-P34-P102	P	2	x	10		5/6/20	KP	566	VT	P	5/7/20
114	SJ			P34-P101-P102	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
115	SJ			P34*-P35-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
116	SJ			P35-P36-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
117	SJ			P36-P37-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
118	SJ			P37-P38-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
119	SJ			P38-P39-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
120	SJ			P39-P40-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20

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Job # : 19-07-1083

Superintendent: Eddie Keodouangsy

Primary Layer

Cap

Pond

X

Other

Job Description:

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
121	SJ			P40-P41-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
122	SJ			P41-P42-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
123	SJ			P42-P44-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
124	SJ			P44-P45-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
125	SJ			P45-P47-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
126	SJ			P47-P48-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
127	SJ			P48-P50-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
128	SJ			P50-P51-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
129	SJ			P2-P3-P20-P21-P101	P	2	x	16		5/6/20	KP	566	VT	P	5/7/20
130	DS	P100-P101		W 310	P	2	x	4		5/6/20	KP	566	VT	P	5/7/20
131	SJ			P2-P100-P101	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
132	SJ			P1-P2-P100	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
133	SJ			P1-P100-P103	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
134	SJ			P1-P91-P103	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
135	SJ			P51-P101-P106	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
136	SJ			P51-P52-P106	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
137	SJ			P52-P53-P106	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
138	SJ			P53-P54-P106	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
139	SJ			P54-P56-P106	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
140	BO	P56-P106		W 10	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20

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Cell ☐ Cap ☐

Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
141	SJ			P56-P57-P99-P106	P	3	x	3		5/6/20	KP	566	VT	P	5/7/20
142	SJ			P57-P59-P98-P99	P	2	x	3		5/6/20	KP	566	VT	P	5/7/20
143	SJ			P100-P101-P105-P106	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
144	SJ			P100-P103-P104-P105	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
145	SJ			P99-P104-P105	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
146	SJ			P99-P105-P106	P	2	x	2		5/6/20	KP	566	VT	P	5/7/20
147	DS	P100-P103		W 25	P	2	x	4		5/6/20	KP	566	VT	P	5/7/20
148	SJ			P108-P109-P110	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
149	SJ			P109-P110-P111	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
150	SJ			P111-P112-P113	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
151	SJ			P112-P113-P114	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
152	BO	P114-P116		W 4	P	2	x	4		5/8/20	KP	566	VT	P	5/12/20
153	DS	P111-P112		W 27	P	2	x	6		5/8/20	KP	566	VT	P	5/12/20
154	SJ			P114-P115-P116	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
155	SJ			P115-P116-P117	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
156	SJ			P122-P123-P124	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
157	SJ			P123-P124-P126	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
158	SJ			P124-P125-P126	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
159	SJ			P117-P118-P119	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
160	SJ			P118-P119-P120	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20

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Cell ☐ Cap ☐

Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrev.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
161	DS	P121-P122		W 80	P	2	x	4		5/8/20	KP	566	VT	P	5/12/20
162	SJ			P118-P120-P131	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
163	SJ			P120-P130-P131	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
164	SJ			P120-P121-P130	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
165	SJ			P121-P129-P130	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
166	SJ			P121-P122-P129	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
167	SJ			P122-P128-P129	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
168	SJ			P122-P123-P128	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
169	SJ			P123-P126-P127	P	2	x	2		5/8/20	KP	566	VT	P	5/12/20
170	SJ			P131-P132-P133	P	2	x	2		5/9/20	KP	566	VT	P	5/12/20
171	SJ			P132-P133-P134	P	2	x	2		5/9/20	KP	566	VT	P	5/12/20
172	SJ			P134-P135-P136	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
173	SJ			P135-P136-P137	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
174	SJ			P138-P139-P140	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
175	SJ			P139-P140-P141	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
176	SJ			P117-P118-P131-P132	P	2	x	6		5/9/20	KP	566	VT	P	5/12/20
177	SJ			P115-P117-P132-P134	P	2	x	3		5/9/20	KP	566	VT	P	5/12/20
178	SJ			P142-P143-P144	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
179	SJ			P143-P144-P145	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
180	DO	P143-P145		N 60	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20

