



Date: 3/4/2014

Purchase Order:

ORDER NUMBER: 000302160

Waste Services

St. Cloud, FL 34773

mkaiser@wasteservicesinc.com; abrantley@brantleyeng.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Eaaste Services.

The enclosed data package includes results of all the MQC tests required by ASTM D5889, with the exception of index flux/hydraulic conductivity. This test, which is run according to ASTM D5887, is normally performed once per production lot (once per week), unless a higher frequency is required by the project specifications. Because of the GCL's low permeability, this test can take several weeks to complete. The index flux/hydraulic conductivity results associated with this lot of material will be provided under separate cover as soon as they are available.

Although the index flux/hydraulic conductivity test results are not yet available, CETCO accepts responsibility for our GCL should the index flux/hydraulic conductivity tests produce unacceptable results. If, upon delivery and prior to installation, individual rolls of GCL are found to be nonconforming to accepted project specifications, CETCO will replace the nonconforming material at no charge.

Questions regarding this information should be directed to Chris Athanassopoulos, Technical Support Engineer, at (847) 851-1831.

Sincerely,

A handwritten signature in black ink, appearing to read 'Roger B. Wilkerson', followed by a horizontal line.

Roger B. Wilkerson
Quality Assurance Coordinator
CETCO Lovell Plant



**GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE**

PROJECT NAME: Jed LF Cell 10

CUSTOMER P.O.:

ORDER NUMBER: 000302160

PREPARED FOR: Waste Services

CONTENTS:

- Product Certifications
- GCL Order packing list and MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Roger B. Wilkerson
Quality Assurance Coordinator
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Lovell, WY 82431
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E-Mail: rwilke@cetco.com



PRODUCT CERTIFICATIONS

PROJECT NAME: Jed LF Cell 10
CUSTOMER P.O.:
ORDER NUMBERS: 000302160
PREPARED FOR: Waste Services

The GCL manufactured for the above-referenced order number(s) is certified to meet the values listed in the tables below:

GCL PROPERTY SPECIFICATIONS FOR BENTOMAT ST

Test Method	Test Method Property	Test Frequency	Certified Value
ASTM D 5891	Bentonite Fluid Loss	1 per 50 Tons	18 ml Max
ASTM D 5993	Bentonite Mass/Area	40,000 sq ft (4000 sq m)	0.75 lb /sq ft Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 6768	GCL Tensile Strength	200,000 sq ft (20,000 sq m)	30 lbs/in MARV
ASTM D 6243	GCL Hydrated Internal Shear Strength	Periodic	500 psf typ @ 200 psf normal load
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5.0E-9 cm/s Max
ASTM D 5887	GCL Index Flux	Weekly	1.0E-8 m3/m2/s Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	3.5 lbs/in Min

SPECIALLY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 5887	GCL Hydraulic Conductivity	100,000 sqft	5.0E-9 cm/s	Standard
ASTM D 6768	GCL Tensile Strength	45,000 sqft	Report	Standard
ASTM D4632*	Grab Strength*modified with 4-inch grips	45,000 sqft	90 lbs (min)	Modified
ASTM D 4643	Bentonite Moisture Content	45,000 sqft	35 % (max)	Standard
ASTM D4632*	Peel Strength*modified with 4-inch grips	Standard	Report	Modified

Bentonite property tests are performed at a bentonite processing facility before shipment to CETCO's production facility.

All tensile testing is in the machine direction using ASTM D 6768. All peel strength testing is performed using ASTM D 6496. Upon request tensile and peel results can be reported per modified ASTM D 4632 using 4 inch grips. Bentonite moisture (D4643) is measured at the same time as Bentonite Mass/Area (D5993)

NEEDLE DETECTION AND REMOVAL PROCEDURE

CETCO hereby affirms that all Bentomat[®] geosynthetic clay liner material manufactured for this project is continually passed under a magnet for needle removal and then screened with a metal detection device. CETCO certifies Bentomat[®] to be essentially free of broken needles and fragments of needles that would negatively effect the performance of the final product.

