APPROVED
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 7/30/07 BY Grant Gale
PTO 13.04 Cell 2F

Final Certification Report

Construction Quality Assurance Services

Volume II

Scanned by	Date	Doc ID #
Grant	5/30/07	RCO2853

Cell 2F Construction
Charlotte Motor Speedway Landfill V
Charlotte, North Carolina

Prepared For:

ALLIED WASTE

Prepared by:

ACC
of NORTH CAROLINA, LLC

MAY 2007

ACC of NORTH CAROLINA, LLC

APPENDIX H

Manufacturer's Quality Control Certificates

ACC of NORTH CAROLINA, LLC

SECTION H-1
Geomembrane

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quality certificate

ROLL # **446719-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.58	mm	62	mil
	MAX:	1.82	mm	72	mil
Asperity GRI GM12: 28 mil	AVE:	1.68	mm	66	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.10	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	29	N/mm	163	ppi	2,465	psi
	Average Strength @ Break	35	N/mm	201	ppi	3,043	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.95	
Lo = 2.0" Break	Average Elongation @ Break	%				496.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	262.5	N			59.005	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	436.8	N			98.208	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.0	N			132.86	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
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ROLL # **446720-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.49	mm	59	mil
	MAX:	1.79	mm	70	mil
Asperity GRI GM12: 36 mil	AVE:	1.60	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.10	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi	2,465	psi
	Average Strength @ Break	34	N/mm	192	ppi	3,043	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.95	
Lo = 2.0" Break	Average Elongation @ Break	%				496.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	262.5	N			59.005	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	436.8	N			98.208	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.0	N			132.86	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

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ROLL # **446721-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.46	mm	57	mil
	MAX:	1.75	mm	69	mil
Asperity GRI GM12: 26 mil	AVE:	1.58	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

							TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc					**.946**
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min					**.28**
Carbon Black Content ASTM D4218	Range	%					**2.10**
Carbon Black Dispersion ASTM D5596	Category						**1**
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**153**	ppi	**2,465**	psi
	Average Strength @ Break	**33**	N/mm	**189**	ppi	**3,043**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.95**	
Lo = 2.0" Break	Average Elongation @ Break	%				**496.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**262.5**	N			**59.005**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**436.8**	N			**98.208**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.0**	N			**132.86**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

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ROLL # **446722-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.48	mm	58	mil
	MAX:	1.74	mm	69	mil
Asperity GRI GM12: 35 mil	AVE:	1.57	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

							TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc					.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min					.28	
Carbon Black Content ASTM D4218	Range	%					2.41	
Carbon Black Dispersion ASTM D5596	Category						1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	147	ppi		2,379	psi
	Average Strength @ Break	36	N/mm	208	ppi		3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	%					17.98	
	Average Elongation @ Break	%					576.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%					-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0	N				52.393	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4	N				96.310	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0	N				133.76	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs				ONGOING	

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ROLL # **446723-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.44**	mm	**57**	mil
	MAX:	**1.67**	mm	**66**	mil
Asperity GRI GM12: **30** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60 mil**
Length.....	**125**	m	**410.1** feet
Width.....	**7.00**	m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			**.28**	
Carbon Black Content ASTM D4218	Range	%			**2.41**	
Carbon Black Dispersion ASTM D5596	Category				**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**25** N/mm	**144** ppi		**2,379**	psi
	Average Strength @ Break	**36** N/mm	**204** ppi		**3,372**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.98**	
Lo = 2.0" Break	Average Elongation @ Break	%			**576.2**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**233.0** N			**52.393**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**428.4** N			**96.310**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**595.0** N			**133.76**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

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ROLL # **446724-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.46 mm	57 mil
	MAX:	1.65 mm	65 mil
Asperity GRI GM12: 36 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.54 mm	61 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g.		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.41	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	144 ppi	2,379	psi
	Average Strength @ Break	36	N/mm	204 ppi	3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		17.98	
Lo = 2.0" Break	Average Elongation @ Break		%		576.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0	N		52.393	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4	N		96.310	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0	N		133.76	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
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ROLL # **447101-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.47	mm	58	mil
	MAX:	1.75	mm	69	mil
Asperity GRI GM12: 22 mil	AVE:	1.59	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.41	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149	ppi	2,379	psi
	Average Strength @ Break	37	N/mm	211	ppi	3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.98	
Lo = 2.0" Break	Average Elongation @ Break	%				576.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0	N			52.393	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4	N			96.310	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0	N			133.76	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
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ROLL # **447102-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.45 mm	57 mil
	MAX:	1.74 mm	69 mil
Asperity GRI GM12: 37 mil	AVE:	1.56 mm	61 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1 feet	
Width.....	7.00 m;	23.0 feet	
OIT(Standard) ASTM D3895 minutes	199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.41	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	146 ppi	2,379	psi
	Average Strength @ Break	36	N/mm	207 ppi	3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		17.98	
Lo = 2.0" Break	Average Elongation @ Break		%		576.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0	N		52.393	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4	N		96.310	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0	N		133.76	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
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ROLL # **447103-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.37	mm	54	mil
	MAX:	1.67	mm	66	mil
Asperity GRI GM12: 28 mil	AVE:	1.54	mm	61	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.33	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	144	ppi	2,378	psi
	Average Strength @ Break	33	N/mm	190	ppi	3,135	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.97	
Lo = 2.0" Break	Average Elongation @ Break	%				531.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0	N			52.393	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4	N			96.310	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0	N			133.76	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
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ROLL # **447104-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.49	mm	59	mil
	MAX:	1.68	mm	66	mil
Asperity GRI GM12: 35 mil	AVE:	1.57	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.33	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	147	ppi	2,378	psi
	Average Strength @ Break	34	N/mm	194	ppi	3,135	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.97	
Lo = 2.0" Break	Average Elongation @ Break	%				531.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0	N			52.393	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4	N			96.310	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0	N			133.76	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
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ROLL # **447105-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.48	mm	58	mil
	MAX:	1.68	mm	66	mil
Asperity GRI GM12: 27 mil	AVE:	1.58	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc			.946
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.28
Carbon Black Content ASTM D4218	Range	%			2.33
Carbon Black Dispersion ASTM D5596	Category				1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	148 ppi		2,378 psi
	Average Strength @ Break	34 N/mm	195 ppi		3,135 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.97
Lo = 2.0" Break	Average Elongation @ Break	%			531.3
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0 N			52.393 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4 N			96.310 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0 N			133.76 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING

Customer: **Allied Waste Industries, Inc.**
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ROLL # **447106-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.45	mm	57	mil
	MAX:	1.66	mm	65	mil
Asperity GRI GM12: 38 mil	AVE:	1.54	mm	61	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 *minutes 199

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.33	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	144	ppi	2,378	psi
	Average Strength @ Break	33	N/mm	190	ppi	3,135	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.97	
Lo = 2.0" Break	Average Elongation @ Break	%				531.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0	N			52.393	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4	N			96.310	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0	N			133.76	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-20-06

Signature.....
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ROLL # **447107-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.49	mm	59	mil
	MAX:	1.79	mm	70	mil
Asperity GRI GM12: 30 mil	AVE:	1.59	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1 feet	
Width.....	7.00 m;	23.0 feet	
OIT(Standard) ASTM D3895 minutes	199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.33	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149 ppi	2,378	psi
	Average Strength @ Break	34	N/mm	196 ppi	3,135	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.97	
Lo = 2.0" Break	Average Elongation @ Break	%			531.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.0	N		52.393	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	428.4	N		96.310	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	595.0	N		133.76	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-20-06**

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ROLL # **447108-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.48	mm	58	mil
	MAX:	1.71	mm	67	mil
	AVE:	1.59	mm	63	mil

Asperity GRI GM12: **39** mil
ODD # : TOP EVEN #: BOTTOM

Thickness..... **1.5 mm** **60 mil**
Length..... **125** m **410.1** feet
Width..... **7.00** m; **23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.43	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**147** ppi	2,356	psi
	Average Strength @ Break	**36**	N/mm	**208** ppi	3,319	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			18.22	
Lo = 2.0" Break	Average Elongation @ Break	%			551.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**238.8**	N		53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**420.7**	N		94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**571.0**	N		128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-21-06**

Signature.....

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ROLL # **447109-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.50 mm	59 mil
	MAX:	1.69 mm	67 mil
Asperity GRI GM12: 27 mil	AVE:	1.58 mm	62 mil

ODD # : TOP EVEN #: BOTTOM

Thickness..... 1.5 mm 60 mil
Length..... 125 m 410.1 feet
Width..... 7.00 m; 23.0 feet

OIT(Standard) ASTM D3895 minutes 199

				TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc		.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min		.28	
Carbon Black Content ASTM D4218	Range	%		2.43	
Carbon Black Dispersion ASTM D5596	Category			1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	147 ppi	2,356	psi
	Average Strength @ Break	36 N/mm	206 ppi	3,319	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		18.22	
Lo = 2.0" Break	Average Elongation @ Break	%		551.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.8 N		53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.7 N		94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	571.0 N		128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-21-06

Signature: H Holmes

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ROLL # **447110-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.49	mm	59	mil
	MAX:	1.68	mm	66	mil
Asperity GRI GM12: 40 mil	AVE:	1.57	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

							TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc					.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min					.28	
Carbon Black Content ASTM D4218	Range	%					2.43	
Carbon Black Dispersion ASTM D5596	Category						1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	146	ppi		2,356	psi
	Average Strength @ Break	36	N/mm	205	ppi		3,319	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%					18.22	
Lo = 2.0" Break	Average Elongation @ Break	%					551.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%					-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.8	N				53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.7	N				94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	571.0	N				128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-21-06

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ROLL # **447111-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125 m	410.1 feet
	MAX:	1.68	mm	66	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	199	

ODD # : TOP EVEN #: BOTTOM

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.43	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	147 ppi	2,356	psi
	Average Strength @ Break	36	N/mm	206 ppi	3,319	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		18.22	
Lo = 2.0" Break	Average Elongation @ Break		%		551.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.8	N		53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.7	N		94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	571.0	N		128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-21-06

Signature: [signature]

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ROLL # **447112-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.50 mm	59 mil
	MAX:	1.66 mm	65 mil
Asperity GRI GM12: 36 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.57 mm	62 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.43	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	146 ppi	2,356	psi
	Average Strength @ Break	36	N/mm	205 ppi	3,319	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		18.22	
Lo = 2.0" Break	Average Elongation @ Break		%		551.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.8	N		53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.7	N		94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	571.0	N		128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date:..... 11-21-06

Signature.....

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ROLL # **447113-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.49	mm	59	mil
	MAX:	1.73	mm	68	mil
Asperity GRI GM12: 27 mil	AVE:	1.57	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm		60 mil
Length.....	125 m		410.1 feet
Width.....	7.00 m;		23.0 feet
OIT(Standard) ASTM D3895 minutes	199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.13	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	140 ppi	2,266	psi
	Average Strength @ Break	36	N/mm	208 ppi	3,366	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			19.18	
Lo = 2.0" Break	Average Elongation @ Break	%			558.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.8	N		53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.7	N		94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	571.0	N		128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-21-06**

Signature.....

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ROLL # **447114-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.49 mm	59 mil
	MAX:	1.69 mm	67 mil
Asperity GRI GM12: 36 mil	AVE:	1.59 mm	63 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.13	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	142 ppi	2,266	psi
	Average Strength @ Break	37	N/mm	211 ppi	3,366	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		19.18	
Lo = 2.0" Break	Average Elongation @ Break		%		558.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.8	N		53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.7	N		94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	571.0	N		128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-21-06**

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ROLL # **447115-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.48	mm	58	mil
	MAX:	1.73	mm	68	mil
Asperity GRI GM12: 28 mil	AVE:	1.59	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

							TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc					**.946**
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min					**.28**
Carbon Black Content ASTM D4218	Range	%					**2.13**
Carbon Black Dispersion ASTM D5596	Category						**1**
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**25**	N/mm	**142**	ppi	**2,266**	psi
	Average Strength @ Break	**37**	N/mm	**211**	ppi	**3,366**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**19.18**	
Lo = 2.0" Break	Average Elongation @ Break	%				**558.9**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**238.8**	N			**53.692**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**420.7**	N			**94.582**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**571.0**	N			**128.36**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-21-06**

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ROLL # **447116-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.47	mm	58	mil
	MAX:	1.65	mm	65	mil
Asperity GRI GM12: 39 mil	AVE:	1.54	mm	61	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.13	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	24	N/mm	137	ppi	2,266	psi
	Average Strength @ Break	36	N/mm	204	ppi	3,366	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				19.18	
Lo = 2.0" Break	Average Elongation @ Break	%				558.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.8	N			53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.7	N			94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	571.0	N			128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-21-06

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ROLL # **447117-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.51	mm	59	mil
	MAX:	1.74	mm	69	mil
Asperity GRI GM12: 26 mil ODD #: TOP EVEN #: BOTTOM	AVE:	1.59	mm	63	mil

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1 feet	
Width.....	7.00 m;	23.0 feet	
OIT(Standard) ASTM D3895 minutes	199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.13	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	142 ppi	2,266	psi
	Average Strength @ Break	37	N/mm	211 ppi	3,366	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			19.18	
Lo = 2.0" Break	Average Elongation @ Break	%			558.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.8	N		53.692	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.7	N		94.582	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	571.0	N		128.36	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

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ROLL # **447118-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.43 mm	56 mil
	MAX:	1.66 mm	65 mil
Asperity GRI GM12: 36 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.54 mm	61 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.46	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25 N/mm	143 ppi		2,365	psi
	Average Strength @ Break	35 N/mm	200 ppi		3,295	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.84	
Lo = 2.0" Break	Average Elongation @ Break	%			544.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	234.7 N			52.756	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	443.5 N			99.698	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	600.1 N			134.91	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

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ROLL # **447219-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.47 mm	58 mil
	MAX:	1.74 mm	69 mil
Asperity GRI GM12: 26 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.58 mm	62 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.46	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	147 ppi		2,365	psi
	Average Strength @ Break	36 N/mm	205 ppi		3,295	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.84	
Lo = 2.0" Break	Average Elongation @ Break	%			544.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	234.7 N			52.756	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	443.5 N			99.698	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	600.1 N			134.91	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
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ROLL # **447220-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.50 mm	59 mil
	MAX:	1.63 mm	64 mil
Asperity GRI GM12: 36 mil	AVE:	1.55 mm	61 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.46	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25 N/mm	144 ppi		2,365	psi
	Average Strength @ Break	35 N/mm	201 ppi		3,295	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.84	
Lo = 2.0" Break	Average Elongation @ Break	%			544.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	234.7 N			52.756	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	443.5 N			99.698	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	600.1 N			134.91	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

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ROLL # **447221-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.44	mm	57	mil
	MAX:	1.69	mm	67	mil
Asperity GRI GM12: 31 mil	AVE:	1.55	mm	61	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.46	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	144	ppi	2,365	psi
	Average Strength @ Break	35	N/mm	201	ppi	3,295	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.84	
Lo = 2.0" Break	Average Elongation @ Break	%				544.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	234.7	N			52.756	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	443.5	N			99.698	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	600.1	N			134.91	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-21-06

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ROLL # **447222-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	**1.45** mm	**57** mil
	MAX:	**1.69** mm	**67** mil
Asperity GRI GM12: **36** mil ODD # : TOP EVEN #: BOTTOM	AVE:	**1.55** mm	**61** mil

Thickness.....	**1.5 mm**	**60 mil**
Length.....	**125** m	**410.1** feet
Width.....	**7.00** m;	**23.0** feet
OIT(Standard) ASTM D3895 minutes	**199**	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		**.28**	
Carbon Black Content ASTM D4218	Range		%		**2.46**	
Carbon Black Dispersion ASTM D5596	Category				**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**25** N/mm		**144** ppi	**2,365**	psi
	Average Strength @ Break	**35** N/mm		**201** ppi	**3,295**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.84**	
Lo = 2.0" Break	Average Elongation @ Break	%			**544.2**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**234.7** N			**52.756**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**443.5** N			**99.698**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**600.1** N			**134.91**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-21-06**

Signature: H Holmes

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ROLL # **447223-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

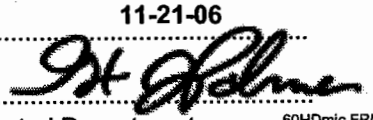
Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.47 mm	58 mil
	MAX:	1.69 mm	67 mil
Asperity GRI GM12: 28 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.58 mm	62 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.32	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149 ppi	2,390	psi
	Average Strength @ Break	36	N/mm	204 ppi	3,278	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		15.46	
Lo = 2.0" Break	Average Elongation @ Break		%		547.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	234.7	N		52.756	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	443.5	N		99.698	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	600.1	N		134.91	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-21-06**

Signature: 

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ROLL # **447224-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.64**	mm	**65**	mil
Asperity GRI GM12: **37** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60 mil**
Length.....	**125**	m	**410.1** feet
Width.....	**7.00**	m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		**.28**	
Carbon Black Content ASTM D4218	Range		%		**2.32**	
Carbon Black Dispersion ASTM D5596	Category				**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**147** ppi	**2,390**	psi
	Average Strength @ Break	**35**	N/mm	**201** ppi	**3,278**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		**15.46**	
Lo = 2.0" Break	Average Elongation @ Break		%		**547.5**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**234.7**	N		**52.756**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**443.5**	N		**99.698**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**600.1**	N		**134.91**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
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ROLL # **447225-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.51 mm	59 mil
	MAX:	1.67 mm	66 mil
Asperity GRI GM12: 28 mil	AVE:	1.58 mm	62 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.32	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149 ppi	2,390	psi
	Average Strength @ Break	36	N/mm	204 ppi	3,278	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		15.46	
Lo = 2.0" Break	Average Elongation @ Break		%		547.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	234.7	N		52.756	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	443.5	N		99.698	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	600.1	N		134.91	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-21-06

Signature: H Holmes

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ROLL # **447226-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.48	mm	58	mil
	MAX:	1.69	mm	67	mil
Asperity GRI GM12: 36 mil	AVE:	1.58	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

							TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc					.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min					.28	
Carbon Black Content ASTM D4218	Range	%					2.32	
Carbon Black Dispersion ASTM D5596	Category						1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149	ppi		2,390	psi
	Average Strength @ Break	36	N/mm	204	ppi		3,278	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%					15.46	
Lo = 2.0" Break	Average Elongation @ Break	%					547.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%					-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	234.7	N				52.756	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	443.5	N				99.698	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	600.1	N				134.91	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
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Destination **Concord, NC**

Date: 11-21-06

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ROLL # **447227-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.50	mm	59	mil
	MAX:	1.75	mm	69	mil
Asperity GRI GM12: 28 mil	AVE:	1.58	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.32	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149	ppi	2,390	psi
	Average Strength @ Break	36	N/mm	204	ppi	3,278	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				15.46	
Lo = 2.0" Break	Average Elongation @ Break	%				547.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	234.7	N			52.756	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	443.5	N			99.698	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	600.1	N			134.91	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-21-06

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ROLL # **447228-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.46	mm	57	mil	Length.....	125 m	410.1 feet
	MAX:	1.72	mm	68	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 38 mil	AVE:	1.59	mm	63	mil	OIT(Standard) ASTM D3895 minutes	199	

ODD # : TOP EVEN #: BOTTOM

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.29	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	159 ppi	2,542	psi
	Average Strength @ Break	38	N/mm	219 ppi	3,504	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			15.01	
Lo = 2.0" Break	Average Elongation @ Break	%			554.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2	N		54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1	N		101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8	N		137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature:

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ROLL # **447229-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.48	mm	58	mil
	MAX:	1.69	mm	67	mil
Asperity GRI GM12: 25 mil	AVE:	1.58	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.29	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158	ppi	2,542	psi
	Average Strength @ Break	38	N/mm	218	ppi	3,504	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				15.01	
Lo = 2.0" Break	Average Elongation @ Break	%				554.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2	N			54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1	N			101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8	N			137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

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ROLL # **447230-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.46 mm	57 mil
	MAX:	1.78 mm	70 mil
Asperity GRI GM12: 34 mil	AVE:	1.57 mm	62 mil

ODD # : TOP EVEN #: BOTTOM

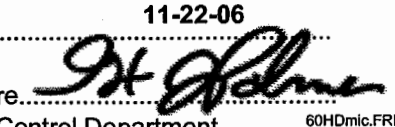
Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.29	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	157 ppi		2,542	psi
	Average Strength @ Break	38 N/mm	217 ppi		3,504	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			15.01	
Lo = 2.0" Break	Average Elongation @ Break	%			554.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2 N			54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1 N			101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8 N			137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature: 

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ROLL # **447231-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.46 mm	57 mil
	MAX:	1.69 mm	67 mil
Asperity GRI GM12: 27 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.58 mm	62 mil

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1 feet	
Width.....	7.00 m;	23.0 feet	
OIT(Standard) ASTM D3895 minutes	199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.29	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158 ppi	2,542	psi
	Average Strength @ Break	38	N/mm	218 ppi	3,504	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		15.01	
Lo = 2.0" Break	Average Elongation @ Break		%		554.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2	N		54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1	N		101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8	N		137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

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ROLL # **447232-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.47	mm	58	mil
	MAX:	1.76	mm	69	mil
Asperity GRI GM12: 37 mil	AVE:	1.59	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.29	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	159	ppi	2,542	psi
	Average Strength @ Break	38	N/mm	219	ppi	3,504	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				15.01	
Lo = 2.0" Break	Average Elongation @ Break	%				554.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2	N			54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1	N			101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8	N			137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

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ROLL # **447233-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.45	mm	57	mil
	MAX:	1.62	mm	64	mil
Asperity GRI GM12: 28 mil	AVE:	1.54	mm	61	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.43	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	141	ppi	2,318	psi
	Average Strength @ Break	36	N/mm	204	ppi	3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				21.53	
Lo = 2.0" Break	Average Elongation @ Break	%				531.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2	N			54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1	N			101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8	N			137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

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ROLL # **447234-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.45	mm	57	mil
	MAX:	1.69	mm	67	mil
Asperity GRI GM12: 35 mil	AVE:	1.57	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.43	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	143	ppi	2,318	psi
	Average Strength @ Break	37	N/mm	208	ppi	3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				21.53	
Lo = 2.0" Break	Average Elongation @ Break	%				531.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2	N			54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1	N			101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8	N			137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature.....