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Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
181	SJ			P143-P145-P146	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
182	SJ			P145-P146-P147	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
183	SJ			P148-P149-P150	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
184	SJ			P149-P150-P151	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
185	SJ			P151-P152-P153	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
186	SJ			P152-P153-P154	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
187	SJ			P155-P156-P157	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
188	SJ			P156-P157-P158	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
189	SJ			P158-P159-P160	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
190	SJ			P159-P160-P161	P	2	x	2		5/11/20	KP	566	VT	P	5/12/20
191	SJ			P164-P165-P166	P	2	x	2		5/12/20	KP	566	VT	P	5/14/20
192	SJ			P165-P166-P167	P	2	x	2		5/12/20	KP	566	VT	P	5/14/20
193	SJ			P167-P168-P169	P	2	x	2		5/12/20	KP	566	VT	P	5/14/20
194	SJ			P168-P169-P170	P	2	x	2		5/12/20	KP	566	VT	P	5/14/20
195	BO	P167-P169		N 8	P	2	x	2		5/12/20	KP	566	VT	P	5/14/20
196	SJ			P171-P172-P173	P	2	x	2		5/12/20	KP	566	VT	P	5/14/20
197	SJ			P172-P173-P174	P	2	x	2		5/12/20	KP	566	VT	P	5/14/20
198	SJ			P174-P175-P176	P	2	x	2		5/14/20	KP	566	VT	P	5/14/20
199	SJ			P175-P176-P178	P	2	x	2		5/14/20	KP	566	VT	P	5/14/20
200	SJ			P175-P177-P178	P	2	x	2		5/13/20	KP	566	VT	P	5/14/20

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Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrev.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

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Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrev.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
221	BO	P191-P192		E Ach	P	2	x	2		5/14/20	KP	566	VT	P	5/14/20
222	SJ			P112-P207-P208	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
223	SJ			P111-P112-P207	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
224	SJ			P111-P206-P207	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
225	SJ			P109-P111-P206	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
226	SJ			P109-P205-P206	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
227	SJ			P108-P109-P205	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
228	SJ			P108-P204-P205	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
229	SJ			P107-P108-P204	P	2	x	6		5/16/20	KP	566	VT	P	5/19/20
230	SJ			P107-P203-P204	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
231	SJ			P97-P107-P203	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
232	SJ			P97-P202-P203	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
233	SJ			P96-P97-P202	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
234	SJ			P96-P201-P202	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
235	SJ			P94-P96-P201	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
236	SJ			P94-P200-P201	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
237	SJ			P93-P94-P200	P	2	x	2		5/16/20	KP	566	VT	P	5/19/20
238	SJ			P93-P199-P200	P	2	x	2		5/16/20	KP	566	VT	P	5/19/20
239	SJ			P92-P93-P199	P	2	x	2		5/16/20	KP	566	VT	P	5/19/20
240	SJ			P92-P198-P199	P	2	x	2		5/16/20	KP	566	VT	P	5/19/20

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Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrev.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
241	SJ			P208-P209-P210	P	3	x	8		5/16/20	KP	566	VT	P	5/19/20
242	SJ			P208-P209-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
243	DO		P200	W8,N11	P	2	x	6		5/18/20	KP	566	VT	P	5/19/20
244	DO		P200	W1,N11	P	2	x	4		5/18/20	KP	566	VT	P	5/19/20
245	DO		P201	W1,N11	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
246	DO		P206	W1,N11	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
247	SJ			P165-P167-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
248	SJ			P164-P165-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
249	SJ			P163-P164-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
250	SJ			P162-P263-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
251	SJ			P161-P162-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
252	SJ			P159-P161-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
253	SJ			P158-P159-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
254	SJ			P156-P158-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
255	SJ			P155-P156-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
256	SJ			P154-P155-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
257	SJ			P152-P154-P209	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
258	SJ			P151-P152-P209-P210	P	2	x	2		5/18/20	KP	KP	VT	P	5/19/20
259	SJ			P149-P151-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
260	SJ			148-P149-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20

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Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrev.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
261	SJ			P147-P148-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
262	SJ			P146-P147-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
263	SJ			P143-P146-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
264	SJ			P142-P143-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
265	SJ			P141-P142-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
266	SJ			P139-P141-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
267	SJ			P138-P139-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
268	SJ			P137-P139-P210	P	2	x	2		5/18/20	KS	565	VT	P	5/19/20
269	SJ			P135-P137-P210	P	2	x	2		5/1/20	KS	565	VT	P	5/19/20
270	SJ			P114-P135-P210	P	2	x	2		5/16/20	KP	566	VT	P	5/19/20
271	SJ			P114-P115-P134-P135	P	2	x	2		5/16/20	KP	566	VT	P	5/19/20
272	SJ			P114-P208-P210	P	3	x	3		5/16/20	KP	566	VT	P	5/19/20
273	SJ			P112-P114-P208	P	2	x	2		5/16/20	KP	566	VT	P	5/19/20
274	BO	P154-P209		E 9	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
275	BO	P162-P209		E 12	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
276	BO	P137-P210		E8	P	2	x	2		5/16/20	KP	566	VT	P	5/19/20
277	SJ			P167-P209-P211	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
278	SJ			P167-P168-P211	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
279	SJ			P168-P170-P211	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
280	SJ			P170-P171-P211	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20