Roger B. Wilkerson
Quality Assurance Coordinator



GCL PACKING LIST AND MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 000302160

GCL								Geotextiles				Clay
LO-BENTOMAT ST								N/W-WHITE			LO-WOVEN-ST	LO-CG 50
Order	GCL Lot #	GCL Roll #	Length	Width	weight	sq ft	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
000302160	201409LO	564	120	15	2820	2250	564	2023091866			2023137458	022114F
000302160	201409LO	565	120	15	2820	2250	564	2023091866			2023137458	022114F
000302160	201409LO	566	120	15	2770	2250	564	2023091866			2023009895	022114F
000302160	201409LO	567	120	15	2815	2250	564	2023091866			2023009895	022114F
000302160	201409LO	568	120	15	2840	2250	564	2023091866			2023009895	022114F
000302160	201409LO	569	120	15	2875	2250	564	2023091866			2023009895	022114F
000302160	201409LO	570	120	15	2900	2250	564	2023091866			2023009895	022114F
000302160	201409LO	571	120	15	2870	2250	564	2023091908			2023009895	022114F
000302160	201409LO	572	120	15	2860	2250	564	2023091908			2023009895	022114F
000302160	201409LO	573	120	15	2895	2250	564	2023091908			2023009895	022114F
000302160	201409LO	574	120	15	2870	2250	564	2023091908			2023009895	022114F
000302160	201409LO	575	120	15	2870	2250	564	2023091908			2023009895	022114F
000302160	201409LO	576	120	15	2845	2250	564	2023091908			2023009895	022114F
000302160	201409LO	577	120	15	2870	2250	564	2023091908			2023009895	022114F
000302160	201409LO	578	120	15	2825	2250	564	2023091908			2023009895	022114F
000302160	201409LO	579	120	15	2850	2250	564	2023189698			2023009895	022114F
000302160	201409LO	580	120	15	2845	2250	564	2023189698			2023009895	022114F
000302160	201409LO	581	120	15	2845	2250	581	2023189698			2023009895	022114F
000302160	201409LO	582	120	15	2810	2250	581	2023189698			2023009895	022114F
000302160	201409LO	583	120	15	2855	2250	581	2023189698			2023009895	022114F
000302160	201409LO	584	120	15	2820	2250	581	2023189698			2023009895	022114F
000302160	201409LO	585	120	15	2825	2250	581	2023189698			2023009895	022114F
000302160	201409LO	586	120	15	2825	2250	581	2023193339			2023009895	022114F
000302160	201409LO	587	120	15	2815	2250	581	2023193339			2023009895	022114F
000302160	201409LO	588	120	15	2765	2250	581	2023193339			2023009895	022114F
000302160	201409LO	589	120	15	2775	2250	581	2023193339			2023009895	022114F
000302160	201409LO	590	120	15	2750	2250	581	2023193339			2023009895	022114F
000302160	201409LO	591	120	15	2710	2250	581	2023193339			2023009895	022114F
000302160	201409LO	592	120	15	2710	2250	581	2023193339			2023009895	022114F
000302160	201409LO	593	120	15	2740	2250	581	2023189699			2023137545	022114F