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ROLL # **447235-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125 m	410.1 feet
	MAX:	1.68	mm	66	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	199	

ODD # : TOP EVEN #: BOTTOM

				TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc	.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min	.28	
Carbon Black Content ASTM D4218	Range		%	2.43	
Carbon Black Dispersion ASTM D5596	Category			1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25 N/mm	142 ppi	2,318	psi
	Average Strength @ Break	36 N/mm	207 ppi	3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%	21.53	
Lo = 2.0" Break	Average Elongation @ Break		%	531.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%	-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2 N		54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1 N		101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8 N		137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

Signature: H Holmes

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ROLL # **447236-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125 m	410.1 feet
	MAX:	1.71	mm	67	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.57	mm	62	mil	OIT(Standard) ASTM D3895 minutes	199	

ODD # : TOP EVEN #: BOTTOM

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.43	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	143 ppi	2,318	psi
	Average Strength @ Break	37	N/mm	208 ppi	3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		21.53	
Lo = 2.0" Break	Average Elongation @ Break		%		531.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2	N		54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1	N		101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8	N		137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

Signature: [signature]

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ROLL # **447237-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.49 mm	59 mil
	MAX:	1.69 mm	67 mil
Asperity GRI GM12: 27 mil	AVE:	1.56 mm	61 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm		60 mil
Length.....	125 m		410.1 feet
Width.....	7.00 m;		23.0 feet
OIT(Standard) ASTM D3895 minutes	199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.43	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25 N/mm	142 ppi		2,318	psi
	Average Strength @ Break	36 N/mm	207 ppi		3,372	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			21.53	
Lo = 2.0" Break	Average Elongation @ Break	%			531.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	244.2 N			54.895	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	452.1 N			101.63	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	609.8 N			137.08	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

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ROLL # **447238-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.47	mm	58	mil
	MAX:	1.72	mm	68	mil
	AVE:	1.58	mm	62	mil

Asperity GRI GM12: **34** mil
ODD # : TOP EVEN #: BOTTOM

Thickness..... **1.5 mm** **60 mil**
Length..... **125** m **410.1** feet
Width..... **7.00** m; **23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		.28	
Carbon Black Content ASTM D4218	Range		%		2.41	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**149** ppi	**2,390**	psi
	Average Strength @ Break	**34**	N/mm	**197** ppi	**3,161**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		**18.56**	
Lo = 2.0" Break	Average Elongation @ Break		%		**534.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**241.2**	N		**54.237**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**479.5**	N		**107.80**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**618.5**	N		**139.05**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs		**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs		**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

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ROLL # **447339-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	**1.44** mm	**57** mil
	MAX:	**1.69** mm	**67** mil
Asperity GRI GM12: **28** mil	AVE:	**1.55** mm	**61** mil

ODD # : TOP EVEN #: BOTTOM

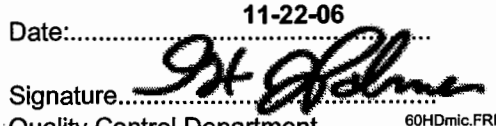
Thickness.....	**1.5 mm**	**60 mil**
Length.....	**125** m	**410.1** feet
Width.....	**7.00** m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.28**	
Carbon Black Content ASTM D4218	Range	%			**2.41**	
Carbon Black Dispersion ASTM D5596	Category				**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26** N/mm	**146** ppi		**2,390**	psi
	Average Strength @ Break	**34** N/mm	**193** ppi		**3,161**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**18.56**	
Lo = 2.0" Break	Average Elongation @ Break	%			**534.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**241.2** N			**54.237**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**479.5** N			**107.80**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**618.5** N			**139.05**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature: 

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ROLL # **447340-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.46	mm	57	mil
	MAX:	1.65	mm	65	mil
Asperity GRI GM12: 35 mil	AVE:	1.53	mm	60	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.41	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	144	ppi	2,390	psi
	Average Strength @ Break	33	N/mm	190	ppi	3,161	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				18.56	
Lo = 2.0" Break	Average Elongation @ Break	%				534.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	241.2	N			54.237	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	479.5	N			107.80	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	618.5	N			139.05	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date:.....11-22-06.....

Signature.....

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ROLL # **447341-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	**1.48** mm	**58** mil
	MAX:	**1.75** mm	**69** mil
Asperity GRI GM12: **29** mil	AVE:	**1.56** mm	**61** mil

ODD # : TOP EVEN #: BOTTOM

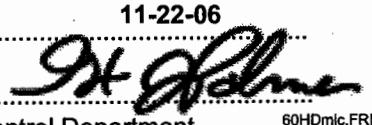
Thickness.....	**1.5 mm**	**60 mil**
Length.....	**125** m	**410.1** feet
Width.....	**7.00** m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			**.28**	
Carbon Black Content ASTM D4218	Range	%			**2.41**	
Carbon Black Dispersion ASTM D5596	Category				**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26** N/mm	**147** ppi		**2,390**	psi
	Average Strength @ Break	**34** N/mm	**194** ppi		**3,161**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**18.56**	
Lo = 2.0" Break	Average Elongation @ Break	%			**534.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**241.2** N			**54.237**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**479.5** N			**107.80**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**618.5** N			**139.05**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature: 

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ROLL # **447342-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

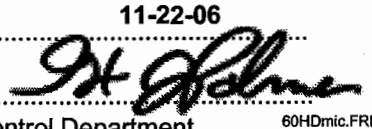
Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125 m	410.1 feet
	MAX:	1.65	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 33 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	199	

ODD # : TOP EVEN #: BOTTOM

				TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc		.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min		.28	
Carbon Black Content ASTM D4218	Range	%		2.41	
Carbon Black Dispersion ASTM D5596	Category			1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	146 ppi	2,390	psi
	Average Strength @ Break	34 N/mm	193 ppi	3,161	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		18.56	
Lo = 2.0" Break	Average Elongation @ Break	%		534.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	241.2 N		54.237	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	479.5 N		107.80	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	618.5 N		139.05	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature: 

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ROLL # **447343-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.46	mm	57	mil
	MAX:	1.72	mm	68	mil
Asperity GRI GM12: 25 mil	AVE:	1.58	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1 feet	
Width.....	7.00 m;	23.0 feet	
OIT(Standard) ASTM D3895 minutes	199		

						TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc		.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g			g/10 min		.28	
Carbon Black Content ASTM D4218	Range			%		2.44	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	146	ppi	2,349	psi
	Average Strength @ Break	34	N/mm	195	ppi	3,142	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield			%		17.95	
Lo = 2.0" Break	Average Elongation @ Break			%		542.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change			%		-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	241.2	N			54.237	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	479.5	N			107.80	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	618.5	N			139.05	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

Signature: [signature]

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ROLL # **447344-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.46	mm	57	mil
	MAX:	1.63	mm	64	mil
Asperity GRI GM12: 36 mil	AVE:	1.55	mm	61	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.44	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	143	ppi	2,349	psi
	Average Strength @ Break	34	N/mm	192	ppi	3,142	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.95	
Lo = 2.0" Break	Average Elongation @ Break	%				542.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	241.2	N			54.237	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	479.5	N			107.80	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	618.5	N			139.05	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

Signature.....
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ROLL # **447345-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.52	mm	60	mil
	MAX:	1.70	mm	67	mil
Asperity GRI GM12: 29 mil	AVE:	1.61	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60 mil
Length.....	125	m	410.1 feet
Width.....	7.00	m;	23.0 feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.44	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149 ppi	2,349	psi
	Average Strength @ Break	35	N/mm	199 ppi	3,142	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.95	
Lo = 2.0" Break	Average Elongation @ Break	%			542.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	241.2	N		54.237	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	479.5	N		107.80	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	618.5	N		139.05	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature: H. Holmes

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ROLL # **447346-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.44	mm	57	mil
	MAX:	1.66	mm	65	mil
Asperity GRI GM12: 39 mil	AVE:	1.55	mm	61	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.44	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	143	ppi	2,349	psi
	Average Strength @ Break	34	N/mm	192	ppi	3,142	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.95	
Lo = 2.0" Break	Average Elongation @ Break	%				542.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	241.2	N			54.237	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	479.5	N			107.80	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	618.5	N			139.05	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

Signature.....
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ROLL # **447347-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.55	mm	61	mil
	MAX:	1.69	mm	67	mil
Asperity GRI GM12: 21 mil	AVE:	1.63	mm	64	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.28	
Carbon Black Content ASTM D4218	Range	%				2.44	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	151	ppi	2,349	psi
	Average Strength @ Break	35	N/mm	202	ppi	3,142	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	%				17.95	
	Average Elongation @ Break	%				542.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	241.2	N			54.237	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	479.5	N			107.80	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	618.5	N			139.05	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

Signature.....
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ROLL # **447348-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.54**	mm	**61**	mil
	MAX:	**1.72**	mm	**68**	mil
Asperity GRI GM12: **33** mil ODD # : TOP EVEN #: BOTTOM	AVE:	**1.62**	mm	**64**	mil

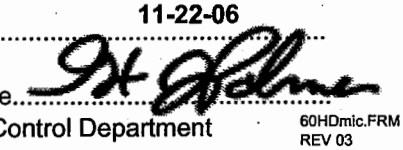
Thickness.....	**1.5**	mm	**60 mil**
Length.....	**125**	m	**410.1** feet
Width.....	**7.00**	m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			**.28**	
Carbon Black Content ASTM D4218	Range		%			**2.39**	
Carbon Black Dispersion ASTM D5596	Category					**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**150**	ppi	**2,359**	psi
	Average Strength @ Break	**38**	N/mm	**214**	ppi	**3,362**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			**19.25**	
Lo = 2.0" Break	Average Elongation @ Break		%			**550.2**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**236.7**	N			**53.209**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**445.9**	N			**100.25**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**596.3**	N			**134.06**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature: 

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ROLL # **447349-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.48	mm	58	mil
	MAX:	1.65	mm	65	mil
Asperity GRI GM12: 27 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.61	mm	63	mil

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1 feet	
Width.....	7.00 m;	23.0 feet	
OIT(Standard) ASTM D3895 minutes	199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.28	
Carbon Black Content ASTM D4218	Range	%			2.39	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149 ppi	2,359	psi
	Average Strength @ Break	37	N/mm	213 ppi	3,362	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			19.25	
Lo = 2.0" Break	Average Elongation @ Break	%			550.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	236.7	N		53.209	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	445.9	N		100.25	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	596.3	N		134.06	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date:..... 11-22-06

Signature.....

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ROLL # **447350-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.45**	mm	**57**	mil
	MAX:	**1.69**	mm	**67**	mil
Asperity GRI GM12: **36** mil ODD # : TOP EVEN #: BOTTOM	AVE:	**1.56**	mm	**61**	mil

Thickness..... **1.5 mm** **60 mil**
Length..... **125** m **410.1** feet
Width..... **7.00** m; **23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		**.28**	
Carbon Black Content ASTM D4218	Range		%		**2.39**	
Carbon Black Dispersion ASTM D5596	Category				**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**25**	N/mm	**145** ppi	**2,359**	psi
	Average Strength @ Break	**36**	N/mm	**206** ppi	**3,362**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		**19.25**	
Lo = 2.0" Break	Average Elongation @ Break		%		**550.2**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**236.7**	N		**53.209**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**445.9**	N		**100.25**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**596.3**	N		**134.06**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs		**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs		**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature.....

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ROLL # **447351-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	**1.46** mm	**57** mil
	MAX:	**1.63** mm	**64** mil
Asperity GRI GM12: **28** mil	AVE:	**1.54** mm	**61** mil

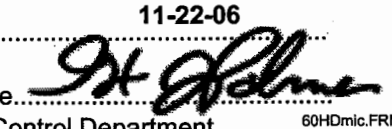
ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**	**60 mil**
Length.....	**125** m	**410.1** feet
Width.....	**7.00** m;	**23.0** feet
OIT(Standard) ASTM D3895 minutes	**199**	

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min			**.28**	
Carbon Black Content ASTM D4218	Range		%			**2.39**	
Carbon Black Dispersion ASTM D5596	Category					**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**25**	N/mm	**143**	ppi	**2,359**	psi
	Average Strength @ Break	**36**	N/mm	**204**	ppi	**3,362**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			**19.25**	
Lo = 2.0" Break	Average Elongation @ Break		%			**550.2**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			**-0.56**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**236.7**	N			**53.209**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**445.9**	N			**100.25**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**596.3**	N			**134.06**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature: 

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ROLL # **447352-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.51	mm	59	mil	Length.....	125 m	410.1 feet
	MAX:	1.69	mm	67	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 36 mil ODD #: TOP EVEN #: BOTTOM	AVE:	1.60	mm	63	mil	OIT(Standard) ASTM D3895 minutes 199		

				TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc	.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min	.28	
Carbon Black Content ASTM D4218	Range		%	2.39	
Carbon Black Dispersion ASTM D5596	Category			1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149 ppi	2,359 psi
	Average Strength @ Break	37	N/mm	212 ppi	3,362 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%	19.25	
Lo = 2.0" Break	Average Elongation @ Break		%	550.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%	-0.56	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	236.7	N	53.209	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	445.9	N	100.25	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	596.3	N	134.06	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-22-06**

Signature:

Quality Control Department

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ROLL # **447353-06** Lot #: **8161021** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.46	mm	57	mil
	MAX:	1.76	mm	69	mil
Asperity GRI GM12: 27 mil	AVE:	1.58	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc			.946
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.28
Carbon Black Content ASTM D4218	Range	%			2.47
Carbon Black Dispersion ASTM D5596	Category				1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	150 ppi		2,418 psi
	Average Strength @ Break	36 N/mm	207 ppi		3,331 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			18.66
Lo = 2.0" Break	Average Elongation @ Break	%			529.3
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.56
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	236.7 N			53.209 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	445.9 N			100.25 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	596.3 N			134.06 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-22-06

Signature: [signature]
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Chevron Phillips Chemical Company LP

CoA Date: 10/19/2006

Certificate of Analysis

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

Recipient: PALMER
Fax:

CPC Delivery #: 87255946
PO #: 004456
Weight: 188400 LB
Ship Date: 10/18/2006
Package: BULK
Mode: Hopper Car
Car #: PSPX001212
Seal No: 201133

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: 8161021

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.280	g/10mi
HLMI Flow Rate	ASTM D1238	22.00	g/10mi
Density	ASTM D1505	0.9370	g/cm3
Pellet Count	P02.08.03	28.000	pel/g
Production Date		08/13/2006	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP.
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.

Jackie Edwards
Certification Systems Specialist

For CoA questions contact Tom Scheirman at 832-813-4637

agru america, inc.

SP NOTCHED CONSTANT TENSILE LOAD ASTM D 5397 APPENDIX A

LOT # : **8161021** MATERIAL : **K307** DATE : **11-20-06**

ROLL # **446713-06** LINER TYPE **60 HD MICRO** REF # : **1380**

FORMULA FOR APPLIED LOAD : Load = $\frac{(\text{str@yld} \times \%\text{test} \times (80\% \text{ of nom. thickness}) \times \text{width}) - CF}{MA}$

where :

str@yld = Tensile strength @ yield (Transverse Direction) from ASTM D-638 in psi

thickness = Thickness of sample at notch point in inches

width = Width of sample in inches (.125" constant)

MA = Mechanical Advantage Used (1:1, 3:1, 4:1, or 5:1)

CF = Correction Factor for MA Stations is 77g (weight of arm with empty holder attached to other end)

Therefore, for each sample, **load = (str@yld x nom. thickness x .0300*----->([%TEST] x .8 x .125))-CF/MA**

*** This number may change due to customer specifications. Formula will be changed also.**

Strength @ yield for this roll : **2,577** psi % of yield tested : **30** %

Station used: _____ Mechanical Advantage Used: **5** CF = **77** g

Nominal Thickness (in): 0.0600

LOAD = str@yld x nominal thickness x formula

LOAD = 2,577 x 0.060 x formula

LOAD = 405 g

PASS @ 400 HRS

Specimen Thickness		Notch Depth		PASS / FAIL ?	Failure at
#1	0.0623	#1	0.0143	PASS	_____ hours
#2	0.0629	#2	0.0149	PASS	_____ hours
#3	0.0625	#3	0.0145	PASS	_____ hours
#4	0.0624	#4	0.0144	PASS	_____ hours
#5	0.0631	#5	0.0151	PASS	_____ hours

Comments: All Samples Removed After 423 Hours With No Breaks.

Tested By: JE

Checked By: GP

Test Conditions (At Notching) **Temp:** 71 **Humidity:** 52

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ROLL # **448327-06** Lot #: **8161020** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.41 mm	56 mil
	MAX:	1.79 mm	70 mil
Asperity GRI GM12: 31 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.57 mm	62 mil

			TEST RESULTS
Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1 feet	
Width.....	7.00 m;	23.0 feet	
OIT(Standard) ASTM D3895	minutes 204		

Specific Gravity ASTM D792	Density	g/cc		.950	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min		.26	
Carbon Black Content ASTM D4218	Range	%		2.48	
Carbon Black Dispersion ASTM D5596	Category			1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27 N/mm	154 ppi	2,500	psi
	Average Strength @ Break	38 N/mm	216 ppi	3,491	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		20.07	
Lo = 2.0" Break	Average Elongation @ Break	%		542.0	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-.13	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.0 N		53.503	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	445.1 N		100.06	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	557.7 N		125.38	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-29-06**

Signature: _____

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ROLL # **448328-06** Lot #: **8161020** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.49	mm	59	mil
	MAX:	1.79	mm	70	mil
Asperity GRI GM12: 35 mil	AVE:	1.57	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **204**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.950	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.26	
Carbon Black Content ASTM D4218	Range	%				2.48	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	154	ppi	2,500	psi
	Average Strength @ Break	38	N/mm	216	ppi	3,491	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				20.07	
Lo = 2.0" Break	Average Elongation @ Break	%				542.0	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.13	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.0	N			53.503	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	445.1	N			100.06	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	557.7	N			125.38	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-29-06

Signature: [signature]
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ROLL # **448329-06** Lot #: **8161020** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.41 mm	56 mil
	MAX:	1.79 mm	70 mil
Asperity GRI GM12: 28 mil	AVE:	1.56 mm	61 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	204	

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.950	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.48	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27 N/mm	154 ppi		2,500	psi
	Average Strength @ Break	38 N/mm	214 ppi		3,491	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			20.07	
Lo = 2.0" Break	Average Elongation @ Break	%			542.0	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-.13	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.0 N			53.503	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	445.1 N			100.06	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	557.7 N			125.38	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-29-06**

Signature: [signature]

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ROLL # **448330-06** Lot #: **8161020** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	**1.40** mm	**55** mil
	MAX:	**1.75** mm	**69** mil
Asperity GRI GM12: **38** mil	AVE:	**1.56** mm	**61** mil

ODD # : TOP EVEN #: BOTTOM

Thickness..... **1.5 mm** **60 mil**
Length..... **125** m **410.1** feet
Width..... **7.00** m; **23.0** feet

OIT(Standard) ASTM D3895 minutes **204**

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		**.950**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		**.26**	
Carbon Black Content ASTM D4218	Range		%		**2.48**	
Carbon Black Dispersion ASTM D5596	Category				**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**154** ppi	**2,500**	psi
	Average Strength @ Break	**38**	N/mm	**214** ppi	**3,491**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		**20.07**	
Lo = 2.0" Break	Average Elongation @ Break		%		**542.0**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		**-.13**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**238.0**	N		**53.503**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**445.1**	N		**100.06**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**557.7**	N		**125.38**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **11-29-06**

Signature.....

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ROLL # **448331-06** Lot #: **8161020** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.40	mm	55	mil	Length.....	125 m	410.1 feet
	MAX:	1.77	mm	70	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 29 mil	AVE:	1.53	mm	60	mil	OIT(Standard) ASTM D3895 minutes 204		

ODD # : TOP EVEN #: BOTTOM

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.950	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min		.26	
Carbon Black Content ASTM D4218	Range		%		2.48	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	151 ppi	2,500	psi
	Average Strength @ Break	37	N/mm	210 ppi	3,491	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		20.07	
Lo = 2.0" Break	Average Elongation @ Break		%		542.0	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-.13	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.0	N		53.503	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	445.1	N		100.06	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	557.7	N		125.38	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 11-29-06

Signature: H Holmes

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ROLL # **448332-06** Lot #: **8161020** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.43 mm	56 mil
	MAX:	1.79 mm	70 mil
Asperity GRI GM12: 36 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.57 mm	62 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	204	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.950	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min		.26	
Carbon Black Content ASTM D4218	Range		%		2.41	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	142 ppi	2,305	psi
	Average Strength @ Break	35	N/mm	200 ppi	3,230	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		19.55	
Lo = 2.0" Break	Average Elongation @ Break		%		559.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-.13	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	238.0	N		53.503	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	445.1	N		100.06	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	557.7	N		125.38	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date:..... **11-30-06**

Signature.....