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Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

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Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrv.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	LF Welded	Vacuum	*S=South	C--Cap Strip
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage		Air Pressure	*N=North	P--Patch
SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others		Spark	*W=West	B--Extrusion Bead
SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test		Air Lance	*E=East	

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
301	SJ			P99-P104-P214	P	3	x	3		5/18/20	KP	566	VT	P	5/19/20
302	SJ			P215-P216-P217	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
303	SJ			P216-P217-P218	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
304	SJ			P217-P218-P219	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
305	SJ			P218-P219-P220	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
306	SJ			P208-P209-P211	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
307	SJ			P208-P211-P212	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
308	SJ			P207-P208-P212	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
309	SJ			P207-P212-P213	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
310	SJ			P206-P207-P213	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
311	SJ			P206-P213-P221	P	2	x	6		5/18/20	KP	566	VT	P	5/19/20
312	SJ			P205-P206-P221	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
313	SJ			P205-P221-P222	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
314	SJ			P204-P205-P222	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
315	SJ			P219-P220-P222	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
316	SJ			P217-P219-P222	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
317	SJ			P215-P217-P222	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
318	SJ			P214-P215-P222	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
319	SJ			P204-P220-P222	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
320	SJ			P214-P222-P223	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20

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Pond ☒ Other _____

Pond ☒ Other _____

Damage Codes	BO --Burn Out	PB --Pipe Boot	CF --Custom Fit	SF Patch Material	Test Type	Abbrev.	Repair Types
	CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	Vacuum	*S=South	C--Cap Strip
	DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage	Air Pressure	*N=North	P--Patch
	SI --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others	Spark	*W=West	B--Extrusion Bead
	SJ --Seam Joint	AO --Add On	FM --Fishmouth	AT --Air test	Air Lance	*E=East	
				LF Welded			

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)			Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
321	SJ			P99-P214-P223	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
322	SJ			P98-P99-P223	P	2	x	2		5/18/20	KP	566	VT	P	5/19/20
323	DS	P135-P137		N 35	P	2	x	4		5/18/20	KS	565	VT	P	5/19/20
324	DS	P145-P147		N 110	P	2	x	4		5/18/20	KS	565	VT	P	5/19/20
325	DS	P158-P160		S 5	P	2	x	4		5/18/20	KS	565	VT	P	5/19/20
326	DS	P170-P171		N 25	P	2	x	4		5/18/20	KS	565	VT	P	5/19/20
327	SJ			P197-P213-P226	P	3	x	3		5/19/20	KS	565	VT	P	5/19/20
328	SJ			P213-P221-P226	P	2	x	2		5/19/20	KS	565	VT	P	5/19/20
329	SJ			P221-P225-P226	P	2	x	2		5/19/20	KS	565	VT	P	5/19/20
330	SJ			P221-P222-P225	P	2	x	2		5/19/20	KS	565	VT	P	5/19/20
331	SJ			P222-P224-P225	P	2	x	2		5/19/20	KS	565	VT	P	5/19/20
332	SJ			P222-P223-P224	P	2	x	2		5/19/20	KS	565	VT	P	5/19/20
333	SJ			P90-P98-P223-P224	P	3	x	3		5/19/20	KS	565	VT	P	5/19/20
334	SJ			P89-P90-P224	P	2	x	2		5/19/20	KS	565	VT	P	5/19/20
335	DS	P188-P189		W 10	P	2	x	4		5/19/20	KS	565	VT	P	5/19/20
336	DS	P199-P200		W 300	P	2	x	4		5/19/20	KS	565	VT	P	5/19/20
337	DS	P203-P204		W 85	P	2	x	4		5/19/20	KS	565	VT	P	5/19/20
338	DS	P206-P207		W 70	P	2	x	4		5/19/20	KS	565	VT	P	5/19/20
339	DS	P211-P212		E 105	P	2	x	4		5/19/20	KS	565	VT	P	5/19/20
340	DS	P222-P223		W 6	P	2	x	4		5/19/20	KS	565	VT	P	5/19/20

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Pond ☒ **Other**

Job Description:

[illegible]