000302160	201409LO	594	120	15	2680	2250	581	2023189699				2023137545	022114F
Order	GCL Lot #	GCL Roll #	Length	Width	weight	sq ft	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested		Base Roll #	Clay Lot #
000302160	201409LO	595	120	15	2725	2250	581	2023189699				2023137545	022114F
000302160	201409LO	596	120	15	2690	2250	581	2023189699				2023137545	022114F
000302160	201409LO	597	120	15	2720	2250	581	2023189699				2023042039	022114F
000302160	201409LO	598	120	15	2700	2250	598	2023189699				2023042039	022114F
000302160	201409LO	599	120	15	2725	2250	598	2023189699				2023042039	022114F
000302160	201409LO	600	120	15	2705	2250	598	2023189699				2023042039	022114F
000302160	201409LO	601	120	15	2725	2250	598	2023189753				2023042039	022114F
000302160	201409LO	602	120	15	2700	2250	598	2023189753				2023042039	022114F
000302160	201409LO	603	120	15	2700	2250	598	2023189753				2023042039	022114F
000302160	201409LO	604	120	15	2725	2250	598	2023189753				2023042039	022114F
000302160	201409LO	605	120	15	2690	2250	598	2023189753				2023042039	022114F
000302160	201409LO	606	120	15	2700	2250	598	2023189753				2023042039	022114F
000302160	201409LO	607	120	15	2720	2250	598	2023189753				2023042039	022714A
000302160	201409LO	608	120	15	2695	2250	598	2023189751				2023042039	022714A
000302160	201409LO	609	120	15	2695	2250	598	2023189751				2023042039	022714A
000302160	201409LO	610	120	15	2705	2250	598	2023189751				2023042039	022714A
000302160	201409LO	611	120	15	2700	2250	598	2023189751				2023042039	022714A
000302160	201409LO	612	120	15	2680	2250	598	2023189751				2023042039	022714A
000302160	201409LO	613	120	15	2685	2250	598	2023189751				2023042039	022714A
000302160	201409LO	614	120	15	2715	2250	598	2023189751				2023042039	022714A
000302160	201409LO	615	120	15	2695	2250	615	2023189751				2023042039	022714A
000302160	201409LO	616	120	15	2695	2250	615	2023189750				2023042039	022714A
000302160	201409LO	617	120	15	2695	2250	615	2023189750				2023042039	022714A
000302160	201409LO	618	120	15	2685	2250	615	2023189750				2023042039	022714A
000302160	201409LO	619	120	15	2695	2250	615	2023189750				2023042039	022714A
000302160	201409LO	620	120	15	2715	2250	615	2023189750				2023042039	022714A
000302160	201409LO	621	120	15	2670	2250	615	2023189750				2023042039	022714A
000302160	201409LO	622	120	15	2680	2250	615	2023189750				2023042039	022714A
000302160	201409LO	623	120	15	2670	2250	615	2023189754				2023042040	022714A
000302160	201409LO	624	120	15	2665	2250	615	2023189754				2023042040	022714A
000302160	201409LO	625	120	15	2665	2250	615	2023189754				2023042040	022714A
000302160	201409LO	626	120	15	2665	2250	615	2023189754				2023042040	022714A
000302160	201409LO	627	120	15	2685	2250	615	2023189754				2023042040	022714A
000302160	201409LO	628	120	15	2650	2250	615	2023189754				2023042040	022714A
000302160	201409LO	629	120	15	2650	2250	615	2023189754				2023042040	022714A
000302160	201409LO	630	120	15	2680	2250	615	2023189754				2023042040	022714A
000302160	201409LO	631	120	15	2670	2250	615	2023091803				2023042040	022714A