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ROLL # **449110-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.39 mm	55 mil
	MAX:	1.76 mm	69 mil
Asperity GRI GM12: 36 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.53 mm	60 mil

Thickness..... 1.5 mm 60 mil
Length..... 125 m 410.1 feet
Width..... 7.00 m; 23.0 feet

OIT(Standard) ASTM D3895 minutes 199

				TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc		.947
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min		.26
Carbon Black Content ASTM D4218	Range	%		2.15
Carbon Black Dispersion ASTM D5596	Category			1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	146 ppi	2,426 psi
	Average Strength @ Break	37 N/mm	209 ppi	3,463 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		18.17
Lo = 2.0" Break	Average Elongation @ Break	%		567.1
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-0.65
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.1 N		53.976 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	415.5 N		93.415 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	620.1 N		139.40 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: [signature]

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ROLL # **449111-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

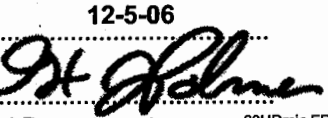
Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.49 mm	59 mil
	MAX:	1.88 mm	74 mil
Asperity GRI GM12: 24 mil ODD #: TOP EVEN #: BOTTOM	AVE:	1.63 mm	64 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895	minutes 199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.18	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	158 ppi		2,463	psi
	Average Strength @ Break	37 N/mm	211 ppi		3,285	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.71	
Lo = 2.0" Break	Average Elongation @ Break	%			552.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.1 N			53.976	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	415.5 N			93.415	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	620.1 N			139.40	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: 

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ROLL # **449112-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.41 mm	56 mil
	MAX:	1.78 mm	70 mil
Asperity GRI GM12: 36 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.57 mm	62 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min		.26	
Carbon Black Content ASTM D4218	Range		%		2.18	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	152 ppi	2,463	psi
	Average Strength @ Break	36	N/mm	203 ppi	3,285	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield		%		17.71	
	Average Elongation @ Break		%		552.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.1	N		53.976	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	415.5	N		93.415	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	620.1	N		139.40	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

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ROLL # **449113-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125 m	410.1 feet
	MAX:	1.84	mm	72	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 24 mil	AVE:	1.63	mm	64	mil	OIT(Standard) ASTM D3895 minutes	199	TEST RESULTS

ODD # : TOP EVEN #: BOTTOM

Specific Gravity ASTM D792	Density	g/cc		.947
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min		.26
Carbon Black Content ASTM D4218	Range	%		2.18
Carbon Black Dispersion ASTM D5596	Category			1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	158 ppi	2,463 psi
	Average Strength @ Break	37 N/mm	211 ppi	3,285 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		17.71
Lo = 2.0" Break	Average Elongation @ Break	%		552.1
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-0.65
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.1 N		53.976 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	415.5 N		93.415 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	620.1 N		139.40 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **12-5-06**

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ROLL # **449114-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.49	mm	59	mil
	MAX:	1.87	mm	74	mil
Asperity GRI GM12: 37 mil	AVE:	1.64	mm	65	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.26	
Carbon Black Content ASTM D4218	Range	%				2.18	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	159	ppi	2,463	psi
	Average Strength @ Break	37	N/mm	212	ppi	3,285	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.71	
Lo = 2.0" Break	Average Elongation @ Break	%				552.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.1	N			53.976	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	415.5	N			93.415	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	620.1	N			139.40	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: [signature]
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ROLL # **449115-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.44 mm	57 mil
	MAX:	1.82 mm	72 mil
Asperity GRI GM12: 26 mil	AVE:	1.62 mm	64 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895	minutes 199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.18	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	157 ppi		2,463	psi
	Average Strength @ Break	37 N/mm	209 ppi		3,285	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.71	
Lo = 2.0" Break	Average Elongation @ Break	%			552.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.1 N			53.976	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	415.5 N			93.415	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	620.1 N			139.40	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: M Holmes

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ROLL # **449116-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

		METRIC		ENGLISH	
Measurement ASTM D5994 (Modified)	MIN:	1.41	mm	56	mil
	MAX:	1.76	mm	69	mil
Asperity GRI GM12: 38 mil	AVE:	1.57	mm	62	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60	mil
Length.....	125	m	410.1	feet
Width.....	7.00	m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

Specific Gravity ASTM D792	Density	g/cc				.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.26	
Carbon Black Content ASTM D4218	Range	%				2.39	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	156	ppi	2,517	psi
	Average Strength @ Break	39	N/mm	224	ppi	3,627	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				20.66	
Lo = 2.0" Break	Average Elongation @ Break	%				553.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9	N			54.151	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3	N			105.28	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1	N			137.60	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: [signature]
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ROLL # **449217-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

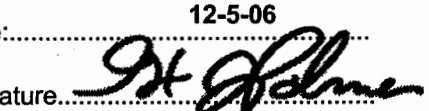
Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.45 mm	57 mil
	MAX:	1.86 mm	73 mil
Asperity GRI GM12: 24 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.63 mm	64 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895	minutes 199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.39	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	162 ppi		2,517	psi
	Average Strength @ Break	41 N/mm	233 ppi		3,627	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			20.66	
Lo = 2.0" Break	Average Elongation @ Break	%			553.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9 N			54.151	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3 N			105.28	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1 N			137.60	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: 

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ROLL # **449218-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.41**	mm	**56**	mil
	MAX:	**1.74**	mm	**69**	mil
Asperity GRI GM12: **38** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

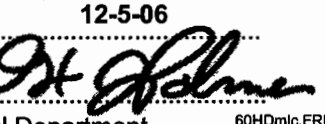
Thickness.....	**1.5**	**mm**	**60 mil**
Length.....	**125**	m	**410.1** feet
Width.....	**7.00**	m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.947**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			**.26**	
Carbon Black Content ASTM D4218	Range	%			**2.39**	
Carbon Black Dispersion ASTM D5596	Category				**1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27** N/mm	**156** ppi		**2,517**	psi
	Average Strength @ Break	**39** N/mm	**224** ppi		**3,627**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**20.66**	
Lo = 2.0" Break	Average Elongation @ Break	%			**553.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.65**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**240.9** N			**54.151**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**468.3** N			**105.28**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**612.1** N			**137.60**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **12-5-06**

Signature: 

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ROLL # **449219-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.46	mm	57	mil
	MAX:	1.90	mm	75	mil
Asperity GRI GM12: 27 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.66	mm	65	mil

Thickness..... 1.5 mm 60 mil
Length..... 125 m 410.1 feet
Width..... 7.00 m; 23.0 feet

OIT(Standard) ASTM D3895 minutes 199

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min		.26	
Carbon Black Content ASTM D4218	Range		%		2.39	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	29	N/mm	164 ppi	2,517	psi
	Average Strength @ Break	42	N/mm	237 ppi	3,627	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		20.66	
Lo = 2.0" Break	Average Elongation @ Break		%		553.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9	N		54.151	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3	N		105.28	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1	N		137.60	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: [signature]

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ROLL # **449220-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.45 mm	57 mil
	MAX:	1.81 mm	71 mil
Asperity GRI GM12: 37 mil	AVE:	1.62 mm	64 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

						TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc		.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g			g/10 min		.26	
Carbon Black Content ASTM D4218	Range			%		2.39	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	161	ppi	2,517	psi
	Average Strength @ Break	41	N/mm	231	ppi	3,627	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			20.66	
Lo = 2.0" Break	Average Elongation @ Break		%			553.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9	N			54.151	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3	N			105.28	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1	N			137.60	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **12-5-06**

Signature: _____

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ROLL # **449221-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.46 mm	57 mil
	MAX:	1.89 mm	74 mil
Asperity GRI GM12: 28 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.66 mm	65 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.10	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	162 ppi		2,483	psi
	Average Strength @ Break	39 N/mm	225 ppi		3,437	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.57	
Lo = 2.0" Break	Average Elongation @ Break	%			577.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9 N			54.151	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3 N			105.28	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1 N			137.60	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: H Holmes

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ROLL # **449222-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.45 mm	57 mil
	MAX:	1.88 mm	74 mil
Asperity GRI GM12: 37 mil	AVE:	1.60 mm	63 mil

ODD # : TOP EVEN #: BOTTOM

Thickness..... 1.5 mm 60 mil
Length..... 125 m 410.1 feet
Width..... 7.00 m; 23.0 feet

OIT(Standard) ASTM D3895 minutes 199

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min		.26	
Carbon Black Content ASTM D4218	Range		%		2.10	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	156 ppi	2,483	psi
	Average Strength @ Break	38	N/mm	217 ppi	3,437	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		17.57	
Lo = 2.0" Break	Average Elongation @ Break		%		577.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9	N		54.151	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3	N		105.28	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1	N		137.60	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

Signature: [signature]

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ROLL # **449223-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.43	mm	56	mil
	MAX:	1.81	mm	71	mil
Asperity GRI GM12: 28 mil	AVE:	1.59	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.10	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155 ppi	2,483	psi
	Average Strength @ Break	38	N/mm	215 ppi	3,437	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.57	
Lo = 2.0" Break	Average Elongation @ Break	%			577.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9	N		54.151	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3	N		105.28	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1	N		137.60	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs		ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

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ROLL # **449224-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.48 mm	58 mil
	MAX:	1.87 mm	74 mil
Asperity GRI GM12: 35 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.62 mm	64 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min			.26	
Carbon Black Content ASTM D4218	Range		%			2.10	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158	ppi	2,483	psi
	Average Strength @ Break	38	N/mm	219	ppi	3,437	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield		%			17.57	
	Average Elongation @ Break		%			577.2	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9	N			54.151	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3	N			105.28	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1	N			137.60	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **12-5-06**

Signature: _____

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ROLL # **449225-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.45	mm	57	mil
	MAX:	1.83	mm	72	mil
Asperity GRI GM12: 27 mil	AVE:	1.60	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

					TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc			.947
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.26
Carbon Black Content ASTM D4218	Range	%			2.10
Carbon Black Dispersion ASTM D5596	Category				1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27 N/mm	156 ppi		2,483 psi
	Average Strength @ Break	38 N/mm	217 ppi		3,437 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.57
Lo = 2.0" Break	Average Elongation @ Break	%			577.2
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	240.9 N			54.151 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	468.3 N			105.28 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	612.1 N			137.60 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-5-06

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ROLL # **449226-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

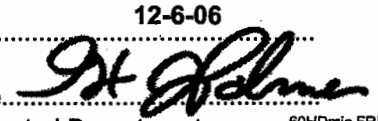
Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.47 mm	58 mil
	MAX:	1.91 mm	75 mil
Asperity GRI GM12: 35 mil ODD #: TOP EVEN #: BOTTOM	AVE:	1.65 mm	65 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min		.26	
Carbon Black Content ASTM D4218	Range		%		2.23	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	154 ppi	2,365	psi
	Average Strength @ Break	32	N/mm	182 ppi	2,806	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		18.35	
Lo = 2.0" Break	Average Elongation @ Break		%		470.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5	N		56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7	N		95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4	N		135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **12-6-06**

Signature: 

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ROLL # **449227-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.44 mm	57 mil
	MAX:	1.77 mm	70 mil
Asperity GRI GM12: 28 mil	AVE:	1.58 mm	62 mil

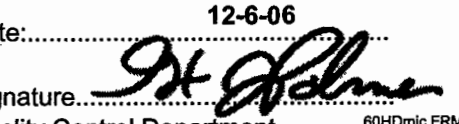
ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm		60 mil
Length.....	125 m		410.1 feet
Width.....	7.00 m;		23.0 feet
OIT(Standard) ASTM D3895 minutes	199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.23	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	147 ppi		2,365	psi
	Average Strength @ Break	31 N/mm	175 ppi		2,806	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			18.35	
Lo = 2.0" Break	Average Elongation @ Break	%			470.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5 N			56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7 N			95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4 N			135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: 

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ROLL # **449228-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.46 mm	57 mil
	MAX:	1.84 mm	72 mil
Asperity GRI GM12: 36 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.62 mm	64 mil

Thickness.....	1.5 mm		60 mil
Length.....	125 m		410.1 feet
Width.....	7.00 m;		23.0 feet
OIT(Standard) ASTM D3895	minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min		.26	
Carbon Black Content ASTM D4218	Range		%		2.23	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	151 ppi	2,365	psi
	Average Strength @ Break	31	N/mm	179 ppi	2,806	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		18.35	
Lo = 2.0" Break	Average Elongation @ Break		%		470.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5	N		56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7	N		95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4	N		135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date:..... 12-6-06

Signature.....

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ROLL # **449229-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

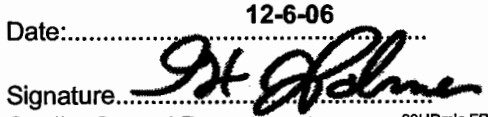
Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.44 mm	57 mil
	MAX:	1.77 mm	70 mil
Asperity GRI GM12: 27 mil ODD #: TOP EVEN #: BOTTOM	AVE:	1.59 mm	63 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc		.947	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g		g/10 min		.26	
Carbon Black Content ASTM D4218	Range		%		2.23	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	148 ppi	2,365	psi
	Average Strength @ Break	31	N/mm	176 ppi	2,806	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%		18.35	
Lo = 2.0" Break	Average Elongation @ Break		%		470.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%		-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5	N		56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7	N		95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4	N		135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: 

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ROLL # **449230-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

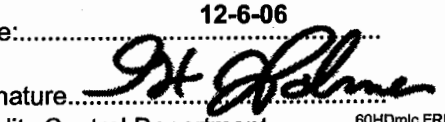
Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.52 mm	60 mil
	MAX:	1.87 mm	74 mil
Asperity GRI GM12: 35 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.66 mm	65 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.23	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27 N/mm	155 ppi		2,365	psi
	Average Strength @ Break	32 N/mm	183 ppi		2,806	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			18.35	
Lo = 2.0" Break	Average Elongation @ Break	%			470.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5 N			56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7 N			95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4 N			135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: **12-6-06**

Signature: 

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ROLL # **449231-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.46 mm	57 mil
	MAX:	1.77 mm	70 mil
Asperity GRI GM12: 25 mil	AVE:	1.60 mm	63 mil

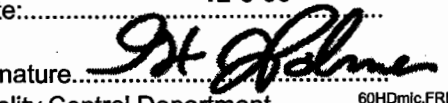
ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895	minutes 199	

					TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc			.947
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min			.26
Carbon Black Content ASTM D4218	Range	%			2.14
Carbon Black Dispersion ASTM D5596	Category				1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	159 ppi	2,526	psi
	Average Strength @ Break	38 N/mm	219 ppi	3,479	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		18.61	
Lo = 2.0" Break	Average Elongation @ Break	%		537.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5 N		56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7 N		95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4 N		135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: 

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ROLL # **449332-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.53 mm	60 mil
	MAX:	1.86 mm	73 mil
Asperity GRI GM12: 36 mil	AVE:	1.67 mm	66 mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min			.26	
Carbon Black Content ASTM D4218	Range		%			2.14	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	29	N/mm	166	ppi	2,526	psi
	Average Strength @ Break	40	N/mm	229	ppi	3,479	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield		%			18.61	
	Average Elongation @ Break		%			537.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5	N			56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7	N			95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4	N			135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: [signature]

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ROLL # **449333-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.43 mm	56 mil
	MAX:	1.67 mm	66 mil
Asperity GRI GM12: 28 mil	AVE:	1.53 mm	60 mil

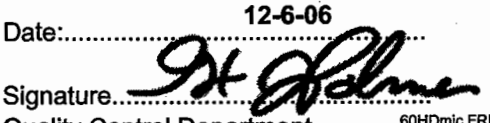
ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

						TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc		.947	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190°C /2160 g			g/10 min		.26	
Carbon Black Content ASTM D4218	Range			%		2.14	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	152	ppi	2,526	psi
	Average Strength @ Break	37	N/mm	210	ppi	3,479	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield		%			18.61	
	Average Elongation @ Break		%			537.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5	N			56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7	N			95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4	N			135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: 

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ROLL # **449334-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.56	mm	61	mil
	MAX:	1.84	mm	72	mil
Asperity GRI GM12: 34 mil	AVE:	1.68	mm	66	mil

ODD # : TOP EVEN #: BOTTOM

Thickness..... 1.5 mm 60 mil
Length..... 125 m 410.1 feet
Width..... 7.00 m; 23.0 feet

OIT(Standard) ASTM D3895 minutes 199

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.14	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	29	N/mm	167 ppi	2,526	psi
	Average Strength @ Break	40	N/mm	230 ppi	3,479	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			18.61	
Lo = 2.0" Break	Average Elongation @ Break	%			537.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5	N		56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7	N		95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4	N		135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: [signature]
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ROLL # **449335-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.45 mm	57 mil
	MAX:	1.78 mm	70 mil
Asperity GRI GM12: 26 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.62 mm	64 mil

Thickness.....	1.5 mm		60 mil
Length.....	125 m		410.1 feet
Width.....	7.00 m;		23.0 feet
OIT(Standard) ASTM D3895 minutes	199		

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min			.26	
Carbon Black Content ASTM D4218	Range		%			2.14	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	161	ppi	2,526	psi
	Average Strength @ Break	39	N/mm	222	ppi	3,479	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			18.61	
Lo = 2.0" Break	Average Elongation @ Break		%			537.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	251.5	N			56.552	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	425.7	N			95.715	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.4	N			135.87	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: H Holmes

Quality Control Department

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ROLL # **449336-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.50 mm	59 mil
	MAX:	1.95 mm	77 mil
Asperity GRI GM12: 37 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.64 mm	65 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

						TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc		.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g			g/10 min		.26	
Carbon Black Content ASTM D4218	Range			%		2.37	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158	ppi	2,448	psi
	Average Strength @ Break	39	N/mm	222	ppi	3,443	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			18.24	
Lo = 2.0" Break	Average Elongation @ Break		%			540.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	262.2	N			58.956	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	419.3	N			94.265	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.0	N			135.78	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: H Holmes

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ROLL # **449337-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.44	mm	57	mil
	MAX:	1.77	mm	70	mil
Asperity GRI GM12: 28 mil	AVE:	1.61	mm	63	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet

OIT(Standard) ASTM D3895 minutes **199**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min				.26	
Carbon Black Content ASTM D4218	Range	%				2.37	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi	2,448	psi
	Average Strength @ Break	38	N/mm	218	ppi	3,443	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				18.24	
Lo = 2.0" Break	Average Elongation @ Break	%				540.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	262.2	N			58.956	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	419.3	N			94.265	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.0	N			135.78	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature [signature]
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ROLL # **449338-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.48 mm	58 mil
	MAX:	1.79 mm	70 mil
Asperity GRI GM12: 38 mil ODD # : TOP EVEN #: BOTTOM	AVE:	1.64 mm	65 mil

Thickness.....	1.5 mm	60 mil
Length.....	125 m	410.1 feet
Width.....	7.00 m;	23.0 feet
OIT(Standard) ASTM D3895 minutes	199	

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g		g/10 min			.26	
Carbon Black Content ASTM D4218	Range		%			2.37	
Carbon Black Dispersion ASTM D5596	Category					1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158	ppi	2,448	psi
	Average Strength @ Break	39	N/mm	222	ppi	3,443	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield		%			18.24	
	Average Elongation @ Break		%			540.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	262.2	N			58.956	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	419.3	N			94.265	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.0	N			135.78	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: [signature]
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ROLL # **449339-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.44	mm	57	mil
	MAX:	1.79	mm	70	mil
Asperity GRI GM12: 26 mil	AVE:	1.62	mm	64	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5 mm	60 mil	
Length.....	125 m	410.1	feet
Width.....	7.00 m;	23.0	feet
OIT(Standard) ASTM D3895	minutes 199		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.37	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	156 ppi	2,448	psi
	Average Strength @ Break	38	N/mm	220 ppi	3,443	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			18.24	
Lo = 2.0" Break	Average Elongation @ Break	%			540.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	262.2	N		58.956	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	419.3	N		94.265	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.0	N		135.78	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: M Holmes

Quality Control Department

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ROLL # **449340-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC	ENGLISH
	MIN:	1.47 mm	58 mil
	MAX:	1.86 mm	73 mil
Asperity GRI GM12: 39 mil	AVE:	1.66 mm	65 mil

ODD # : TOP EVEN #: BOTTOM

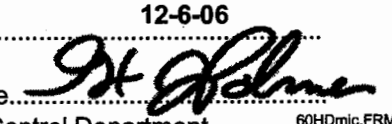
Thickness..... 1.5 mm 60 mil
Length..... 125 m 410.1 feet
Width..... 7.00 m; 23.0 feet

OIT(Standard) ASTM D3895 minutes 199

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190°C /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.37	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	160 ppi		2,448	psi
	Average Strength @ Break	39 N/mm	225 ppi		3,443	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			18.24	
Lo = 2.0" Break	Average Elongation @ Break	%			540.9	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	262.2 N			58.956	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	419.3 N			94.265	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.0 N			135.78	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date: 12-6-06

Signature: 

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ROLL # **449341-06** Lot #: **8161023** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	1.53	mm	60	mil
	MAX:	1.84	mm	72	mil
Asperity GRI GM12: 27 mil	AVE:	1.65	mm	65	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	1.5	mm	60 mil
Length.....	125	m	410.1 feet
Width.....	7.00	m;	23.0 feet

OIT(Standard) ASTM D3895 minutes 199

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.947	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min			.26	
Carbon Black Content ASTM D4218	Range	%			2.40	
Carbon Black Dispersion ASTM D5596	Category				1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	30	N/mm	171 ppi	2,639	psi
	Average Strength @ Break	40	N/mm	230 ppi	3,537	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			18.59	
Lo = 2.0" Break	Average Elongation @ Break	%			525.0	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-0.65	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	262.2	N		58.956	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	419.3	N		94.265	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	604.0	N		135.78	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Allied Waste Industries, Inc.**
PO: **Charlotte Motor Speedway**
Destination **Concord, NC**

Date:..... 12-6-06

Signature.....