000302160	201409LO	632	120	15	2685	2250	632	2023091803				2023042040	022714A
000302160	201409LO	633	120	15	2690	2250	632	2023091803				2023042040	022714A
Order	GCL Lot #	GCL Roll #	Length	Width	weight	sq ft	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested		Base Roll #	Clay Lot #
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000302160	201409LO	635	120	15	2665	2250	632	2023091803				2023042040	022714A
000302160	201409LO	636	120	15	2685	2250	632	2023091803				2023042040	022714A
000302160	201409LO	637	120	15	2685	2250	632	2023193317				2023042040	022714A
000302160	201409LO	638	120	15	2695	2250	632	2023193317				2023042040	022714A
000302160	201409LO	639	120	15	2680	2250	632	2023193317				2023042040	022714A
000302160	201409LO	640	120	15	2675	2250	632	2023193317				2023042040	022714A
000302160	201409LO	641	120	15	2640	2250	632	2023193317				2023042040	022714A
000302160	201409LO	642	120	15	2655	2250	632	2023193317				2023042040	022714A
000302160	201409LO	643	120	15	2625	2250	632	2023193317				2023042040	022714A
000302160	201409LO	644	120	15	2600	2250	632	2023189755				2023042040	022714A
000302160	201409LO	645	120	15	2625	2250	632	2023189755				2023042040	022714A
000302160	201409LO	646	120	15	2645	2250	632	2023189755				2023042040	022714A
000302160	201409LO	647	120	15	2670	2250	632	2023189755				2023042040	022714A
000302160	201409LO	648	120	15	2600	2250	632	2023189755				2023042040	022714A
000302160	201409LO	649	120	15	2700	2250	649	2023189755				2023042040	022714A
000302160	201409LO	650	120	15	2665	2250	649	2023189755				2023174625	022714A
000302160	201409LO	651	120	15	2685	2250	649	2023091864				2023174625	022714A
000302160	201409LO	652	120	15	2625	2250	649	2023091864				2023174625	022714B
000302160	201409LO	653	120	15	2670	2250	649	2023091864				2023174625	022714B
000302160	201409LO	654	120	15	2670	2250	649	2023091864				2023174625	022714B
000302160	201409LO	655	120	15	2645	2250	649	2023091864				2023174625	022714B
000302160	201409LO	656	120	15	2665	2250	649	2023091864				2023174625	022714B
000302160	201409LO	657	120	15	2655	2250	649	2023091864				2023174625	022714B
000302160	201409LO	658	120	15	2650	2250	649	2023189756				2023174625	022714B
000302160	201409LO	659	120	15	2635	2250	649	2023189756				2023174625	022714B
000302160	201409LO	660	120	15	2620	2250	649	2023189756				2023174625	022714B
000302160	201409LO	661	120	15	2620	2250	649	2023189756				2023174625	022714B
000302160	201409LO	662	120	15	2690	2250	649	2023189756				2023174625	022714B
000302160	201409LO	663	120	15	2675	2250	649	2023189756				2023174625	022714B
000302160	201409LO	664	120	15	2630	2250	649	2023189756				2023174625	022714B
000302160	201409LO	665	120	15	2635	2250	649	2023189752				2023174625	022714B
000302160	201409LO	666	120	15	2675	2250	666	2023189752				2023174625	022714B
000302160	201409LO	667	120	15	2635	2250	666	2023189752				2023174625	022714B
000302160	201409LO	668	120	15	2625	2250	666	2023189752				2023174625	022714B
000302160	201409LO	669	120	15	2655	2250	666	2023189752				2023174625	022714B

000302160	201409LO	670	120	15	2685	2250	666	2023189752				2023174625	022714B
000302160	201409LO	671	120	15	2650	2250	666	2023189752				2023174625	022714B
000302160	201409LO	672	120	15	2640	2250	666	2023189752				2023174625	022714B
Order	GCL Lot #	GCL Roll #	Length	Width	weight	sq ft	Roll # Tested	Cap Lot #		Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
000302160	201409LO	673	120	15	2660	2250	666	2023189757				2023174625	022714B
000302160	201409LO	674	120	15	2645	2250	666	2023189757				2023174625	022714B
000302160	201409LO	675	120	15	2645	2250	666	2023189757				MDWE026282-8	022714B
000302160	201409LO	676	120	15	2625	2250	666	2023189757				MDWE026282-8	022714B
000302160	201409LO	677	120	15	2615	2250	666	2023189757				MDWE026282-8	022714B
000302160	201409LO	678	120	15	2615	2250	666	2023189757				MDWE026282-8	022714B
000302160	201409LO	680	150	15	2640	2250	680	2023091861				MDWE026282-8	022714B
000302160	201409LO	681	150	15	2650	2250	680	2023091861				MDWE026282-8	022714B
000302160	201409LO	682	150	15	2675	2250	680	2023091861			MDWE026282-8	022714B	
000302160	201409LO	683	150	15	2675	2250	680	2023091861			MDWE026282-8	022714B	
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000302160	201409LO	697	150	15	2695	2250	697	2023193320			MDWE026282-8	022714C	
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000302160	201409LO	702	150	15	2725	2250	697	2023193319			MDWE026240-1	022714C	
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000302160	201409LO	705	150	15	2695	2250	697	2023193319			MDWE026240-1	022714C	
000302160	201409LO	706	150	15	2690	2250	697	2023193319			MDWE026240-1	022714C	
000302160	201409LO	707	150	15	2710	2250	697	2023193323			MDWE026240-1	022714C	
000302160	201409LO	708	150	15	2700	2250	697	2023193323			MDWE026240-1	022714C	

000302160	201409LO	709	150	15	2700	2250	697	2023193323				MDWE026240-1	022714C
000302160	201409LO	710	150	15	2700	2250	697	2023193323				MDWE026240-1	022714C
000302160	201409LO	711	150	15	2725	2250	697	2023193323				MDWE026240-1	022714C
000302160	201409LO	712	150	15	2720	2250	697	2023193323				MDWE026240-1	022714C
Order	GCL Lot #	GCL Roll #	Length	Width	weight	sq ft	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested		Base Roll #	Clay Lot #
000302160	201409LO	713	150	15	2700	2250	697	2023193323				MDWE026240-1	022714C
000302160	201409LO	714	150	15	2735	2250	714	2023193322				MDWE026240-1	022714C
000302160	201409LO	715	150	15	2715	2250	714	2023193322				MDWE026240-1	022714C
000302160	201409LO	716	150	15	2715	2250	714	2023193322				MDWE026240-1	022714C
000302160	201409LO	717	150	15	2730	2250	714	2023193322				MDWE026240-1	022714C
000302160	201409LO	718	150	15	2735	2250	714	2023193322				MDWE026240-1	022714C
000302160	201409LO	719	150	15	2720	2250	714	2023193322				MDWE026240-1	022714C
000302160	201409LO	720	150	15	2695	2250	714	2023193322				MDWE026240-1	022714C
000302160	201409LO	721	150	15	2690	2250	714	2023193318				MDWE026240-1	022714C
000302160	201409LO	722	150	15	2690	2250	714	2023193318				MDWE026240-1	022714C
000302160	201409LO	723	150	15	2685	2250	714	2023193318				022814AW1	022714C
000302160	201409LO	724	150	15	2680	2250	714	2023193318				022814AW1	022714C
000302160	201409LO	725	150	15	2660	2250	714	2023193318				022814AW1	022714C
000302160	201409LO	726	150	15	2660	2250	714	2023193318				022814AW1	022714C
000302160	201409LO	727	150	15	2685	2250	714	2023193318				022814AW1	022714C
000302160	201409LO	728	150	15	2660	2250	714	2023193318				022814AW1	022714C
000302160	201409LO	729	150	15	2730	2250	714	2023100720				022814AW1	022714C
000302160	201409LO	730	150	15	2650	2250	714	2023100720				022814AW1	022714C
000302160	201409LO	731	150	15	2680	2250	731	2023100720				022814AW1	022714C
000302160	201409LO	732	150	15	2690	2250	731	2023100720				022814AW1	022714C
000302160	201409LO	733	150	15	2660	2250	731	2023100720				022814AW1	022714C
000302160	201409LO	734	150	15	2695	2250	731	2023100720				022814AW1	022714C
000302160	201409LO	735	150	15	2815	2250	731	2023100720				022814AW1	022714C
000302160	201409LO	736	150	15	2885	2250	731	2023100720				022814AW1	022714C
000302160	201409LO	737	150	15	2795	2250	731	2023091800				022814AW1	022714C
000302160	201409LO	738	150	15	2810	2250	731	2023091800				022814AW1	022714D
000302160	201409LO	739	150	15	2735	2250	731	2023091800				022814AW1	022714D
000302160	201409LO	740	150	15	2765	2250	731	2023091800				022814AW1	022714D
000302160	201409LO	741	150	15	2745	2250	731	2023091800				022814AW1	022714D
000302160	201409LO	742	150	15	2760	2250	731	2023091800				022814AW1	022714D
000302160	201409LO	743	150	15	2765	2250	731	2023091824				022814AW1	022714D
000302160	201409LO	744	150	15	2710	2250	731	2023091824				022814AW1	022714D
000302160	201409LO	745	150	15	2715	2250	731	2023091824				022814AW1	022714D
000302160	201409LO	746	150	15	2730	2250	731	2023091824				022814AW1	022714D