Quality Control Department

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Chevron Phillips Chemical Company LP

CoA Date: 10/18/2006

Certificate of Analysis

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

Recipient: PALMER
Fax:

CPC Delivery #: 87255945
PO #: 004456
Weight: 184600 LB
Ship Date: 10/18/2006
Package: BULK
Mode: Hopper Car
Car #: GOCX058039
Seal No: 201139

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: 8161020

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.260	g/10mi
HLMI Flow Rate	ASTM D1238	21.00	g/10mi
Density	ASTM D1505	0.9370	g/cm3
Pellet Count	P02.08.03	27.000	pel/g
Production Date		08/13/2006	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP.
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.

Jackie Edwards
Certification Systems Specialist

For CoA questions contact Tom Scheirman at 832-813-4637

Chevron Phillips Chemical Company LP

CoA Date: 10/23/2006

Certificate of Analysis

Shipped To: AGRU AMERICA INC 500 GARRISON RD GEORGETOWN SC 29440 USA	CPC Delivery #: 87257122 PO #: 004456 Weight: 184400 LB Ship Date: 10/19/2006 Package: BULK
Recipient: PALMER Fax:	Mode: Hopper Car Car #: CHVX898240 Seal No: 201137

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: 8161023

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.260	g/10mi
HLMI Flow Rate	ASTM D1238	23.00	g/10mi
Density	ASTM D1505	0.9380	g/cm3
Pellet Count	P02.08.03	27.000	pel/g
Production Date		08/13/2006	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP.
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.

Jackie Edwards
Certification Systems Specialist

For CoA questions contact Tom Scheirman at 832-813-4637

agru america inc

SP NOTCHED CONSTANT TENSILE LOAD ASTM D 5397 APPENDIX A

LOT # : 8161020 MATERIAL : K307 DATE : 11-20-06

ROLL # 246770-06 LINER TYPE 60 HD SMOOTH REF # : 1381

FORMULA FOR APPLIED LOAD : Load = $\frac{(\text{str@yld} \times \%\text{test} \times (80\% \text{ of nom. thickness}) \times \text{width}) - CF}{MA}$

where :

str@yld = Tensile strength @ yield (Transverse Direction) from ASTM D-638 in psi

thickness = Thickness of sample at notch point in inches

width = Width of sample in inches (.125" constant)

MA = Mechanical Advantage Used (1:1, 3:1, 4:1, or 5:1)

CF = Correction Factor for MA Stations is 77g (weight of arm with empty holder attached to other end)

Therefore, for each sample, **load = (str@yld x nom. thickness x .0300*----->([%TEST] x .8 x .125))-CF/MA**

*** This number may change due to customer specifications. Formula will be changed also.**

Strength @ yield for this roll : 2,644 psi % of yield tested : 30 %

Station used: Mechanical Advantage Used: 5 CF = 77 g

Nominal Thickness (in): 0.0600

LOAD = str@yld x nominal thickness x formula

LOAD = 2,644 x 0.060 x formula

LOAD = 416 g

PASS @ 400 HRS

Specimen Thickness		Notch Depth		PASS / FAIL ?	Failure at
#1	0.0615	#1	0.0135	PASS	hours
#2	0.0616	#2	0.0136	PASS	hours
#3	0.0618	#3	0.0138	PASS	hours
#4	0.0614	#4	0.0134	PASS	hours
#5	0.0615	#5	0.0135	PASS	hours

Comments: All Samples Removed After 418 Hours With No Breaks.

Tested By: JE

Checked By: GP

Test Conditions (At Notching) Temp: 71 Humidity: 52

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REV 01
8/10/04

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SP NOTCHED CONSTANT TENSILE LOAD ASTM D 5397 APPENDIX A

LOT # : 8161023 MATERIAL : K307 DATE : 12-4-06

ROLL # 448681-06 LINER TYPE 60 HD MICRO REF # : 1382

FORMULA FOR APPLIED LOAD : Load = $\frac{(\text{str@yld} \times \%\text{test} \times (80\% \text{ of nom. thickness}) \times \text{width}) - CF}{MA}$

where :

str@yld = Tensile strength @ yield (Transverse Direction) from ASTM D-638 in psi

thickness = Thickness of sample at notch point in inches

width = Width of sample in inches (.125" constant)

MA = Mechanical Advantage Used (1:1, 3:1, 4:1, or 5:1)

CF = Correction Factor for MA Stations is 77g (weight of arm with empty holder attached to other end)

Therefore, for each sample, **load = (str@yld x nom. thickness x .0300*----->([%TEST] x .8 x .125))-CF/MA**

*** This number may change due to customer specifications. Formula will be changed also.**

Strength @ yield for this roll : 2,595 psi % of yield tested : 30 %

Station used: Mechanical Advantage Used: 5 CF = 77 g

Nominal Thickness (in): 0.0600

LOAD = str@yld x nominal thickness x formula

LOAD = 2,595 x 0.060 x formula

LOAD = 408 g

PASS @ 300 HRS

Specimen Thickness		Notch Depth		PASS / FAIL ?	Failure at
#1	0.0613	#1	0.0133	pass	hours
#2	0.0615	#2	0.0135	pass	hours
#3	0.0610	#3	0.0130	pass	hours
#4	0.0619	#4	0.0139	pass	hours
#5	0.0617	#5	0.0137	pass	hours

Comments: all specimens have passed 200 hours with no breaks

Tested By: JE

Checked By: GP

Test Conditions **Temp:** 71

(At Notching) **Humidity:** 52

NCTL.FRM
REV 01
8/10/04

Chevron Phillips Chemical Company LP

Rex L. Bobsein, Ph.D., Polyethylene Materials and Applications Development
Room 109 PTC ■ Bartlesville, OK 74004■
918-661-0089 ■ bobserl@cpchem.com ■ Fax: 918-662-2550 ■ www.cpchem.com

January 16, 2006

Grant Palmer
Agru America
500 Garrison Road
Georgetown, SC 29440

Dear Grant:

This letter is to re-report the results of oven aging and UV aging testing (according to GRI-GM13 and GRI-GM17) on Agru America sheet samples that you provided to us in 2004. A graphical summary of the results was sent to you on 4/1/2005. The testing was performed by CPChem's Evaluation Laboratory in Bartlesville, OK. Oven-aging tests were completed 12/17/2004. UV-aging tests were completed on 12/13/2004.

GRI-GM13 (HDPE) and GRI-GM17 (LLDPE) durability testing was done according to the following procedures.

Test	Exposure	Method
Std. OIT	200°C, atmospheric pressure oxygen	D3895
HP-OIT	150°C, 500 psi oxygen	D5885
Oven Aging	90 days, 85°C	D5721
UV Aging	1600 UV hrs (Conditions were 20 hours UVA-340 at 75°C followed by 4 hrs dark with condensation at 60°C. Irradiance was 0.72 W/m^2 at 340nm.)	GRI-GM11

Oven Aging Results

Sample	Initial HP-OIT (min.)	HP-OIT Value after Oven Aging (min.)	% HP-OIT Retained	GRI-GM13 or GRI-GM17 % Retained Requirement
40 mil LLDPE Roll # 312588 from Marlex® 7104 Lot # CPN811170	514	396	77	60
60 mil HDPE Roll # 315103-04 from Marlex® K307 Lot # 71-3-1465	1461	1547	106	80

Sample	Initial Std. OIT (min.)	Std. OIT Value after Oven Aging (min.)	% Std. OIT Retained	GRI-GM13 or GRI-GM17 % Retained Requirement
40 mil LLDPE Roll # 312588 from Marlex® 7104 Lot # CPN811170	151	58	38	35
60 mil HDPE Roll # 315103-04 from Marlex® K307 Lot # 71-3-1465	201	127	63	55

UV Aging Results

Sample	Initial HP-OIT (min.)	HP-OIT Value after UV Aging (min.)	% HP-OIT Retained	GRI-GM13 or GRI-GM17 % Retained Requirement
40 mil LLDPE Roll # 312588 from Marlex® 7104 Lot # CPN811170	514	460	89	35
60 mil HDPE Roll # 315103-04 from Marlex® K307 Lot # 71-3-1465	1461	1513	104	50

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

If you have any questions, please call me at 918-661-0089.

Sincerely,

Rex L. Bobsein

Rex L. Bobsein, Ph.D.
Polyethylene Materials and Applications Development

Any technical advice, recommendations, results, or analysis ("Information") contained herein, including, without limitation, Information as it may relate to the selection of a specific product ("Product") for your use and application, is given ***without warranty or guarantee*** *and is accepted at your sole risk. It is imperative that you test the Information (and Product, if applicable) to determine to your own satisfaction whether the Information (and Product, if applicable) are suitable for your intended use and application.* ***You expressly assume, and release Chevron Phillips Chemical Company, from all risk and liability, whether based in contract, tort or otherwise, in connection with the use of, or results obtained from, such Information (and Product, if applicable).***

ACC of NORTH CAROLINA, LLC

SECTION H-2

Geosynthetic Clay liner

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

Date: 2/27/2007
Purchase Order: F31-53080
ORDER NUMBERS: 022376301, 022376302, 022376303, 022376304, 022376310, 022376311

Mike Gurley
Allied Waste

Concorde, NC 28027
mike.gurley@awin.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Allied Waste. The shipments left our Cartersville, Georgia plant on 02/23/2007.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Charlotte Motor Speedway
CUSTOMER P.O.: F31-53080
ORDER NUMBERS: 022376301, 022376302, 022376303, 022376304, 022376310, 022376311
PREPARED FOR: Allied Waste

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

PRODUCTION CERTIFICATION

PROJECT NAME: Charlotte Motor Speedway
CUSTOMER P.O.: F31-53080
PREPARED FOR: Allied Waste

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION 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. Any detected needles, which can be identified without damaging the GCL, are removed from the product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Melanie King

Ship Date: 02/23/2007
Order Numbers: 022376301, 022376302, 022376303, 022376304, 022376310, 022376311
Prepared For: Allied Waste

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties 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 (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	22.5 lbs/in (40 N/cm) MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	2.5 lbs/in (4.4 N/cm) Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

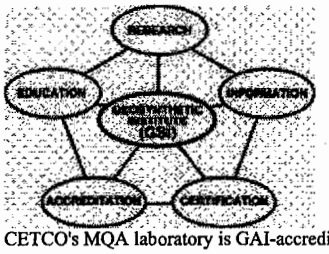
Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 5890	Bentonite Swell Index	1/100,000sf	24 ml/2g min	Standard
ASTM D 5891	Bentonite Fluid Loss	1/100,000sf	18 ml max	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000sf	5x10-9 cm/sec max	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/in	Standard

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.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.



CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 022376301

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376310	CV-BENTOMAT ST	200708CV	00001114	150	15	2250	2622
022376310	CV-BENTOMAT ST	200708CV	00001117	150	15	2250	2624
022376311	CV-BENTOMAT ST	200708CV	00001120	150	15	2250	2648
022376310	CV-BENTOMAT ST	200708CV	00001129	150	15	2250	2644
022376311	CV-BENTOMAT ST	200708CV	00001131	150	15	2250	2648
022376302	CV-BENTOMAT ST	200708CV	00001138	150	15	2250	2690
022376311	CV-BENTOMAT ST	200708CV	00001144	150	15	2250	2638
022376310	CV-BENTOMAT ST	200708CV	00001145	150	15	2250	2590
022376311	CV-BENTOMAT ST	200708CV	00001146	150	15	2250	2608
022376311	CV-BENTOMAT ST	200708CV	00001156	150	15	2250	2604
022376311	CV-BENTOMAT ST	200708CV	00001160	150	15	2250	2606
022376310	CV-BENTOMAT ST	200708CV	00001163	150	15	2250	2602
022376310	CV-BENTOMAT ST	200708CV	00001169	150	15	2250	2620
022376304	CV-BENTOMAT ST	200708CV	00001173	150	15	2250	2580
022376304	CV-BENTOMAT ST	200708CV	00001174	150	15	2250	2594
022376310	CV-BENTOMAT ST	200708CV	00001185	150	15	2250	2618
022376311	CV-BENTOMAT ST	200708CV	00001191	150	15	2250	2628
022376311	CV-BENTOMAT ST	200708CV	00001200	150	15	2250	2610
022376303	CV-BENTOMAT ST	200708CV	00001209	150	15	2250	2622
022376302	CV-BENTOMAT ST	200708CV	00001227	150	15	2250	2624
022376302	CV-BENTOMAT ST	200708CV	00001229	150	15	2250	2606
022376303	CV-BENTOMAT ST	200708CV	00001241	150	15	2250	2650
022376311	CV-BENTOMAT ST	200708CV	00001244	150	15	2250	2616
022376310	CV-BENTOMAT ST	200708CV	00001247	150	15	2250	2838
022376303	CV-BENTOMAT ST	200708CV	00001253	150	15	2250	2596
022376303	CV-BENTOMAT ST	200708CV	00001257	150	15	2250	2594
022376303	CV-BENTOMAT ST	200708CV	00001265	150	15	2250	2872

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376304	CV-BENTOMAT ST	200708CV	00001268	150	15	2250	2624
022376304	CV-BENTOMAT ST	200708CV	00001274	150	15	2250	2634
022376302	CV-BENTOMAT ST	200708CV	00001279	150	15	2250	2632
022376303	CV-BENTOMAT ST	200708CV	00001280	150	15	2250	2656
022376302	CV-BENTOMAT ST	200708CV	00001283	150	15	2250	2626
022376304	CV-BENTOMAT ST	200708CV	00001284	150	15	2250	2634
022376304	CV-BENTOMAT ST	200708CV	00001285	150	15	2250	2634
022376303	CV-BENTOMAT ST	200708CV	00001286	150	15	2250	2638
022376304	CV-BENTOMAT ST	200708CV	00001287	150	15	2250	2630
022376302	CV-BENTOMAT ST	200708CV	00001288	150	15	2250	2630
022376302	CV-BENTOMAT ST	200708CV	00001290	150	15	2250	2632
022376302	CV-BENTOMAT ST	200708CV	00001291	150	15	2250	2638
022376302	CV-BENTOMAT ST	200708CV	00001292	150	15	2250	2632
022376302	CV-BENTOMAT ST	200708CV	00001293	150	15	2250	2624
022376304	CV-BENTOMAT ST	200708CV	00001316	150	15	2250	2636
022376303	CV-BENTOMAT ST	200708CV	00001323	150	15	2250	2688
022376304	CV-BENTOMAT ST	200708CV	00001328	150	15	2250	2666
022376311	CV-BENTOMAT ST	200708CV	00001331	150	15	2250	2640
022376310	CV-BENTOMAT ST	200708CV	00001338	150	15	2250	2650
022376311	CV-BENTOMAT ST	200708CV	00001339	150	15	2250	2702
022376303	CV-BENTOMAT ST	200708CV	00001340	150	15	2250	2670
022376304	CV-BENTOMAT ST	200708CV	00001342	150	15	2250	2620
022376304	CV-BENTOMAT ST	200708CV	00001343	150	15	2250	2628
022376310	CV-BENTOMAT ST	200708CV	00001344	150	15	2250	2616
022376303	CV-BENTOMAT ST	200708CV	00001345	150	15	2250	2606
022376311	CV-BENTOMAT ST	200708CV	00001346	150	15	2250	2612
022376302	CV-BENTOMAT ST	200708CV	00001347	150	15	2250	2626
022376311	CV-BENTOMAT ST	200708CV	00001348	150	15	2250	2588
022376302	CV-BENTOMAT ST	200708CV	00001349	150	15	2250	2616
022376302	CV-BENTOMAT ST	200708CV	00001350	150	15	2250	2620
022376301	CV-BENTOMAT ST	200708CV	00001351	150	15	2250	2618
022376302	CV-BENTOMAT ST	200708CV	00001352	150	15	2250	2620

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376302	CV-BENTOMAT ST	200708CV	00001354	150	15	2250	2632
022376302	CV-BENTOMAT ST	200708CV	00001355	150	15	2250	2638
022376302	CV-BENTOMAT ST	200708CV	00001356	150	15	2250	2626
022376310	CV-BENTOMAT ST	200708CV	00001361	150	15	2250	2630
022376310	CV-BENTOMAT ST	200708CV	00001366	150	15	2250	2630
022376303	CV-BENTOMAT ST	200708CV	00001368	150	15	2250	2650
022376304	CV-BENTOMAT ST	200708CV	00001373	150	15	2250	2626
022376304	CV-BENTOMAT ST	200708CV	00001374	150	15	2250	2624
022376303	CV-BENTOMAT ST	200708CV	00001375	150	15	2250	2618
022376310	CV-BENTOMAT ST	200708CV	00001376	150	15	2250	2612
022376301	CV-BENTOMAT ST	200708CV	00001378	150	15	2250	2630
022376301	CV-BENTOMAT ST	200708CV	00001379	150	15	2250	2618
022376301	CV-BENTOMAT ST	200708CV	00001380	150	15	2250	2616
022376301	CV-BENTOMAT ST	200708CV	00001381	150	15	2250	2624
022376301	CV-BENTOMAT ST	200708CV	00001382	150	15	2250	2628
022376310	CV-BENTOMAT ST	200708CV	00001383	150	15	2250	2650
022376301	CV-BENTOMAT ST	200708CV	00001384	150	15	2250	2620
022376301	CV-BENTOMAT ST	200708CV	00001385	150	15	2250	2618
022376303	CV-BENTOMAT ST	200708CV	00001386	150	15	2250	2620
022376303	CV-BENTOMAT ST	200708CV	00001397	150	15	2250	2732
022376311	CV-BENTOMAT ST	200708CV	00001398	150	15	2250	2618
022376310	CV-BENTOMAT ST	200708CV	00001400	150	15	2250	2628
022376301	CV-BENTOMAT ST	200708CV	00001401	150	15	2250	2632
022376301	CV-BENTOMAT ST	200708CV	00001402	150	15	2250	2626
022376311	CV-BENTOMAT ST	200708CV	00001406	150	15	2250	2628
022376311	CV-BENTOMAT ST	200708CV	00001409	150	15	2250	2624
022376301	CV-BENTOMAT ST	200708CV	00001411	150	15	2250	2622
022376304	CV-BENTOMAT ST	200708CV	00001415	150	15	2250	2904
022376301	CV-BENTOMAT ST	200708CV	00001417	150	15	2250	2624
022376301	CV-BENTOMAT ST	200708CV	00001418	150	15	2250	2618
022376301	CV-BENTOMAT ST	200708CV	00001420	150	15	2250	2620
022376301	CV-BENTOMAT ST	200708CV	00001423	150	15	2250	2622

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376304	CV-BENTOMAT ST	200708CV	00001424	150	15	2250	2622
022376303	CV-BENTOMAT ST	200708CV	00001425	150	15	2250	2620
022376301	CV-BENTOMAT ST	200708CV	00001426	150	15	2250	2606
022376301	CV-BENTOMAT ST	200708CV	00001428	150	15	2250	2626
022376303	CV-BENTOMAT ST	200708CV	00001441	150	15	2250	2626
022376303	CV-BENTOMAT ST	200708CV	00001442	150	15	2250	2634
022376310	CV-BENTOMAT ST	200708CV	00001444	150	15	2250	2678
022376310	CV-BENTOMAT ST	200708CV	00001445	150	15	2250	2646
022376311	CV-BENTOMAT ST	200708CV	00001448	150	15	2250	2648
022376304	CV-BENTOMAT ST	200708CV	00001449	150	15	2250	2616
022376304	CV-BENTOMAT ST	200708CV	00001452	150	15	2250	2618
			Totals:	**15300**	**1530**	**229500**	**268826**
						Total Number of Rolls Certified: **102**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 022376301