000302160	201409LO	747	150	15	2750	2250	731	2023091824				2023137462	022714D
000302160	201409LO	748	150	15	2730	2250	748	2023091824				2023137462	022714D
000302160	201409LO	749	150	15	2745	2250	748	2023091824				2023137462	022714D
000302160	201409LO	750	150	15	2815	2250	748	2023091824				2023137462	022714D
000302160	201409LO	751	150	15	2720	2250	748	2023100716				2023137462	022714D
Order	GCL Lot #	GCL Roll #	Length	Width	weight	sq ft	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #	
000302160	201409LO	752	150	15	2705	2250	748	2023100716			2023137462	022714D	
000302160	201409LO	753	150	15	2725	2250	748	2023100716			2023137462	022714D	
000302160	201409LO	754	150	15	2730	2250	748	2023100716			2023137462	022714D	
000302160	201409LO	755	150	15	2720	2250	748	2023100716			2023137462	022714D	
000302160	201409LO	756	150	15	2720	2250	748	2023100716			2023137462	022714D	
000302160	201409LO	757	150	15	2750	2250	748	2023100716			2023137462	022714D	
000302160	201409LO	758	150	15	2755	2250	748	2023091868			2023137462	022714D	
000302160	201409LO	759	150	15	2750	2250	748	2023091868			2023137462	022714D	
000302160	201409LO	760	150	15	2735	2250	748	2023091868			2023137462	022714D	
000302160	201409LO	761	150	15	2805	2250	748	2023091868			2023137462	022714D	
000302160	201409LO	762	150	15	2730	2250	748	2023091868			2023137462	022714D	
000302160	201409LO	763	150	15	2680	2250	748	2023091868			2023137462	022714D	
000302160	201409LO	764	150	15	2680	2250	748	2023091868			2023137462	022714D	
000302160	201409LO	765	150	15	2735	2250	765	2023091868			2023137462	022714D	
000302160	201409LO	766	150	15	2670	2250	765	2023091865			2023137462	022714D	
000302160	201409LO	767	150	15	2675	2250	765	2023091865			2023137462	022714D	
000302160	201409LO	768	150	15	2650	2250	765	2023091865			2023137462	022714D	
000302160	201409LO	769	150	15	2660	2250	765	2023091865			2023137462	022714D	
000302160	201409LO	770	150	15	2645	2250	765	2023091865			2023137462	022714D	
000302160	201409LO	771	150	15	2675	2250	765	2023091865			2022997917	022714D	
000302160	201409LO	772	150	15	2635	2250	765	2023091798			2022997917	022714D	
000302160	201409LO	773	150	15	2665	2250	765	2023091798			2022997917	022714D	
000302160	201409LO	774	150	15	2635	2250	765	2023091798			2022997917	022714D	
000302160	201409LO	775	150	15	2650	2250	765	2023091798			2022997917	022714D	
000302160	201409LO	776	150	15	2640	2250	765	2023091798			2022997917	022714D	
000302160	201409LO	777	150	15	2655	2250	765	2023091798			2022997917	022714D	
000302160	201409LO	778	150	15	2660	2250	765	2023091768			2022997917	022714D	
000302160	201409LO	779	150	15	2660	2250	765	2023091768			2022997917	022714D	
000302160	201409LO	780	150	15	2670	2250	765	2023091768			2022997917	022714D	
000302160	201409LO	781	150	15	2665	2250	765	2023091768			2022997917	022714D	
000302160	201409LO	782	150	15	2720	2250	782	2023091768			2022997917	022714E	
000302160	201409LO	783	150	15	2675	2250	782	2023091768			2022997917	022714E	
000302160	201409LO	784	150	15	2680	2250	782	2023091768			2022997917	022714E	

000302160	201409LO	785	150	15	2815	2250	782	2023100705		Cap Roll #	Roll # Tested	2022997917	022714E
000302160	201409LO	786	150	15	2685	2250	782	2023100705				2022997917	022714E
000302160	201409LO	787	150	15	2685	2250	782	2023100705				2022997917	022714E
000302160	201409LO	788	150	15	2695	2250	782	2023100705				2022997917	022714E
000302160	201409LO	789	150	15	2710	2250	782	2023100705				2022997917	022714E
000302160	201409LO	790	150	15	2725	2250	782	2023100705				2022997917	022714E
Order	GCL Lot #	GCL Roll #	Length	Width	weight	sq ft	Roll # Tested	Cap Lot #				Base Roll #	Clay Lot #
000302160	201409LO	791	150	15	2695	2250	782	2023100705				2022997917	022714E
000302160	201409LO	792	150	15	2760	2250	782	2023100705				2022997917	022714E
000302160	201409LO	793	150	15	2720	2250	782	2023100712				2022997917	022714E
000302160	201409LO	794	150	15	2720	2250	782	2023100712				2022997917	022714E
000302160	201409LO	795	150	15	2725	2250	782	2023100712				022814AW2	022714E
000302160	201409LO	796	150	15	2710	2250	782	2023100712				022814AW2	022714E
000302160	201409LO	797	150	15	2720	2250	782	2023100712				022814AW2	022714E
000302160	201409LO	798	150	15	2690	2250	782	2023100712				022814AW2	022714E
000302160	201409LO	799	150	15	2715	2250	799	2023100712				022814AW2	022714E
000302160	201409LO	800	150	15	2695	2250	799	2023100712				022814AW2	022714E
000302160	201409LO	801	150	15	2710	2250	799	2023100713				022814AW2	022714E
000302160	201409LO	802	150	15	2690	2250	799	2023100713				022814AW2	022714E
000302160	201409LO	803	150	15	2685	2250	799	2023100713				022814AW2	022714E
000302160	201409LO	804	150	15	2720	2250	799	2023100713				022814AW2	022714E
000302160	201409LO	805	150	15	2700	2250	799	2023100713				022814AW2	022714E
000302160	201409LO	806	150	15	2760	2250	799	2023100713				022814AW2	022714E
000302160	201409LO	807	150	15	2805	2250	799	2023100713				022814AW2	022714E
000302160	201409LO	808	150	15	2820	2250	799	2023100719				022814AW2	022714E
000302160	201409LO	809	150	15	2760	2250	799	2023100719				022814AW2	022714E
000302160	201409LO	810	150	15	2725	2250	799	2023100719				022814AW2	022714E
000302160	201409LO	811	150	15	2715	2250	799	2023100719				022814AW2	022714E
000302160	201409LO	812	150	15	2715	2250	799	2023100719				022814AW2	022714E
Total sq ft: 558000							Total Number of Rolls Certified: 248						



GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 000302160 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength 6496	Grab 4632 Modified	Moisture	Peel 4632 Modified
ASTM Test Method:			D 5993	D 6768	D 6496	D4632*	D 4643	D4632*
Required Value:			0.75 lb /sq ft Min	30 lbs/in MARV	3.5 lbs/in Min	90 lbs (min)	35 % (max)	Report
LO-BENTOMAT ST	201409LO	564	0.93	82.7	5.5	330.9	26.4	29.8
LO-BENTOMAT ST	201409LO	581	0.97	79.6	5.5	318.5	27.3	28.8
LO-BENTOMAT ST	201409LO	598	0.93	89.0	6.9	356.2	27.5	36.1
LO-BENTOMAT ST	201409LO	615	0.94	86.3	9.3	345.0	26.9	48.9
LO-BENTOMAT ST	201409LO	632	0.88	78.0	8.4	312.1	27.7	41.5
LO-BENTOMAT ST	201409LO	649	0.84	32.5	4.6	130.4	26.7	27.7
LO-BENTOMAT ST	201409LO	666	0.84	87.1	6.5	348.5	29.1	34.3
LO-BENTOMAT ST	201409LO	680	0.91	30.2	4.8	121.1	28.7	30.1
LO-BENTOMAT ST	201409LO	697	0.83	70.4	4.7	281.7	31.0	31.8
LO-BENTOMAT ST	201409LO	714	0.90	65.4	5.6	261.8	28.6	30.7
LO-BENTOMAT ST	201409LO	731	0.87	76.8	7.6	307.2	30.3	40.9
LO-BENTOMAT ST	201409LO	748	0.85	87.9	8.5	351.7	29.2	44.2
LO-BENTOMAT ST	201409LO	765	0.90	91.7	7.8	366.7	28.4	40.3
LO-BENTOMAT ST	201409LO	782	0.84	86.5	7.4	346.1	28.4	40.1
LO-BENTOMAT ST	201409LO	799	0.84	100.6	5.9	402.2	29.7	33.0