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001114	00001109	2007674084			2007577259	769366A
200708CV	00001117	00001109	2007674084			2007698236	769366B
200708CV	00001120	00001109	2007674082			2007698236	769366B
200708CV	00001129	00001124	2007674069			2007698236	769366B
200708CV	00001131	00001124	2007674069			2007698236	769366B
200708CV	00001138	00001138	2007674071			2007698236	769366B
200708CV	00001144	00001138	2007674071			2007698236	769366B
200708CV	00001145	00001138	2007674071			2007696335	769366B
200708CV	00001146	00001138	2007674071			2007696335	769366B
200708CV	00001156	00001153	200707CV	00000405	00000403	2007696335	769366B
200708CV	00001160	00001153	200707CV	00000405	00000403	2007696335	769979A
200708CV	00001163	00001153	200707CV	00000405	00000403	2007696335	769979A
200708CV	00001169	00001168	200707CV	00000403	00000403	2007696335	769979A
200708CV	00001173	00001168	200707CV	00000403	00000403	2007586038	769979A
200708CV	00001174	00001168	200707CV	00000404	00000403	2007586038	769979A
200708CV	00001185	00001182	200707CV	00000402	00000394	2007586038	769979A
200708CV	00001191	00001182	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001200	00001197	200707CV	00000398	00000394	2007586038	769979A
200708CV	00001209	00001197	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001227	00001226	200708CV	00000442	00000436	2007696331	769979B
200708CV	00001229	00001226	200708CV	00000442	00000436	2007483477	769979B
200708CV	00001241	00001241	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001244	00001241	200707CV	00000396	00000394	2007483477	769979B
200708CV	00001247	00001241	200707CV	00000396	00000394	2007483477	769982A
200708CV	00001253	00001241	200707CV	00000395	00000394	2007483477	769982A
200708CV	00001257	00001256	200707CV	00000395	00000394	2007483477	769982A
200708CV	00001265	00001264	200708CV	00000444	00000436	2007586039	769982A
200708CV	00001268	00001264	200708CV	00000444	00000436	2007586039	769982A
200708CV	00001274	00001264	200707CV	00000387	00000078	2007586039	769982A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001279	00001264	200707CV	00000387	00000078	2007586039	769982A
200708CV	00001280	00001280	200707CV	00000386	00000078	2007586039	769982A
200708CV	00001283	00001280	200707CV	00000386	00000078	2007586039	769982A
200708CV	00001284	00001280	200707CV	00000386	00000078	2007586039	769982A
200708CV	00001285	00001280	200707CV	00000386	00000078	2007586039	769982A
200708CV	00001286	00001280	200707CV	00000386	00000078	2007586039	769982A
200708CV	00001287	00001280	200707CV	00000386	00000078	2007696332	769982A
200708CV	00001288	00001280	200707CV	00000386	00000078	2007696332	769982A
200708CV	00001290	00001280	200707CV	00000401	00000394	2007696332	769982A
200708CV	00001291	00001280	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001292	00001280	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001293	00001280	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001316	00001309	200707CV	00000409	00000407	2007696332	769982B
200708CV	00001323	00001309	200707CV	00000411	00000407	2007696332	769982B
200708CV	00001328	00001324	200707CV	00000411	00000407	2007696332	769982B
200708CV	00001331	00001324	200707CV	00000410	00000407	2007696332	769982B
200708CV	00001338	00001324	200707CV	00000408	00000407	2007696332	769361A
200708CV	00001339	00001324	200707CV	00000408	00000407	2007696332	769361A
200708CV	00001340	00001340	200707CV	00000408	00000407	2007696332	769361A
200708CV	00001342	00001340	200707CV	00000408	00000407	2007696332	769361A
200708CV	00001343	00001340	200707CV	00000408	00000407	2007696332	769361A
200708CV	00001344	00001340	200707CV	00000408	00000407	2007696332	769361A
200708CV	00001345	00001340	200707CV	00000408	00000407	2007696332	769361A
200708CV	00001346	00001340	200707CV	00000407	00000407	2007696332	769361A
200708CV	00001347	00001340	200707CV	00000407	00000407	2007696332	769361A
200708CV	00001348	00001340	200707CV	00000407	00000407	2007581244	769361A
200708CV	00001349	00001340	200707CV	00000407	00000407	2007581244	769361A
200708CV	00001350	00001340	200707CV	00000407	00000407	2007581244	769361A
200708CV	00001351	00001340	200707CV	00000407	00000407	2007581244	769361A
200708CV	00001352	00001340	200707CV	00000407	00000407	2007581244	769361A
200708CV	00001354	00001353	200706CV	00000352	00000349	2007581244	769361A
200708CV	00001355	00001353	200706CV	00000352	00000349	2007581244	769361A
200708CV	00001356	00001353	200706CV	00000352	00000349	2007581244	769361A
200708CV	00001361	00001353	200703CV	00000172	00000169	2007581244	769361A
200708CV	00001366	00001353	200703CV	00000172	00000169	2007581244	769361A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001368	00001368	200703CV	00000173	00000169	2007581244	769361A
200708CV	00001373	00001368	200703CV	00000173	00000169	2007581244	769361A
200708CV	00001374	00001368	200703CV	00000173	00000169	2007581244	769361A
200708CV	00001375	00001368	200703CV	00000173	00000169	2007581244	769361A
200708CV	00001376	00001368	200703CV	00000155	00000152	2007577258	769361A
200708CV	00001378	00001368	200703CV	00000155	00000152	2007577258	769361B
200708CV	00001379	00001368	200703CV	00000155	00000152	2007577258	769361B
200708CV	00001380	00001368	200703CV	00000155	00000152	2007577258	769361B
200708CV	00001381	00001368	200703CV	00000155	00000152	2007577258	769361B
200708CV	00001382	00001368	200703CV	00000155	00000152	2007577258	769361B
200708CV	00001383	00001383	200703CV	00000155	00000152	2007577258	769361B
200708CV	00001384	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001385	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001386	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001397	00001397	200708CV	00000448	00000448	2007577258	769361B
200708CV	00001398	00001397	200708CV	00000448	00000448	2007577258	769361B
200708CV	00001400	00001397	200708CV	00000448	00000448	2007577258	769361B
200708CV	00001401	00001397	200703CV	00000170	00000169	2007577258	769361B
200708CV	00001402	00001397	200703CV	00000170	00000169	2007577255	769361B
200708CV	00001406	00001397	200703CV	00000170	00000169	2007577255	769361B
200708CV	00001409	00001397	200708CV	00000449	00000448	2007577255	769361B
200708CV	00001411	00001397	200708CV	00000449	00000448	2007577255	769361B
200708CV	00001415	00001415	200708CV	00000449	00000448	2007577255	769361B
200708CV	00001417	00001415	200708CV	00000449	00000448	2007577255	769361B
200708CV	00001418	00001415	200708CV	00000450	00000450	2007577255	769361B
200708CV	00001420	00001415	200708CV	00000450	00000450	2007577255	769361B
200708CV	00001423	00001415	200708CV	00000450	00000450	2007577255	754296A
200708CV	00001424	00001415	200708CV	00000450	00000450	2007577255	754296A
200708CV	00001425	00001415	200708CV	00000450	00000450	2007577255	754296A
200708CV	00001426	00001415	200708CV	00000450	00000450	2007577255	754296A
200708CV	00001428	00001415	200708CV	00000453	00000450	2007577255	754296A
200708CV	00001441	00001430	200708CV	00000452	00000450	2007604930	754296A
200708CV	00001442	00001430	200708CV	00000452	00000450	2007604930	754296A
200708CV	00001444	00001444	200708CV	00000454	00000454	2007604930	754296A
200708CV	00001445	00001444	200708CV	00000454	00000454	2007604930	754296A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001448	00001444	200708CV	00000454	00000454	2007604930	754296A
200708CV	00001449	00001444	200708CV	00000454	00000454	2007604930	754296A
200708CV	00001452	00001444	200708CV	00000454	00000454	2007604930	754296A

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GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 022376301 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 4632	ASTM D 4632
		Standard Specification:	0.75 lb/sq ft MARV	90lbs MARV	15lbs MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200708CV	00001109	0.89	357.5	36.4
CV-BENTOMAT ST	200708CV	00001124	0.92	357.5	35.4
CV-BENTOMAT ST	200708CV	00001138	0.95	343.0	39.8
CV-BENTOMAT ST	200708CV	00001153	0.84	343.0	27.2
CV-BENTOMAT ST	200708CV	00001168	0.88	343.0	59.5
CV-BENTOMAT ST	200708CV	00001182	0.83	343.0	49.6
CV-BENTOMAT ST	200708CV	00001197	0.86	343.0	44.9
CV-BENTOMAT ST	200708CV	00001226	0.84	205.2	38.3
CV-BENTOMAT ST	200708CV	00001241	0.86	205.2	38.8
CV-BENTOMAT ST	200708CV	00001256	0.85	205.2	33.9
CV-BENTOMAT ST	200708CV	00001264	0.87	205.2	36.4
CV-BENTOMAT ST	200708CV	00001280	0.82	205.2	29
CV-BENTOMAT ST	200708CV	00001309	0.88	278.5	29
CV-BENTOMAT ST	200708CV	00001324	0.89	278.5	27.7
CV-BENTOMAT ST	200708CV	00001340	0.86	278.5	34.1
CV-BENTOMAT ST	200708CV	00001353	0.83	278.5	32.4
CV-BENTOMAT ST	200708CV	00001368	0.86	278.5	28.1
CV-BENTOMAT ST	200708CV	00001383	0.84	278.5	26.1
CV-BENTOMAT ST	200708CV	00001397	0.84	139.1	56.9
CV-BENTOMAT ST	200708CV	00001415	0.90	139.1	48.2
CV-BENTOMAT ST	200708CV	00001430	0.89	139.1	42.8
CV-BENTOMAT ST	200708CV	00001444	0.87	139.1	44.5

Product	Lot # Tested	Roll # Tested	Fluid Loss	PEEL 6496	Free Swell
CV-BENTOMAT ST	200708CV	00001109	0.0	7.4	0.0
CV-BENTOMAT ST	200708CV	00001124	0.0	7.4	0.0
CV-BENTOMAT ST	200708CV	00001138	17.4	8.3	28.0
CV-BENTOMAT ST	200708CV	00001153	0.0	5.6	0.0

CV-BENTOMAT ST	200708CV	00001168	0.0	9.7	0.0
CV-BENTOMAT ST	200708CV	00001182	16.5	8.5	28.0
CV-BENTOMAT ST	200708CV	00001197	0.0	9.0	0.0
CV-BENTOMAT ST	200708CV	00001226	17.1	7.6	27.0
CV-BENTOMAT ST	200708CV	00001241	0.0	8.1	0.0
CV-BENTOMAT ST	200708CV	00001256	17.2	7.1	26.0
CV-BENTOMAT ST	200708CV	00001264	0.0	7.7	0.0
CV-BENTOMAT ST	200708CV	00001280	0.0	5.9	0.0
CV-BENTOMAT ST	200708CV	00001309	16.9	6.1	27.0
CV-BENTOMAT ST	200708CV	00001324	0.0	5.8	0.0
CV-BENTOMAT ST	200708CV	00001340	0.0	7.1	0.0
CV-BENTOMAT ST	200708CV	00001353	17.0	6.8	29.0
CV-BENTOMAT ST	200708CV	00001368	0.0	5.6	0.0
CV-BENTOMAT ST	200708CV	00001383	0.0	5.5	0.0
CV-BENTOMAT ST	200708CV	00001397	15.9	10.8	27.0
CV-BENTOMAT ST	200708CV	00001415	0.0	9.4	0.0
CV-BENTOMAT ST	200708CV	00001430	0.0	9.0	0.0
CV-BENTOMAT ST	200708CV	00001444	17.5	9.3	26.0

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce Order 022376301
has been certified by CETCO with the following test results

Reference	Moist	Swell	Fluid Loss
Test Method:	ASTM D 2216	ASTM D 5890	ASTM D 5891
Specification:	12% Max	24 Min	18.0% Max
754296A	7.7	27.0	16.8
769361A	9.5	26.0	16.8
769361B	8.6	26.0	17.6
769366A	10.2	25.0	16.0
769366B	9.9	24.0	16.4
769979A	8.3	26.0	16.4
769979B	8.4	27.0	16.4
769982A	8.9	26.0	16.0
769982B	9.4	27.0	16.4

Tests approved by
Melanie King
CETCO
Quality Assurance Coordinator

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 022376301 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strength
CV-NON-WOVEN	200703CV	00000152	6.6	44.1
CV-NON-WOVEN	200703CV	00000169	6.2	43.0
CV-NON-WOVEN	200706CV	00000349	6.5	21.5
CV-NON-WOVEN	200707CV	00000078	6.5	46.5
CV-NON-WOVEN	200707CV	00000394	6.9	29.0
CV-NON-WOVEN	200707CV	00000403	6.8	26.9
CV-NON-WOVEN	200707CV	00000407	7.1	23.4
CV-NON-WOVEN	200708CV	00000436	6.8	30.4
CV-NON-WOVEN	200708CV	00000448	6.7	27.0
CV-NON-WOVEN	200708CV	00000450	7.5	28.4
CV-NON-WOVEN	200708CV	00000454	7.0	30.5

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 022376301was manufactured with geotextiles which were tested with the following results.

BASE

Material	Roll Number	Mass Area oz/yd2	Grab Strenth lbs
PPX 82TEX	2007483477	3.5	159.1
PPX 82TEX	2007577255	3.5	160.0
PPX 82TEX	2007577258	3.5	160.0
PPX 82TEX	2007577259	3.5	160.0
PPX 82TEX	2007581244	3.4	137.1
PPX 82TEX	2007586038	3.5	155.5
PPX 82TEX	2007586039	3.5	150.1
PPX 82TEX	2007604930	3.4	179.3
PPX 82TEX	2007696331	3.5	193.4
PPX 82TEX	2007696332	3.5	193.4
PPX 82TEX	2007696335	3.5	193.4
PPX 82TEX	2007698236	3.5	146.3

CAP

Material	Roll Number	Mass Area oz/yd2	Grab Strenth lbs
PPX 650	2007674082	7.3	157.1
PPX 650	2007674084	7.3	157.1
PPX 650	2007674069	7.3	124.4
PPX 650	2007674071	7.3	140.5

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.

Date: 2/27/2007

Purchase Order: F31-53080

ORDER NUMBERS: 022376305, 022376306, 022376307, 022376308, 022376309, 022376312, 022376313, 022376316

Mike Gurley
Allied Waste

Concorde, NC 28027
mike.gurley@awin.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Allied Waste. The shipments left our Cartersville, Georgia plant on 02/26/2007.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Charlotte Motor Speedway
CUSTOMER P.O.: F31-53080
ORDER NUMBERS: 022376305, 022376306, 022376307, 022376308, 022376309, 022376312, 022376313, 022376316
PREPARED FOR: Allied Waste

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

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PRODUCTION CERTIFICATION

PROJECT NAME: Charlotte Motor Speedway
CUSTOMER P.O.: F31-53080
PREPARED FOR: Allied Waste

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION 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. Any detected needles, which can be identified without damaging the GCL, are removed from the product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Melanie King

Ship Date: 02/26/2007

Order Numbers: 022376305, 022376306, 022376307, 022376308, 022376309, 022376312, 022376313, 022376316

Prepared For: Allied Waste

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties 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 (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	22.5 lbs/in (40 N/cm) MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	2.5 lbs/in (4.4 N/cm) Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

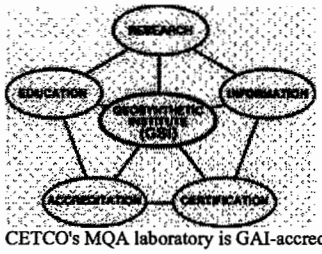
Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 5890	Bentonite Swell Index	1/100,000sf	24 ml/2g min	Standard
ASTM D 5891	Bentonite Fluid Loss	1/100,000sf	18 ml max	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000sf	5x10-9 cm/sec max	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/in	Standard

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.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.



CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 022376305

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376312	CV-BENTOMAT ST	200708CV	00001147	150	15	2250	2622
022376316	CV-BENTOMAT ST	200708CV	00001152	150	15	2250	2606
022376313	CV-BENTOMAT ST	200708CV	00001165	150	15	2250	2592
022376307	CV-BENTOMAT ST	200708CV	00001178	150	15	2250	2598
022376305	CV-BENTOMAT ST	200708CV	00001203	150	15	2250	2594
022376312	CV-BENTOMAT ST	200708CV	00001218	150	15	2250	2632
022376306	CV-BENTOMAT ST	200708CV	00001224	150	15	2250	2630
022376308	CV-BENTOMAT ST	200708CV	00001235	150	15	2250	2628
022376307	CV-BENTOMAT ST	200708CV	00001246	150	15	2250	2594
022376307	CV-BENTOMAT ST	200708CV	00001248	150	15	2250	2536
022376305	CV-BENTOMAT ST	200708CV	00001249	150	15	2250	2604
022376307	CV-BENTOMAT ST	200708CV	00001250	150	15	2250	2598
022376307	CV-BENTOMAT ST	200708CV	00001251	150	15	2250	2600
022376307	CV-BENTOMAT ST	200708CV	00001252	150	15	2250	2598
022376308	CV-BENTOMAT ST	200708CV	00001254	150	15	2250	2560
022376308	CV-BENTOMAT ST	200708CV	00001255	150	15	2250	2592
022376312	CV-BENTOMAT ST	200708CV	00001259	150	15	2250	2618
022376307	CV-BENTOMAT ST	200708CV	00001275	150	15	2250	2630
022376307	CV-BENTOMAT ST	200708CV	00001276	150	15	2250	2632
022376307	CV-BENTOMAT ST	200708CV	00001277	150	15	2250	2630
022376307	CV-BENTOMAT ST	200708CV	00001278	150	15	2250	2640
022376307	CV-BENTOMAT ST	200708CV	00001281	150	15	2250	2632
022376308	CV-BENTOMAT ST	200708CV	00001282	150	15	2250	2644
022376312	CV-BENTOMAT ST	200708CV	00001289	150	15	2250	2620
022376312	CV-BENTOMAT ST	200708CV	00001294	150	15	2250	2630
022376307	CV-BENTOMAT ST	200708CV	00001295	150	15	2250	2658
022376312	CV-BENTOMAT ST	200708CV	00001298	150	15	2250	2636

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376316	CV-BENTOMAT ST	200708CV	00001307	150	15	2250	2624
022376307	CV-BENTOMAT ST	200708CV	00001308	150	15	2250	2622
022376316	CV-BENTOMAT ST	200708CV	00001309	150	15	2250	2666
022376307	CV-BENTOMAT ST	200708CV	00001310	150	15	2250	2638
022376313	CV-BENTOMAT ST	200708CV	00001311	150	15	2250	2636
022376313	CV-BENTOMAT ST	200708CV	00001317	150	15	2250	2666
022376316	CV-BENTOMAT ST	200708CV	00001318	150	15	2250	2678
022376316	CV-BENTOMAT ST	200708CV	00001319	150	15	2250	2672
022376312	CV-BENTOMAT ST	200708CV	00001320	150	15	2250	2680
022376312	CV-BENTOMAT ST	200708CV	00001321	150	15	2250	2678
022376316	CV-BENTOMAT ST	200708CV	00001322	150	15	2250	2672
022376305	CV-BENTOMAT ST	200708CV	00001324	150	15	2250	2706
022376316	CV-BENTOMAT ST	200708CV	00001325	150	15	2250	2664
022376316	CV-BENTOMAT ST	200708CV	00001326	150	15	2250	2674
022376316	CV-BENTOMAT ST	200708CV	00001327	150	15	2250	2676
022376316	CV-BENTOMAT ST	200708CV	00001329	150	15	2250	2670
022376305	CV-BENTOMAT ST	200708CV	00001330	150	15	2250	2668
022376313	CV-BENTOMAT ST	200708CV	00001332	150	15	2250	2668
022376312	CV-BENTOMAT ST	200708CV	00001333	150	15	2250	2656
022376312	CV-BENTOMAT ST	200708CV	00001334	150	15	2250	2662
022376312	CV-BENTOMAT ST	200708CV	00001335	150	15	2250	2654
022376312	CV-BENTOMAT ST	200708CV	00001336	150	15	2250	2656
022376312	CV-BENTOMAT ST	200708CV	00001337	150	15	2250	2636
022376312	CV-BENTOMAT ST	200708CV	00001341	150	15	2250	2626
022376312	CV-BENTOMAT ST	200708CV	00001353	150	15	2250	2654
022376313	CV-BENTOMAT ST	200708CV	00001357	150	15	2250	2610
022376316	CV-BENTOMAT ST	200708CV	00001358	150	15	2250	2626
022376316	CV-BENTOMAT ST	200708CV	00001359	150	15	2250	2618
022376316	CV-BENTOMAT ST	200708CV	00001360	150	15	2250	2622
022376316	CV-BENTOMAT ST	200708CV	00001362	150	15	2250	2630
022376316	CV-BENTOMAT ST	200708CV	00001363	150	15	2250	2610
022376316	CV-BENTOMAT ST	200708CV	00001364	150	15	2250	2620

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376312	CV-BENTOMAT ST	200708CV	00001365	150	15	2250	2624
022376312	CV-BENTOMAT ST	200708CV	00001367	150	15	2250	2630
022376306	CV-BENTOMAT ST	200708CV	00001369	150	15	2250	2628
022376305	CV-BENTOMAT ST	200708CV	00001370	150	15	2250	2634
022376305	CV-BENTOMAT ST	200708CV	00001371	150	15	2250	2638
022376305	CV-BENTOMAT ST	200708CV	00001372	150	15	2250	2634
022376306	CV-BENTOMAT ST	200708CV	00001377	150	15	2250	2616
022376313	CV-BENTOMAT ST	200708CV	00001387	150	15	2250	2630
022376316	CV-BENTOMAT ST	200708CV	00001388	150	15	2250	2632
022376313	CV-BENTOMAT ST	200708CV	00001389	150	15	2250	2636
022376313	CV-BENTOMAT ST	200708CV	00001390	150	15	2250	2636
022376313	CV-BENTOMAT ST	200708CV	00001391	150	15	2250	2656
022376306	CV-BENTOMAT ST	200708CV	00001393	150	15	2250	2628
022376306	CV-BENTOMAT ST	200708CV	00001394	150	15	2250	2946
022376313	CV-BENTOMAT ST	200708CV	00001395	150	15	2250	2782
022376306	CV-BENTOMAT ST	200708CV	00001396	150	15	2250	2436
022376307	CV-BENTOMAT ST	200708CV	00001399	150	15	2250	2620
022376305	CV-BENTOMAT ST	200708CV	00001403	150	15	2250	2626
022376305	CV-BENTOMAT ST	200708CV	00001404	150	15	2250	2626
022376305	CV-BENTOMAT ST	200708CV	00001405	150	15	2250	2624
022376313	CV-BENTOMAT ST	200708CV	00001407	150	15	2250	2612
022376313	CV-BENTOMAT ST	200708CV	00001408	150	15	2250	2624
022376305	CV-BENTOMAT ST	200708CV	00001410	150	15	2250	2638
022376313	CV-BENTOMAT ST	200708CV	00001412	150	15	2250	2496
022376305	CV-BENTOMAT ST	200708CV	00001416	150	15	2250	2698
022376307	CV-BENTOMAT ST	200708CV	00001419	150	15	2250	2624
022376305	CV-BENTOMAT ST	200708CV	00001421	150	15	2250	2618
022376305	CV-BENTOMAT ST	200708CV	00001422	150	15	2250	2622
022376305	CV-BENTOMAT ST	200708CV	00001427	150	15	2250	2622
022376306	CV-BENTOMAT ST	200708CV	00001429	150	15	2250	2590
022376306	CV-BENTOMAT ST	200708CV	00001430	150	15	2250	2612
022376313	CV-BENTOMAT ST	200708CV	00001431	150	15	2250	2578

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376305	CV-BENTOMAT ST	200708CV	00001432	150	15	2250	2592
022376313	CV-BENTOMAT ST	200708CV	00001433	150	15	2250	2574
022376306	CV-BENTOMAT ST	200708CV	00001434	150	15	2250	2590
022376306	CV-BENTOMAT ST	200708CV	00001435	150	15	2250	2620
022376313	CV-BENTOMAT ST	200708CV	00001436	150	15	2250	2620
022376306	CV-BENTOMAT ST	200708CV	00001437	150	15	2250	2626
022376313	CV-BENTOMAT ST	200708CV	00001438	150	15	2250	2626
022376307	CV-BENTOMAT ST	200708CV	00001439	150	15	2250	2624
022376306	CV-BENTOMAT ST	200708CV	00001440	150	15	2250	2630
022376305	CV-BENTOMAT ST	200708CV	00001443	150	15	2250	2646
022376306	CV-BENTOMAT ST	200708CV	00001446	150	15	2250	2658
022376306	CV-BENTOMAT ST	200708CV	00001447	150	15	2250	2646
022376306	CV-BENTOMAT ST	200708CV	00001451	150	15	2250	2618
022376306	CV-BENTOMAT ST	200708CV	00001453	150	15	2250	2620
022376308	CV-BENTOMAT ST	200709CV	00001501	150	15	2250	2722
022376309	CV-BENTOMAT ST	200709CV	00001502	150	15	2250	2602
022376309	CV-BENTOMAT ST	200709CV	00001504	150	15	2250	2606
022376309	CV-BENTOMAT ST	200709CV	00001505	150	15	2250	2584
022376308	CV-BENTOMAT ST	200709CV	00001506	150	15	2250	2600
022376309	CV-BENTOMAT ST	200709CV	00001507	150	15	2250	2604
022376309	CV-BENTOMAT ST	200709CV	00001509	150	15	2250	2590
022376309	CV-BENTOMAT ST	200709CV	00001510	150	15	2250	2576
022376309	CV-BENTOMAT ST	200709CV	00001511	150	15	2250	2580
022376306	CV-BENTOMAT ST	200709CV	00001513	150	15	2250	2540
022376308	CV-BENTOMAT ST	200709CV	00001515	150	15	2250	2630
022376308	CV-BENTOMAT ST	200709CV	00001516	150	15	2250	2660
022376308	CV-BENTOMAT ST	200709CV	00001517	150	15	2250	2638
022376308	CV-BENTOMAT ST	200709CV	00001518	150	15	2250	2628
022376308	CV-BENTOMAT ST	200709CV	00001519	150	15	2250	2632
022376309	CV-BENTOMAT ST	200709CV	00001520	150	15	2250	2636
022376308	CV-BENTOMAT ST	200709CV	00001522	150	15	2250	2630
022376308	CV-BENTOMAT ST	200709CV	00001523	150	15	2250	2618

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376308	CV-BENTOMAT ST	200709CV	00001524	150	15	2250	2636
022376309	CV-BENTOMAT ST	200709CV	00001525	150	15	2250	2618
022376309	CV-BENTOMAT ST	200709CV	00001526	150	15	2250	2618
022376309	CV-BENTOMAT ST	200709CV	00001527	150	15	2250	2620
022376309	CV-BENTOMAT ST	200709CV	00001529	150	15	2250	2614
022376308	CV-BENTOMAT ST	200709CV	00001530	150	15	2250	2602
022376308	CV-BENTOMAT ST	200709CV	00001532	150	15	2250	2592
022376309	CV-BENTOMAT ST	200709CV	00001533	150	15	2250	2586
022376308	CV-BENTOMAT ST	200709CV	00001535	150	15	2250	2624
022376309	CV-BENTOMAT ST	200709CV	00001536	150	15	2250	2582
022376309	CV-BENTOMAT ST	200709CV	00001537	150	15	2250	2580
022376309	CV-BENTOMAT ST	200709CV	00001538	150	15	2250	2576
022376309	CV-BENTOMAT ST	200709CV	00001539	150	15	2250	2574
			Totals:	**20400**	**2040**	**306000**	**357196**
						Total Number of Rolls Certified: **136**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 022376305

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001147	00001138	2007674083			2007696335	769366B
200708CV	00001152	00001138	2007674083			2007696335	769366B
200708CV	00001165	00001153	200707CV	00000403	00000403	2007696335	769979A
200708CV	00001178	00001168	200707CV	00000404	00000403	2007586038	769979A
200708CV	00001203	00001197	200707CV	00000398	00000394	2007696331	769979B
200708CV	00001218	00001212	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001224	00001212	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001235	00001226	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001246	00001241	200707CV	00000396	00000394	2007483477	769982A
200708CV	00001248	00001241	200707CV	00000396	00000394	2007483477	769982A
200708CV	00001249	00001241	200707CV	00000396	00000394	2007483477	769982A
200708CV	00001250	00001241	200707CV	00000396	00000394	2007483477	769982A
200708CV	00001251	00001241	200707CV	00000396	00000394	2007483477	769982A
200708CV	00001252	00001241	200707CV	00000396	00000394	2007483477	769982A
200708CV	00001254	00001241	200707CV	00000395	00000394	2007483477	769982A
200708CV	00001255	00001241	200707CV	00000395	00000394	2007483477	769982A
200708CV	00001259	00001256	200707CV	00000395	00000394	2007586039	769982A
200708CV	00001275	00001264	200707CV	00000387	00000078	2007586039	769982A
200708CV	00001276	00001264	200707CV	00000387	00000078	2007586039	769982A
200708CV	00001277	00001264	200707CV	00000387	00000078	2007586039	769982A
200708CV	00001278	00001264	200707CV	00000387	00000078	2007586039	769982A
200708CV	00001281	00001280	200707CV	00000386	00000078	2007586039	769982A
200708CV	00001282	00001280	200707CV	00000386	00000078	2007586039	769982A
200708CV	00001289	00001280	200707CV	00000401	00000394	2007696332	769982A
200708CV	00001294	00001280	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001295	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001298	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001307	00001295	200707CV	00000388	00000078	2007696332	769982B
200708CV	00001308	00001295	200707CV	00000388	00000078	2007696332	769982B

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001309	00001309	200707CV	00000388	00000078	2007696332	769982B
200708CV	00001310	00001309	200707CV	00000388	00000078	2007696332	769982B
200708CV	00001311	00001309	200707CV	00000388	00000078	2007696332	769982B
200708CV	00001317	00001309	200707CV	00000409	00000407	2007696332	769982B
200708CV	00001318	00001309	200707CV	00000409	00000407	2007696332	769982B
200708CV	00001319	00001309	200707CV	00000409	00000407	2007696332	769982B
200708CV	00001320	00001309	200707CV	00000409	00000407	2007696332	769982B
200708CV	00001321	00001309	200707CV	00000409	00000407	2007696332	769982B
200708CV	00001322	00001309	200707CV	00000409	00000407	2007696332	769982B
200708CV	00001324	00001324	200707CV	00000411	00000407	2007696332	769982B
200708CV	00001325	00001324	200707CV	00000411	00000407	2007696332	769982B
200708CV	00001326	00001324	200707CV	00000411	00000407	2007696332	769982B
200708CV	00001327	00001324	200707CV	00000411	00000407	2007696332	769982B
200708CV	00001329	00001324	200707CV	00000411	00000407	2007696332	769982B
200708CV	00001330	00001324	200707CV	00000411	00000407	2007696332	769982B
200708CV	00001332	00001324	200707CV	00000410	00000407	2007696332	769982B
200708CV	00001333	00001324	200707CV	00000410	00000407	2007696332	769982B
200708CV	00001334	00001324	200707CV	00000410	00000407	2007696332	769361A
200708CV	00001335	00001324	200707CV	00000410	00000407	2007696332	769361A
200708CV	00001336	00001324	200707CV	00000410	00000407	2007696332	769361A
200708CV	00001337	00001324	200707CV	00000410	00000407	2007696332	769361A
200708CV	00001341	00001340	200707CV	00000408	00000407	2007696332	769361A
200708CV	00001353	00001353	200706CV	00000352	00000349	2007581244	769361A
200708CV	00001357	00001353	200706CV	00000352	00000349	2007581244	769361A
200708CV	00001358	00001353	200706CV	00000352	00000349	2007581244	769361A
200708CV	00001359	00001353	200706CV	00000352	00000349	2007581244	769361A
200708CV	00001360	00001353	200706CV	00000352	00000349	2007581244	769361A
200708CV	00001362	00001353	200703CV	00000172	00000169	2007581244	769361A
200708CV	00001363	00001353	200703CV	00000172	00000169	2007581244	769361A
200708CV	00001364	00001353	200703CV	00000172	00000169	2007581244	769361A
200708CV	00001365	00001353	200703CV	00000172	00000169	2007581244	769361A
200708CV	00001367	00001353	200703CV	00000172	00000169	2007581244	769361A
200708CV	00001369	00001368	200703CV	00000173	00000169	2007581244	769361A
200708CV	00001370	00001368	200703CV	00000173	00000169	2007581244	769361A
200708CV	00001371	00001368	200703CV	00000173	00000169	2007581244	769361A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001372	00001368	200703CV	00000173	00000169	2007581244	769361A
200708CV	00001377	00001368	200703CV	00000155	00000152	2007577258	769361B
200708CV	00001387	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001388	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001389	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001390	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001391	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001393	00001383	200708CV	00000447	00000436	2007577258	769361B
200708CV	00001394	00001383	200708CV	00000448	00000448	2007577258	769361B
200708CV	00001395	00001383	200708CV	00000448	00000448	2007577258	769361B
200708CV	00001396	00001383	200708CV	00000448	00000448	2007577258	769361B
200708CV	00001399	00001397	200708CV	00000448	00000448	2007577258	769361B
200708CV	00001403	00001397	200703CV	00000170	00000169	2007577255	769361B
200708CV	00001404	00001397	200703CV	00000170	00000169	2007577255	769361B
200708CV	00001405	00001397	200703CV	00000170	00000169	2007577255	769361B
200708CV	00001407	00001397	200703CV	00000170	00000169	2007577255	769361B
200708CV	00001408	00001397	200703CV	00000170	00000169	2007577255	769361B
200708CV	00001410	00001397	200708CV	00000449	00000448	2007577255	769361B
200708CV	00001412	00001397	200708CV	00000449	00000448	2007577255	769361B
200708CV	00001416	00001415	200708CV	00000449	00000448	2007577255	769361B
200708CV	00001419	00001415	200708CV	00000450	00000450	2007577255	769361B
200708CV	00001421	00001415	200708CV	00000450	00000450	2007577255	769361B
200708CV	00001422	00001415	200708CV	00000450	00000450	2007577255	769361B
200708CV	00001427	00001415	200708CV	00000453	00000450	2007577255	754296A
200708CV	00001429	00001415	200708CV	00000453	00000450	2007604930	754296A
200708CV	00001430	00001430	200708CV	00000453	00000450	2007604930	754296A
200708CV	00001431	00001430	200708CV	00000453	00000450	2007604930	754296A
200708CV	00001432	00001430	200708CV	00000453	00000450	2007604930	754296A
200708CV	00001433	00001430	200708CV	00000453	00000450	2007604930	754296A
200708CV	00001434	00001430	200708CV	00000453	00000450	2007604930	754296A
200708CV	00001435	00001430	200708CV	00000453	00000450	2007604930	754296A
200708CV	00001436	00001430	200708CV	00000452	00000450	2007604930	754296A
200708CV	00001437	00001430	200708CV	00000452	00000450	2007604930	754296A
200708CV	00001438	00001430	200708CV	00000452	00000450	2007604930	754296A
200708CV	00001439	00001430	200708CV	00000452	00000450	2007604930	754296A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001440	00001430	200708CV	00000452	00000450	2007604930	754296A
200708CV	00001443	00001430	200708CV	00000452	00000450	2007604930	754296A
200708CV	00001446	00001444	200708CV	00000454	00000454	2007604930	754296A
200708CV	00001447	00001444	200708CV	00000454	00000454	2007604930	754296A
200708CV	00001451	00001444	200708CV	00000454	00000454	2007604930	754296A
200708CV	00001453	00001444	2007673846			2007604930	754296A
200709CV	00001501	00001501	200708CV	00000466	00000463	2007257721	769976A
200709CV	00001502	00001501	200708CV	00000466	00000463	2007257721	769976A
200709CV	00001504	00001501	200708CV	00000469	00000469	2007257721	769976A
200709CV	00001505	00001501	200708CV	00000469	00000469	2007257721	769976A
200709CV	00001506	00001501	200708CV	00000469	00000469	2007257721	769976A
200709CV	00001507	00001501	200708CV	00000469	00000469	2007257721	769976A
200709CV	00001509	00001501	200708CV	00000469	00000469	2007257721	769976B
200709CV	00001510	00001501	200708CV	00000469	00000469	2007257721	769976B
200709CV	00001511	00001501	200708CV	00000469	00000469	2007257721	769976B
200709CV	00001513	00001501	200709CV	00000476	00000475	2007257721	769976B
200709CV	00001515	00001501	200709CV	00000476	00000475	2007257683	769976B
200709CV	00001516	00001501	200709CV	00000476	00000475	2007257683	769976B
200709CV	00001517	00001501	200709CV	00000476	00000475	2007257683	769976B
200709CV	00001518	00001518	200709CV	00000476	00000475	2007257683	769976B
200709CV	00001519	00001518	200709CV	00000476	00000475	2007257683	769976B
200709CV	00001520	00001518	200709CV	00000476	00000475	2007257683	769976B
200709CV	00001522	00001518	200709CV	00000475	00000475	2007257683	769976B
200709CV	00001523	00001518	200709CV	00000475	00000475	2007257683	769976B
200709CV	00001524	00001518	200709CV	00000475	00000475	2007257683	769976B
200709CV	00001525	00001518	200709CV	00000475	00000475	2007257683	769976B
200709CV	00001526	00001518	200709CV	00000475	00000475	2007257683	769976B
200709CV	00001527	00001518	200709CV	00000475	00000475	2007257683	769976B
200709CV	00001529	00001518	200709CV	00000475	00000475	2007257683	769976B
200709CV	00001530	00001518	200709CV	00000477	00000475	2007257683	769976B
200709CV	00001532	00001518	200709CV	00000477	00000475	2007257683	769976B
200709CV	00001533	00001518	200709CV	00000477	00000475	2007257683	769976B
200709CV	00001535	00001535	200709CV	00000477	00000475	2007257683	769976B
200709CV	00001536	00001535	200709CV	00000477	00000475	2007257683	769976B
200709CV	00001537	00001535	200709CV	00000477	00000475	2007257683	769976B

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200709CV	00001538	00001535	200709CV	00000477	00000475	2007257683	769976B
200709CV	00001539	00001535	200709CV	00000477	00000475	2007257683	769976B

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GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 022376305 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 4632	ASTM D 4632
		Standard Specification:	0.75 lb/sq ft MARV	90lbs MARV	15lbs MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200708CV	00001138	0.95	343.0	39.8
CV-BENTOMAT ST	200708CV	00001153	0.84	343.0	27.2
CV-BENTOMAT ST	200708CV	00001168	0.88	343.0	59.5
CV-BENTOMAT ST	200708CV	00001197	0.86	343.0	44.9
CV-BENTOMAT ST	200708CV	00001212	0.84	343.0	46.6
CV-BENTOMAT ST	200708CV	00001226	0.84	205.2	38.3
CV-BENTOMAT ST	200708CV	00001241	0.86	205.2	38.8
CV-BENTOMAT ST	200708CV	00001256	0.85	205.2	33.9
CV-BENTOMAT ST	200708CV	00001264	0.87	205.2	36.4
CV-BENTOMAT ST	200708CV	00001280	0.82	205.2	29
CV-BENTOMAT ST	200708CV	00001295	0.85	205.2	24.1
CV-BENTOMAT ST	200708CV	00001309	0.88	278.5	29
CV-BENTOMAT ST	200708CV	00001324	0.89	278.5	27.7
CV-BENTOMAT ST	200708CV	00001340	0.86	278.5	34.1
CV-BENTOMAT ST	200708CV	00001353	0.83	278.5	32.4
CV-BENTOMAT ST	200708CV	00001368	0.86	278.5	28.1
CV-BENTOMAT ST	200708CV	00001383	0.84	278.5	26.1
CV-BENTOMAT ST	200708CV	00001397	0.84	139.1	56.9
CV-BENTOMAT ST	200708CV	00001415	0.90	139.1	48.2
CV-BENTOMAT ST	200708CV	00001430	0.89	139.1	42.8
CV-BENTOMAT ST	200708CV	00001444	0.87	139.1	44.5
CV-BENTOMAT ST	200709CV	00001501	0.91	254.8	33.6
CV-BENTOMAT ST	200709CV	00001518	0.85	254.8	37
CV-BENTOMAT ST	200709CV	00001535	0.85	254.8	31

Product	Lot # Tested	Roll # Tested	Fluid Loss	PEEL 6496	Free Swell
CV-BENTOMAT ST	200708CV	00001138	17.4	8.3	28.0
CV-BENTOMAT ST	200708CV	00001153	0.0	5.6	0.0

CV-BENTOMAT ST	200708CV	00001168	0.0	9.7	0.0
CV-BENTOMAT ST	200708CV	00001197	0.0	9.0	0.0
CV-BENTOMAT ST	200708CV	00001212	0.0	8.8	0.0
CV-BENTOMAT ST	200708CV	00001226	17.1	7.6	27.0
CV-BENTOMAT ST	200708CV	00001241	0.0	8.1	0.0
CV-BENTOMAT ST	200708CV	00001256	17.2	7.1	26.0
CV-BENTOMAT ST	200708CV	00001264	0.0	7.7	0.0
CV-BENTOMAT ST	200708CV	00001280	0.0	5.9	0.0
CV-BENTOMAT ST	200708CV	00001295	0.0	4.5	0.0
CV-BENTOMAT ST	200708CV	00001309	16.9	6.1	27.0
CV-BENTOMAT ST	200708CV	00001324	0.0	5.8	0.0
CV-BENTOMAT ST	200708CV	00001340	0.0	7.1	0.0
CV-BENTOMAT ST	200708CV	00001353	17.0	6.8	29.0
CV-BENTOMAT ST	200708CV	00001368	0.0	5.6	0.0
CV-BENTOMAT ST	200708CV	00001383	0.0	5.5	0.0
CV-BENTOMAT ST	200708CV	00001397	15.9	10.8	27.0
CV-BENTOMAT ST	200708CV	00001415	0.0	9.4	0.0
CV-BENTOMAT ST	200708CV	00001430	0.0	9.0	0.0
CV-BENTOMAT ST	200708CV	00001444	17.5	9.3	26.0
CV-BENTOMAT ST	200709CV	00001501	16.1	7.2	27.0
CV-BENTOMAT ST	200709CV	00001518	0.0	7.0	0.0
CV-BENTOMAT ST	200709CV	00001535	0.0	6.4	0.0

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce Order 022376305
has been certified by CETCO with the following test results

Reference	Moist	Swell	Fluid Loss
Test Method:	ASTM D 2216	ASTM D 5890	ASTM D 5891
Specification:	12% Max	24 Min	18.0% Max
754296A	7.7	27.0	16.8
769361A	9.5	26.0	16.8
769361B	8.6	26.0	17.6
769366B	9.9	24.0	16.4
769976A	7.6	24.0	17.2
769976B	7.0	25.0	17.2
769979A	8.3	26.0	16.4
769979B	8.4	27.0	16.4
769982A	8.9	26.0	16.0
769982B	9.4	27.0	16.4

Tests approved by
Melanie King
CETCO
Quality Assurance Coordinator

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 022376305 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strength
CV-NON-WOVEN	200703CV	00000152	6.6	44.1
CV-NON-WOVEN	200703CV	00000169	6.2	43.0
CV-NON-WOVEN	200706CV	00000349	6.5	21.5
CV-NON-WOVEN	200707CV	00000078	6.5	46.5
CV-NON-WOVEN	200707CV	00000394	6.9	29.0
CV-NON-WOVEN	200707CV	00000403	6.8	26.9
CV-NON-WOVEN	200707CV	00000407	7.1	23.4
CV-NON-WOVEN	200708CV	00000436	6.8	30.4
CV-NON-WOVEN	200708CV	00000448	6.7	27.0
CV-NON-WOVEN	200708CV	00000450	7.5	28.4
CV-NON-WOVEN	200708CV	00000454	7.0	30.5
CV-NON-WOVEN	200708CV	00000463	7.4	34.5
CV-NON-WOVEN	200708CV	00000469	6.2	31.5
CV-NON-WOVEN	200709CV	00000475	6.0	16.1

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 022376305was manufactured with geotextiles which were tested with the following results.

BASE

Material	Roll Number	Mass Area oz/yd2	Grab Strenth lbs
PPX 82TEX	2007257683	3.4	158.0
PPX 82TEX	2007257721	3.5	157.0
PPX 82TEX	2007483477	3.5	159.1
PPX 82TEX	2007577255	3.5	160.0
PPX 82TEX	2007577258	3.5	160.0
PPX 82TEX	2007581244	3.4	137.1
PPX 82TEX	2007586038	3.5	155.5
PPX 82TEX	2007586039	3.5	150.1
PPX 82TEX	2007604930	3.4	179.3
PPX 82TEX	2007696331	3.5	193.4
PPX 82TEX	2007696332	3.5	193.4
PPX 82TEX	2007696335	3.5	193.4

CAP

Material	Roll Number	Mass Area oz/yd2	Grab Strenth lbs
PPX 650	2007673846	7.5	136.9
PPX 650	2007674083	7.3	157.1

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.