modified ASTM D 4632 using 4 inch grips.



BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce package 000302160

has been tested by American Colloid Company and yielded the following test results.

Clay Lot #	Moist	Swell	Fluid Loss
ASTM Test Method:	D 2216	D 5890	D 5891
Required Value:	12% Max	24 ml/2g Min	18 ml Max
022114F	9.10	27.00	16.60
022714A	10.10	28.00	14.00
022714B	9.90	27.00	14.00
022714C	10.80	30.00	13.40
022714D	10.90	30.00	13.40
022714E	10.90	30.00	13.40



GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 000302160 was manufactured with geotextiles which were tested with the following results.

BASE GEOTEXTILE				COVER GEOTEXTILE			
Material	Roll Number	Mass Area oz/yd2	Grab Strength lbs	Material	Roll Number	Mass Area oz/yd2	Grab Strength lbs
PT-WBLACK	022814AW1	3.2	126.7	PPX 650	2023091768	6.8	114.9
PT-WBLACK	022814AW2	3.2	121.9	PPX 650	2023091798	7.1	159.1
PPX 82TEX	2022997917	3.4	139.0	PPX 650	2023091800	7.1	146.8
PPX 82TEX	2023009895	3.3	158.1	PPX 650	2023091803	7.1	146.8
PPX 82TEX	2023042039	3.2	148.5	PPX 650	2023091824	6.3	125.4
PPX 82TEX	2023042040	3.2	148.5	PPX 650	2023091861	7.0	140.8
PPX 82TEX	2023137458	3.4	144.7	PPX 650	2023091864	7.0	140.8
PPX 82TEX	2023137462	3.4	144.7	PPX 650	2023091865	6.7	122.9
PPX 82TEX	2023137545	3.2	163.7	PPX 650	2023091866	6.7	122.9
PPX 82TEX	2023174625	3.4	162.4	PPX 650	2023091868	6.7	122.9
MATTEX	MDWE026207-9	3.5	178.2	PPX 650	2023091908	6.5	219.2
MATTEX	MDWE026282-4	3.5	182.9	PPX 650	2023100705	6.6	144.4
				PPX 650	2023100712	6.6	146.9
				PPX 650	2023100713	6.9	140.4
				PPX 650	2023100716	6.9	140.4
				PPX 650	2023100719	7.0	157.7
				PPX 650	2023100720	7.0	157.7
				PPX 650	2023189698	6.4	127.1
				PPX 650	2023189699	6.4	127.1
				PPX 650	2023189750	6.4	127.1
				PPX 650	2023189751	6.4	127.1
				PPX 650	2023189752	6.6	157.0
				PPX 650	2023189753	6.6	157.0
				PPX 650	2023189754	6.6	157.0
				PPX 650	2023189755	6.6	157.0
				PPX 650	2023189756	6.6	157.0
				PPX 650	2023189757	6.6	137.4
				PPX 650	2023193317	6.8	153.7

PPX 650	2023193318	6.8	153.7
PPX 650	2023193319	6.8	153.7
PPX 650	2023193320	6.8	153.7
PPX 650	2023193321	6.6	143.6
PPX 650	2023193322	6.6	143.6
PPX 650	2023193323	6.6	143.6
PPX 650	2023193339	6.5	135.8

Certifications from our suppliers are on file at our production facility.

An '*' or 'PT' indicates supplier certifications were unavailable prior to shipping so testing was performed at a CETCO lab.