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

Date: 2/28/2007
Purchase Order: F31-53080
ORDER NUMBERS: 022376314, 022376315, 022376318, 022376319, 022376320

Mike Gurley
Allied Waste

Concorde, NC 28027
mike.gurley@awin.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Allied Waste. The shipments left our Cartersville, Georgia plant on 02/27/2007.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Charlotte Motor Speedway
CUSTOMER P.O.: F31-53080
ORDER NUMBERS: 022376314, 022376315, 022376318, 022376319, 022376320
PREPARED FOR: Allied Waste

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

PRODUCTION CERTIFICATION

PROJECT NAME: Charlotte Motor Speedway
CUSTOMER P.O.: F31-53080
PREPARED FOR: Allied Waste

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION 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. Any detected needles, which can be identified without damaging the GCL, are removed from the product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Melanie King

Ship Date: 02/27/2007
Order Numbers: 022376314, 022376315, 022376318, 022376319, 022376320
Prepared For: Allied Waste

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties 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 (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	22.5 lbs/in (40 N/cm) MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	2.5 lbs/in (4.4 N/cm) Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

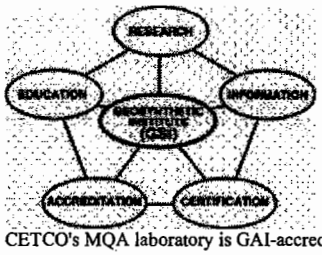
Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 5890	Bentonite Swell Index	1/100,000sf	24 ml/2g min	Standard
ASTM D 5891	Bentonite Fluid Loss	1/100,000sf	18 ml max	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000sf	5x10-9 cm/sec max	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/in	Standard

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.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.



CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 022376314

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376314	CV-BENTOMAT ST	200708CV	00001109	150	15	2250	2824
022376314	CV-BENTOMAT ST	200708CV	00001125	150	15	2250	2656
022376314	CV-BENTOMAT ST	200708CV	00001149	150	15	2250	2636
022376314	CV-BENTOMAT ST	200708CV	00001150	150	15	2250	2628
022376314	CV-BENTOMAT ST	200708CV	00001166	150	15	2250	2586
022376314	CV-BENTOMAT ST	200708CV	00001167	150	15	2250	2586
022376318	CV-BENTOMAT ST	200708CV	00001168	150	15	2250	2892
022376314	CV-BENTOMAT ST	200708CV	00001170	150	15	2250	2612
022376314	CV-BENTOMAT ST	200708CV	00001171	150	15	2250	2602
022376314	CV-BENTOMAT ST	200708CV	00001172	150	15	2250	2596
022376314	CV-BENTOMAT ST	200708CV	00001175	150	15	2250	2604
022376314	CV-BENTOMAT ST	200708CV	00001179	150	15	2250	2610
022376320	CV-BENTOMAT ST	200708CV	00001182	150	15	2250	2646
022376319	CV-BENTOMAT ST	200708CV	00001183	150	15	2250	2602
022376314	CV-BENTOMAT ST	200708CV	00001190	150	15	2250	2622
022376314	CV-BENTOMAT ST	200708CV	00001192	150	15	2250	2634
022376314	CV-BENTOMAT ST	200708CV	00001193	150	15	2250	2616
022376314	CV-BENTOMAT ST	200708CV	00001194	150	15	2250	2622
022376314	CV-BENTOMAT ST	200708CV	00001195	150	15	2250	2624
022376314	CV-BENTOMAT ST	200708CV	00001196	150	15	2250	2630
022376320	CV-BENTOMAT ST	200708CV	00001197	150	15	2250	2660
022376320	CV-BENTOMAT ST	200708CV	00001198	150	15	2250	2614
022376320	CV-BENTOMAT ST	200708CV	00001199	150	15	2250	2612
022376320	CV-BENTOMAT ST	200708CV	00001201	150	15	2250	2616
022376320	CV-BENTOMAT ST	200708CV	00001202	150	15	2250	2630
022376320	CV-BENTOMAT ST	200708CV	00001204	150	15	2250	2622
022376320	CV-BENTOMAT ST	200708CV	00001205	150	15	2250	2620

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376320	CV-BENTOMAT ST	200708CV	00001206	150	15	2250	2622
022376320	CV-BENTOMAT ST	200708CV	00001207	150	15	2250	2618
022376320	CV-BENTOMAT ST	200708CV	00001208	150	15	2250	2626
022376320	CV-BENTOMAT ST	200708CV	00001210	150	15	2250	2614
022376319	CV-BENTOMAT ST	200708CV	00001211	150	15	2250	2622
022376315	CV-BENTOMAT ST	200708CV	00001212	150	15	2250	2656
022376319	CV-BENTOMAT ST	200708CV	00001213	150	15	2250	2624
022376319	CV-BENTOMAT ST	200708CV	00001214	150	15	2250	2624
022376319	CV-BENTOMAT ST	200708CV	00001215	150	15	2250	2640
022376319	CV-BENTOMAT ST	200708CV	00001216	150	15	2250	2630
022376319	CV-BENTOMAT ST	200708CV	00001217	150	15	2250	2624
022376315	CV-BENTOMAT ST	200708CV	00001219	150	15	2250	2616
022376315	CV-BENTOMAT ST	200708CV	00001220	150	15	2250	2608
022376315	CV-BENTOMAT ST	200708CV	00001221	150	15	2250	2616
022376315	CV-BENTOMAT ST	200708CV	00001222	150	15	2250	2624
022376315	CV-BENTOMAT ST	200708CV	00001223	150	15	2250	2622
022376319	CV-BENTOMAT ST	200708CV	00001225	150	15	2250	2620
022376315	CV-BENTOMAT ST	200708CV	00001226	150	15	2250	2656
022376320	CV-BENTOMAT ST	200708CV	00001228	150	15	2250	2618
022376319	CV-BENTOMAT ST	200708CV	00001230	150	15	2250	2600
022376320	CV-BENTOMAT ST	200708CV	00001231	150	15	2250	2614
022376320	CV-BENTOMAT ST	200708CV	00001232	150	15	2250	2616
022376320	CV-BENTOMAT ST	200708CV	00001233	150	15	2250	2602
022376319	CV-BENTOMAT ST	200708CV	00001234	150	15	2250	2620
022376320	CV-BENTOMAT ST	200708CV	00001236	150	15	2250	2598
022376319	CV-BENTOMAT ST	200708CV	00001237	150	15	2250	2590
022376319	CV-BENTOMAT ST	200708CV	00001238	150	15	2250	2598
022376319	CV-BENTOMAT ST	200708CV	00001239	150	15	2250	2606
022376319	CV-BENTOMAT ST	200708CV	00001240	150	15	2250	2612
022376315	CV-BENTOMAT ST	200708CV	00001242	150	15	2250	2610
022376315	CV-BENTOMAT ST	200708CV	00001243	150	15	2250	2626
022376315	CV-BENTOMAT ST	200708CV	00001245	150	15	2250	2594

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376319	CV-BENTOMAT ST	200708CV	00001256	150	15	2250	2626
022376319	CV-BENTOMAT ST	200708CV	00001258	150	15	2250	2598
022376318	CV-BENTOMAT ST	200708CV	00001260	150	15	2250	2638
022376318	CV-BENTOMAT ST	200708CV	00001261	150	15	2250	2646
022376318	CV-BENTOMAT ST	200708CV	00001264	150	15	2250	2822
022376318	CV-BENTOMAT ST	200708CV	00001266	150	15	2250	2670
022376318	CV-BENTOMAT ST	200708CV	00001267	150	15	2250	2626
022376315	CV-BENTOMAT ST	200708CV	00001269	150	15	2250	2622
022376315	CV-BENTOMAT ST	200708CV	00001270	150	15	2250	2630
022376315	CV-BENTOMAT ST	200708CV	00001272	150	15	2250	2622
022376315	CV-BENTOMAT ST	200708CV	00001273	150	15	2250	2636
022376318	CV-BENTOMAT ST	200708CV	00001296	150	15	2250	2622
022376318	CV-BENTOMAT ST	200708CV	00001297	150	15	2250	2626
022376318	CV-BENTOMAT ST	200708CV	00001299	150	15	2250	2616
022376318	CV-BENTOMAT ST	200708CV	00001300	150	15	2250	2626
022376318	CV-BENTOMAT ST	200708CV	00001301	150	15	2250	2630
022376318	CV-BENTOMAT ST	200708CV	00001302	150	15	2250	2628
022376318	CV-BENTOMAT ST	200708CV	00001303	150	15	2250	2628
022376315	CV-BENTOMAT ST	200708CV	00001304	150	15	2250	2630
022376315	CV-BENTOMAT ST	200708CV	00001305	150	15	2250	2632
022376315	CV-BENTOMAT ST	200708CV	00001306	150	15	2250	2636
022376318	CV-BENTOMAT ST	200708CV	00001312	150	15	2250	2626
022376318	CV-BENTOMAT ST	200708CV	00001313	150	15	2250	2632
022376318	CV-BENTOMAT ST	200708CV	00001314	150	15	2250	2628
022376318	CV-BENTOMAT ST	200708CV	00001315	150	15	2250	2640
022376319	CV-BENTOMAT ST	200708CV	00001450	150	15	2250	2596
			Totals:	**12750**	**1275**	**191250**	**223500**
				Total Number of Rolls Certified: **85**			

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 022376314

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001109	00001109	2007673861			2007577259	769366A
200708CV	00001125	00001124	2007674082			2007698236	769366B
200708CV	00001149	00001138	2007674083			2007696335	769366B
200708CV	00001150	00001138	2007674083			2007696335	769366B
200708CV	00001166	00001153	200707CV	00000403	00000403	2007696335	769979A
200708CV	00001167	00001153	200707CV	00000403	00000403	2007696335	769979A
200708CV	00001168	00001168	200707CV	00000403	00000403	2007696335	769979A
200708CV	00001170	00001168	200707CV	00000403	00000403	2007696335	769979A
200708CV	00001171	00001168	200707CV	00000403	00000403	2007696335	769979A
200708CV	00001172	00001168	200707CV	00000403	00000403	2007696335	769979A
200708CV	00001175	00001168	200707CV	00000404	00000403	2007586038	769979A
200708CV	00001179	00001168	200707CV	00000404	00000403	2007586038	769979A
200708CV	00001182	00001182	200707CV	00000404	00000403	2007586038	769979A
200708CV	00001183	00001182	200707CV	00000402	00000394	2007586038	769979A
200708CV	00001190	00001182	200707CV	00000402	00000394	2007586038	769979A
200708CV	00001192	00001182	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001193	00001182	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001194	00001182	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001195	00001182	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001196	00001182	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001197	00001197	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001198	00001197	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001199	00001197	200707CV	00000397	00000394	2007586038	769979A
200708CV	00001201	00001197	200707CV	00000398	00000394	2007586038	769979A
200708CV	00001202	00001197	200707CV	00000398	00000394	2007586038	769979A
200708CV	00001204	00001197	200707CV	00000398	00000394	2007696331	769979B
200708CV	00001205	00001197	200707CV	00000398	00000394	2007696331	769979B
200708CV	00001206	00001197	200707CV	00000398	00000394	2007696331	769979B
200708CV	00001207	00001197	200707CV	00000398	00000394	2007696331	769979B

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001208	00001197	200707CV	00000398	00000394	2007696331	769979B
200708CV	00001210	00001197	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001211	00001197	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001212	00001212	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001213	00001212	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001214	00001212	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001215	00001212	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001216	00001212	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001217	00001212	200707CV	00000399	00000394	2007696331	769979B
200708CV	00001219	00001212	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001220	00001212	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001221	00001212	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001222	00001212	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001223	00001212	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001225	00001212	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001226	00001226	200708CV	00000441	00000436	2007696331	769979B
200708CV	00001228	00001226	200708CV	00000442	00000436	2007696331	769979B
200708CV	00001230	00001226	200708CV	00000442	00000436	2007483477	769979B
200708CV	00001231	00001226	200708CV	00000442	00000436	2007483477	769979B
200708CV	00001232	00001226	200708CV	00000442	00000436	2007483477	769979B
200708CV	00001233	00001226	200708CV	00000442	00000436	2007483477	769979B
200708CV	00001234	00001226	200708CV	00000442	00000436	2007483477	769979B
200708CV	00001236	00001226	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001237	00001226	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001238	00001226	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001239	00001226	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001240	00001226	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001242	00001241	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001243	00001241	200707CV	00000400	00000394	2007483477	769979B
200708CV	00001245	00001241	200707CV	00000396	00000394	2007483477	769979B
200708CV	00001256	00001256	200707CV	00000395	00000394	2007483477	769982A
200708CV	00001258	00001256	200707CV	00000395	00000394	2007483477	769982A
200708CV	00001260	00001256	200707CV	00000395	00000394	2007586039	769982A
200708CV	00001261	00001256	200707CV	00000395	00000394	2007586039	769982A
200708CV	00001264	00001264	200708CV	00000444	00000436	2007586039	769982A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001266	00001264	200708CV	00000444	00000436	2007586039	769982A
200708CV	00001267	00001264	200708CV	00000444	00000436	2007586039	769982A
200708CV	00001269	00001264	200708CV	00000444	00000436	2007586039	769982A
200708CV	00001270	00001264	200708CV	00000444	00000436	2007586039	769982A
200708CV	00001272	00001264	200707CV	00000387	00000078	2007586039	769982A
200708CV	00001273	00001264	200707CV	00000387	00000078	2007586039	769982A
200708CV	00001296	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001297	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001299	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001300	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001301	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001302	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001303	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001304	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001305	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001306	00001295	200707CV	00000401	00000394	2007696332	769982B
200708CV	00001312	00001309	200707CV	00000388	00000078	2007696332	769982B
200708CV	00001313	00001309	200707CV	00000388	00000078	2007696332	769982B
200708CV	00001314	00001309	200707CV	00000388	00000078	2007696332	769982B
200708CV	00001315	00001309	200707CV	00000388	00000078	2007696332	769982B
200708CV	00001450	00001444	200708CV	00000454	00000454	2007604930	754296A

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GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 022376314 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 4632	ASTM D 4632
		Standard Specification:	0.75 lb/sq ft MARV	90lbs MARV	15lbs MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200708CV	00001109	0.89	357.5	36.4
CV-BENTOMAT ST	200708CV	00001124	0.92	357.5	35.4
CV-BENTOMAT ST	200708CV	00001138	0.95	343.0	39.8
CV-BENTOMAT ST	200708CV	00001153	0.84	343.0	27.2
CV-BENTOMAT ST	200708CV	00001168	0.88	343.0	59.5
CV-BENTOMAT ST	200708CV	00001182	0.83	343.0	49.6
CV-BENTOMAT ST	200708CV	00001197	0.86	343.0	44.9
CV-BENTOMAT ST	200708CV	00001212	0.84	343.0	46.6
CV-BENTOMAT ST	200708CV	00001226	0.84	205.2	38.3
CV-BENTOMAT ST	200708CV	00001241	0.86	205.2	38.8
CV-BENTOMAT ST	200708CV	00001256	0.85	205.2	33.9
CV-BENTOMAT ST	200708CV	00001264	0.87	205.2	36.4
CV-BENTOMAT ST	200708CV	00001295	0.85	205.2	24.1
CV-BENTOMAT ST	200708CV	00001309	0.88	278.5	29
CV-BENTOMAT ST	200708CV	00001444	0.87	139.1	44.5

Product	Lot # Tested	Roll # Tested	Fluid Loss	PEEL 6496	Free Swell
CV-BENTOMAT ST	200708CV	00001109	0.0	7.4	0.0
CV-BENTOMAT ST	200708CV	00001124	0.0	7.4	0.0
CV-BENTOMAT ST	200708CV	00001138	17.4	8.3	28.0
CV-BENTOMAT ST	200708CV	00001153	0.0	5.6	0.0
CV-BENTOMAT ST	200708CV	00001168	0.0	9.7	0.0
CV-BENTOMAT ST	200708CV	00001182	16.5	8.5	28.0
CV-BENTOMAT ST	200708CV	00001197	0.0	9.0	0.0
CV-BENTOMAT ST	200708CV	00001212	0.0	8.8	0.0
CV-BENTOMAT ST	200708CV	00001226	17.1	7.6	27.0
CV-BENTOMAT ST	200708CV	00001241	0.0	8.1	0.0
CV-BENTOMAT ST	200708CV	00001256	17.2	7.1	26.0

CV-BENTOMAT ST	200708CV	00001264	0.0	7.7	0.0
CV-BENTOMAT ST	200708CV	00001295	0.0	4.5	0.0
CV-BENTOMAT ST	200708CV	00001309	16.9	6.1	27.0
CV-BENTOMAT ST	200708CV	00001444	17.5	9.3	26.0

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce Order 022376314
has been certified by CETCO with the following test results

Reference	Moist	Swell	Fluid Loss
Test Method:	ASTM D 2216	ASTM D 5890	ASTM D 5891
Specification:	12% Max	24 Min	18.0% Max
754296A	7.7	27.0	16.8
769366A	10.2	25.0	16.0
769366B	9.9	24.0	16.4
769979A	8.3	26.0	16.4
769979B	8.4	27.0	16.4
769982A	8.9	26.0	16.0
769982B	9.4	27.0	16.4

Tests approved by
Melanie King
CETCO
Quality Assurance Coordinator

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 022376314 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strenth
CV-NON-WOVEN	200707CV	00000078	6.5	46.5
CV-NON-WOVEN	200707CV	00000394	6.9	29.0
CV-NON-WOVEN	200707CV	00000403	6.8	26.9
CV-NON-WOVEN	200708CV	00000436	6.8	30.4
CV-NON-WOVEN	200708CV	00000454	7.0	30.5

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 022376314was manufactured with geotextiles which were tested with the following results.

BASE

Material	Roll Number	Mass Area oz/yd2	Grab Strenth lbs
PPX 82TEX	2007483477	3.5	159.1
PPX 82TEX	2007577259	3.5	160.0
PPX 82TEX	2007586038	3.5	155.5
PPX 82TEX	2007586039	3.5	150.1
PPX 82TEX	2007604930	3.4	179.3
PPX 82TEX	2007696331	3.5	193.4
PPX 82TEX	2007696332	3.5	193.4
PPX 82TEX	2007696335	3.5	193.4
PPX 82TEX	2007698236	3.5	146.3

CAP

Material	Roll Number	Mass Area oz/yd2	Grab Strenth lbs
PPX 650	2007674082	7.3	157.1
PPX 650	2007673861	6.8	132.9
PPX 650	2007674083	7.3	157.1

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.

Date: 3/1/2007
Purchase Order: F31-53080
ORDER NUMBERS: 022376317, 022376321, 022376322

Mike Gurley
Allied Waste

Concorde, NC 28027
mike.gurley@awin.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Allied Waste. The shipments left our Cartersville, Georgia plant on 02/28/2007.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Charlotte Motor Speedway
CUSTOMER P.O.: F31-53080
ORDER NUMBERS: 022376317, 022376321, 022376322
PREPARED FOR: Allied Waste

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

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PRODUCTION CERTIFICATION

PROJECT NAME: Charlotte Motor Speedway
CUSTOMER P.O.: F31-53080
PREPARED FOR: Allied Waste

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION 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. Any detected needles, which can be identified without damaging the GCL, are removed from the product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Melanie King

Ship Date: 02/28/2007
Order Numbers: 022376317, 022376321, 022376322
Prepared For: Allied Waste

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties 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 (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	22.5 lbs/in (40 N/cm) MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	2.5 lbs/in (4.4 N/cm) Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

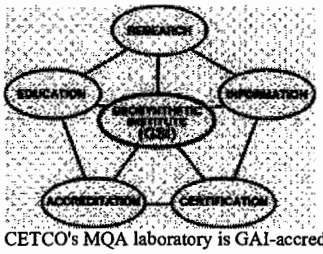
Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 5890	Bentonite Swell Index	1/100,000sf	24 ml/2g min	Standard
ASTM D 5891	Bentonite Fluid Loss	1/100,000sf	18 ml max	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000sf	5x10-9 cm/sec max	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/in	Standard

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.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.



CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 022376317

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376321	CV-BENTOMAT ST	200708CV	00001100	150	15	2250	2646
022376317	CV-BENTOMAT ST	200708CV	00001101	150	15	2250	2636
022376317	CV-BENTOMAT ST	200708CV	00001102	150	15	2250	2638
022376317	CV-BENTOMAT ST	200708CV	00001103	150	15	2250	2644
022376317	CV-BENTOMAT ST	200708CV	00001104	150	15	2250	2642
022376317	CV-BENTOMAT ST	200708CV	00001105	150	15	2250	2638
022376321	CV-BENTOMAT ST	200708CV	00001106	150	15	2250	2660
022376317	CV-BENTOMAT ST	200708CV	00001107	150	15	2250	2436
022376317	CV-BENTOMAT ST	200708CV	00001112	150	15	2250	2622
022376317	CV-BENTOMAT ST	200708CV	00001124	150	15	2250	2698
022376317	CV-BENTOMAT ST	200708CV	00001126	150	15	2250	2648
022376317	CV-BENTOMAT ST	200708CV	00001127	150	15	2250	2648
022376317	CV-BENTOMAT ST	200708CV	00001128	150	15	2250	2652
022376321	CV-BENTOMAT ST	200708CV	00001130	150	15	2250	2648
022376321	CV-BENTOMAT ST	200708CV	00001132	150	15	2250	2648
022376321	CV-BENTOMAT ST	200708CV	00001133	150	15	2250	2668
022376321	CV-BENTOMAT ST	200708CV	00001134	150	15	2250	2664
022376317	CV-BENTOMAT ST	200708CV	00001135	150	15	2250	2648
022376317	CV-BENTOMAT ST	200708CV	00001136	150	15	2250	2650
022376322	CV-BENTOMAT ST	200708CV	00001151	150	15	2250	2618
022376321	CV-BENTOMAT ST	200708CV	00001153	150	15	2250	2634
022376322	CV-BENTOMAT ST	200708CV	00001154	150	15	2250	2612
022376321	CV-BENTOMAT ST	200708CV	00001155	150	15	2250	2620
022376321	CV-BENTOMAT ST	200708CV	00001157	150	15	2250	2586
022376321	CV-BENTOMAT ST	200708CV	00001158	150	15	2250	2594
022376321	CV-BENTOMAT ST	200708CV	00001159	150	15	2250	2602
022376317	CV-BENTOMAT ST	200708CV	00001161	150	15	2250	2596

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
022376317	CV-BENTOMAT ST	200708CV	00001162	150	15	2250	2590
022376322	CV-BENTOMAT ST	200708CV	00001176	150	15	2250	2596
022376321	CV-BENTOMAT ST	200708CV	00001177	150	15	2250	2612
022376321	CV-BENTOMAT ST	200708CV	00001180	150	15	2250	2608
022376321	CV-BENTOMAT ST	200708CV	00001181	150	15	2250	2620
022376321	CV-BENTOMAT ST	200708CV	00001184	150	15	2250	2624
022376321	CV-BENTOMAT ST	200708CV	00001186	150	15	2250	2604
022376321	CV-BENTOMAT ST	200708CV	00001187	150	15	2250	2614
022376317	CV-BENTOMAT ST	200708CV	00001188	150	15	2250	2624
022376317	CV-BENTOMAT ST	200708CV	00001189	150	15	2250	2626
			Totals:	**5550**	**555**	**83250**	**97114**
						Total Number of Rolls Certified: **37**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 022376317

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001100	00001100	2007674086			2007577259	769366A
200708CV	00001101	00001100	2007673861			2007577259	769366A
200708CV	00001102	00001100	2007673861			2007577259	769366A
200708CV	00001103	00001100	2007673861			2007577259	769366A
200708CV	00001104	00001100	2007673861			2007577259	769366A
200708CV	00001105	00001100	2007673861			2007577259	769366A
200708CV	00001106	00001100	2007673861			2007577259	769366A
200708CV	00001107	00001100	2007673861			2007577259	769366A
200708CV	00001112	00001109	2007674084			2007577259	769366A
200708CV	00001124	00001124	2007674082			2007698236	769366B
200708CV	00001126	00001124	2007674082			2007698236	769366B
200708CV	00001127	00001124	2007674082			2007698236	769366B
200708CV	00001128	00001124	2007674082			2007698236	769366B
200708CV	00001130	00001124	2007674069			2007698236	769366B
200708CV	00001132	00001124	2007674069			2007698236	769366B
200708CV	00001133	00001124	2007674069			2007698236	769366B
200708CV	00001134	00001124	2007674069			2007698236	769366B
200708CV	00001135	00001124	2007674069			2007698236	769366B
200708CV	00001136	00001124	2007674069			2007698236	769366B
200708CV	00001151	00001138	2007674083			2007696335	769366B
200708CV	00001153	00001153	2007674083			2007696335	769366B
200708CV	00001154	00001153	2007674083			2007696335	769366B
200708CV	00001155	00001153	2007674083			2007696335	769366B
200708CV	00001157	00001153	200707CV	00000405	00000403	2007696335	769366B
200708CV	00001158	00001153	200707CV	00000405	00000403	2007696335	769366B
200708CV	00001159	00001153	200707CV	00000405	00000403	2007696335	769366B
200708CV	00001161	00001153	200707CV	00000405	00000403	2007696335	769979A
200708CV	00001162	00001153	200707CV	00000405	00000403	2007696335	769979A
200708CV	00001176	00001168	200707CV	00000404	00000403	2007586038	769979A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200708CV	00001177	00001168	200707CV	00000404	00000403	2007586038	769979A
200708CV	00001180	00001168	200707CV	00000404	00000403	2007586038	769979A
200708CV	00001181	00001168	200707CV	00000404	00000403	2007586038	769979A
200708CV	00001184	00001182	200707CV	00000402	00000394	2007586038	769979A
200708CV	00001186	00001182	200707CV	00000402	00000394	2007586038	769979A
200708CV	00001187	00001182	200707CV	00000402	00000394	2007586038	769979A
200708CV	00001188	00001182	200707CV	00000402	00000394	2007586038	769979A
200708CV	00001189	00001182	200707CV	00000402	00000394	2007586038	769979A

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GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 022376317 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 4632	ASTM D 4632
		Standard Specification:	0.75 lb/sq ft MARV	90lbs MARV	15lbs MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200708CV	00001100	0.83	357.5	40.1
CV-BENTOMAT ST	200708CV	00001109	0.89	357.5	36.4
CV-BENTOMAT ST	200708CV	00001124	0.92	357.5	35.4
CV-BENTOMAT ST	200708CV	00001138	0.95	343.0	39.8
CV-BENTOMAT ST	200708CV	00001153	0.84	343.0	27.2
CV-BENTOMAT ST	200708CV	00001168	0.88	343.0	59.5
CV-BENTOMAT ST	200708CV	00001182	0.83	343.0	49.6

Product	Lot # Tested	Roll # Tested	Fluid Loss	PEEL 6496	Free Swell
CV-BENTOMAT ST	200708CV	00001100	16.9	8.0	27.0
CV-BENTOMAT ST	200708CV	00001109	0.0	7.4	0.0
CV-BENTOMAT ST	200708CV	00001124	0.0	7.4	0.0
CV-BENTOMAT ST	200708CV	00001138	17.4	8.3	28.0
CV-BENTOMAT ST	200708CV	00001153	0.0	5.6	0.0
CV-BENTOMAT ST	200708CV	00001168	0.0	9.7	0.0
CV-BENTOMAT ST	200708CV	00001182	16.5	8.5	28.0

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce Order 022376317
has been certified by CETCO with the following test results

Reference	Moist	Swell	Fluid Loss
Test Method:	ASTM D 2216	ASTM D 5890	ASTM D 5891
Specification:	12% Max	24 Min	18.0% Max
769366A	10.2	25.0	16.0
769366B	9.9	24.0	16.4
769979A	8.3	26.0	16.4

Tests approved by
Melanie King
CETCO
Quality Assurance Coordinator

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GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 022376317 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strenth
CV-NON-WOVEN	200707CV	00000394	6.9	29.0
CV-NON-WOVEN	200707CV	00000403	6.8	26.9

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 022376317was manufactured with geotextiles which were tested with the following results.

BASE

Material	Roll Number	Mass Area oz/yd2	Grab Strenth lbs
PPX 82TEX	2007577259	3.5	160.0
PPX 82TEX	2007586038	3.5	155.5
PPX 82TEX	2007696335	3.5	193.4
PPX 82TEX	2007698236	3.5	146.3

CAP

Material	Roll Number	Mass Area oz/yd2	Grab Strenth lbs
PPX 650	2007674086	6.8	140.5
PPX 650	2007674069	7.3	124.4
PPX 650	2007674084	7.3	157.1
PPX 650	2007673861	6.8	132.9
PPX 650	2007674083	7.3	157.1
PPX 650	2007674082	7.3	157.1

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.

CETCO 218 Industrial Park Dr Cartersville, GA 30121 **Computation Sheet: GRI Accredited ASTM D-5887, Index Flux**

Sample: Bentomat ST
Lot #: 200709CV
Roll#: 1501
Project #: CETCO QC

Permeability equation : ((0.879*Thickness)/(2*Pi*r^2*Time))*ln(Change in Head)

Flux equation : ((Inflow+Outflow)/200)/Pi*r^2/Time

Initial Thickness: 0.72 cm. **Hydration :** 48 hrs **Permeant :** De-aired Water

Test Position: 2 **Initial Head :** 2 psi 140.6 cm. **Analyst :** KC **Date:** 3/7/07

Cell Size: 4 in. **Max. Effective Stress:** 5 psi 34.5 kPa **Requested by :** **Date Started:** 3/1/07

Final Thickness: 0.75 cm. *** indicates value meets Flux Ratio ASTM termination criteria**

Conversions : 1 psi = 2.307 feet of head 1 foot of head = 30.48 cm 1 psi = 70.32 cm Flux (English) = Flux * 9.2366E+10

Date	Time (min)	Reading In	X	Reading Out	Y	X-Y	Head (cm)	H (cm)	Initial K (cm/sec)	Initial Flux ($m^3/m^2/sec$)		Avg Flux ($m^3/m^2/sec$)	Final K (cm/sec)	Final Flux (Gal/Acre /Day)	Inflow to Outflow Ratio
3/6/07	0	1.0	23.0	24.0	0.0	23.0	140.63	163.63							
	86	1.4	22.6	23.6	0.4	22.2	140.63	162.83	3.71E-09	9.56E-09			3.86E-9		1.00
	188	1.7	22.3	23.5	0.5	21.8	140.63	162.43	1.57E-09	4.03E-09			1.63E-9		3.00
	320	2.1	21.9	23.2	0.8	21.1	140.63	161.73	2.13E-09	5.45E-09			2.22E-9		1.33
	407	2.4	21.6	22.9	1.1	20.5	140.63	161.13	2.78E-09	7.09E-09			2.89E-9		1.00
	520	2.7	21.3	22.7	1.3	20.0	140.63	160.63	1.79E-09	4.55E-09			1.86E-9		1.50
	613	3.0	21.0	22.4	1.6	19.4	140.63	160.03	2.62E-09	6.63E-09			2.73E-9		1.00
3/7/07	1447	5.4	18.6	20.3	3.7	14.9	140.63	155.53	2.22E-09	5.55E-09	*		2.32E-9		1.14
	1578	5.7	18.3	20.0	4.0	14.3	140.63	154.93	1.92E-09	4.71E-09	*		2.00E-9		1.00
	1680	5.9	18.1	19.8	4.2	13.9	140.63	154.53	1.65E-09	4.03E-09	*	**4.76E-09**	1.72E-9	440	1.00

Final Flux 4.8E-9 $m^3/m^2/sec$

Final Hydraulic Conductivity 2.0E-9 cm/s

INDEX FLUX AND PERMEABILITY OF GCL's
ST RESULTS
D-5887 / D-5084

Client	: CETCO		Date	:	03/09/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1100 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.16	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	49.30	Final Wet Weight(Clay) (g)	:	72.10
Wet Density (pcf)	:	93.33	Wet Density (pcf)	:	109.19
Moisture Content %	:	33.60	Moisture Content %	:	95.40
Dry Density (pcf)	:	69.86	Dry Density (pcf)	:	55.88

Test Parameters

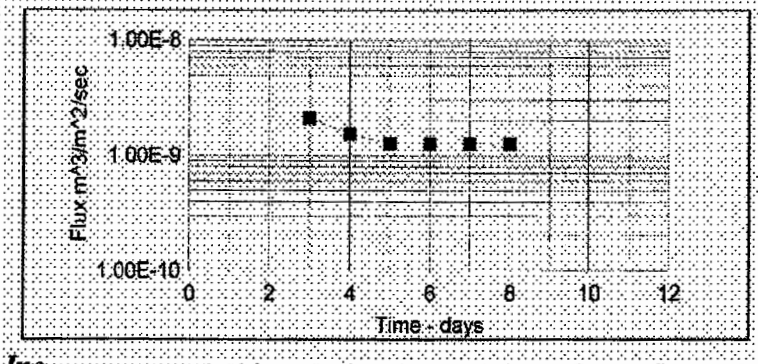
Fluid	:	De-Aired Water	Average Effective		
Cell Pressure psi)	:	80.00	Confining Pressure (psf)	:	4
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	02/28/2007	hours of hydration per ASTM				
2	03/01/2007					
3	03/02/2007	1.60	1444	86640	2.14E-009	7.74E-010
4	03/03/2007	1.10	1443	86580	1.57E-009	5.68E-010
5	03/04/2007	0.90	1441	86460	1.28E-009	4.65E-010
6	03/05/2007	0.90	1442	86520	1.28E-009	4.65E-010
7	03/06/2007	0.90	1441	86460	1.28E-009	4.65E-010
8	03/07/2007	0.90	1442	86520	1.28E-009	4.65E-010



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INDEX FLUX AND PERMEABILITY OF GCL's
ST RESULTS
D-5887 / D-5084

Client	: CETCO		Date	:	03/09/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1138 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.16	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	48.50	Final Wet Weight(Clay) (g)	:	83.30
Wet Density (pcf)	:	91.81	Wet Density (pcf)	:	126.15
Moisture Content %	:	30.00	Moisture Content %	:	123.30
Dry Density (pcf)	:	70.63	Dry Density (pcf)	:	56.49

Test Parameters

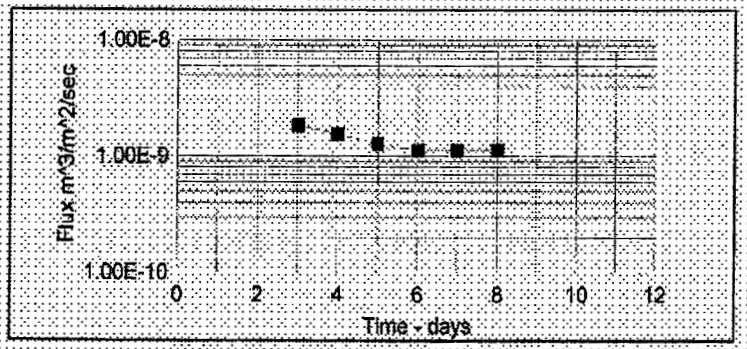
Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	4
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	02/28/2007	hours of hydration per ASTM				
2	03/01/2007					
3	03/02/2007	1.30	1444	86640	1.85E-009	6.71E-010
4	03/03/2007	1.10	1443	86580	1.57E-009	5.68E-010
5	03/04/2007	0.90	1441	86460	1.28E-009	4.65E-010
6	03/05/2007	0.80	1442	86520	1.14E-009	4.13E-010
7	03/06/2007	0.80	1441	86460	1.14E-009	4.14E-010
8	03/07/2007	0.80	1441	86460	1.14E-009	4.14E-010



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INDEX FLUX AND PERMEABILITY OF GCL's
ST RESULTS
D-5887 / D-5084

Client	: CETCO		Date	:	03/09/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1182 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.18	Final Height of Clay (in)	:	0.21
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	51.30	Final Wet Weight(Clay) (g)	:	70.80
Wet Density (pcf)	:	86.32	Wet Density (pcf)	:	102.12
Moisture Content %	:	25.20	Moisture Content %	:	72.60
Dry Density (pcf)	:	68.95	Dry Density (pcf)	:	59.16

Test Parameters

Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	4
Head Water psi)	:	77.00	Gradient	:	262.86
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

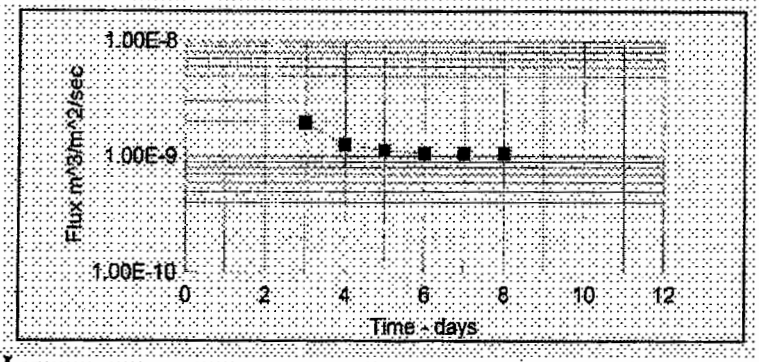
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.21 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	02/28/2007	ours of hydration per ASTM				
2	03/01/2007					
3	03/02/2007	1.40	1443	86580	1.99E-009	7.59E-010
4	03/03/2007	0.90	1442	86520	1.28E-009	4.88E-010
5	03/04/2007	0.80	1442	86520	1.14E-009	4.34E-010
6	03/05/2007	0.75	1441	86460	1.07E-009	4.07E-010
7	03/06/2007	0.75	1442	86520	1.07E-009	4.07E-010
8	03/07/2007	0.75	1441	86460	1.07E-009	4.07E-010



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INDEX FLUX AND PERMEABILITY OF GCL's
ST RESULTS
D-5887 / D-5084

Client	: CETCO		Date	:	03/09/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1226 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.15	Final Height of Clay (in)	:	0.19
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	45.40	Final Wet Weight(Clay) (g)	:	68.10
Wet Density (pcf)	:	91.67	Wet Density (pcf)	:	108.56
Moisture Content %	:	35.90	Moisture Content %	:	103.90
Dry Density (pcf)	:	67.46	Dry Density (pcf)	:	53.24

Test Parameters

Fluid	:	De-Aired Water	Average Effective		
Cell Pressure psi)	:	80.00	Confining Pressure (psi)	:	4
Head Water psi)	:	77.00	Gradient	:	290.53
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

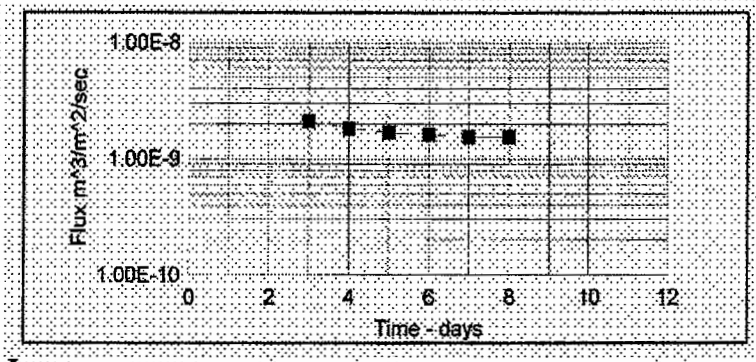
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.19 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	02/28/2007	hours of hydration per ASTM				
2	03/01/2007					
3	03/02/2007	1.50	1443	86580	2.14E-009	7.36E-010
4	03/03/2007	1.30	1442	86520	1.85E-009	6.38E-010
5	03/04/2007	1.20	1442	86520	1.71E-009	5.89E-010
6	03/05/2007	1.15	1441	86460	1.64E-009	5.65E-010
7	03/06/2007	1.10	1442	86520	1.57E-009	5.40E-010
8	03/07/2007	1.10	1441	86460	1.57E-009	5.40E-010



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INDEX FLUX AND PERMEABILITY OF GCL's
ST RESULTS
D-5887 / D-5084

Client	: CETCO		Date	:	03/09/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1264 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.16	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	52.00	Final Wet Weight(Clay) (g)	:	80.80
Wet Density (pcf)	:	98.44	Wet Density (pcf)	:	122.37
Moisture Content %	:	30.60	Moisture Content %	:	103.00
Dry Density (pcf)	:	75.37	Dry Density (pcf)	:	60.28

Test Parameters

Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	4
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

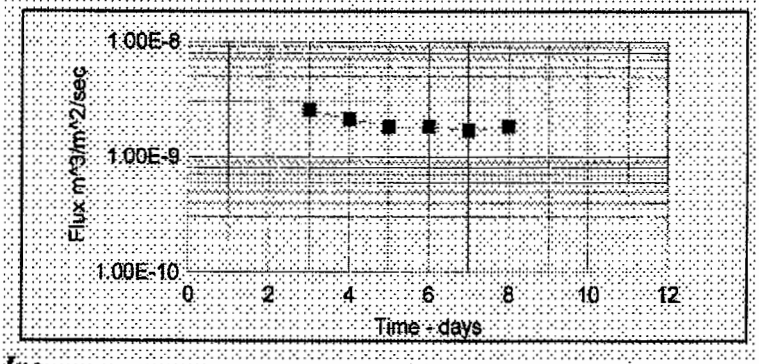
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	02/28/2007	hours of hydration per ASTM				
2	03/01/2007					
3	03/02/2007	1.80	1442	86520	2.57E-009	9.30E-010
4	03/03/2007	1.60	1441	86460	2.14E-009	7.75E-010
5	03/04/2007	1.30	1442	86520	1.85E-009	6.72E-010
6	03/05/2007	1.30	1441	86460	1.85E-009	6.72E-010
7	03/06/2007	1.20	1442	86520	1.71E-009	6.20E-010
8	03/07/2007	1.30	1440	86400	1.86E-009	6.72E-010



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INDEX FLUX AND PERMEABILITY OF GCL's
ST RESULTS
D-5887 / D-5084

Client	: CETCO		Date	:	03/09/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1309 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.16	Final Height of Clay (in)	:	0.19
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	48.40	Final Wet Weight(Clay) (g)	:	78.90
Wet Density (pcf)	:	91.62	Wet Density (pcf)	:	125.78
Moisture Content %	:	24.60	Moisture Content %	:	104.90
Dry Density (pcf)	:	73.53	Dry Density (pcf)	:	61.38

Test Parameters

Fluid	:	De-Aired Water	Average Effective		
Cell Pressure psi)	:	80.00	Confining Pressure (psi)	:	4
Head Water psi)	:	77.00	Gradient	:	290.53
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

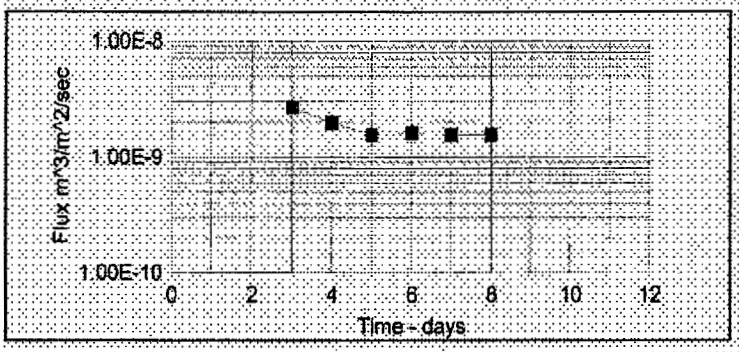
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.19 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	02/28/2007	hours of hydration per ASTM				
2	03/01/2007					
3	03/02/2007	1.90	1442	86520	2.71E-009	9.32E-010
4	03/03/2007	1.40	1441	86460	2.00E-009	6.88E-010
5	03/04/2007	1.10	1442	86520	1.57E-009	5.40E-010
6	03/05/2007	1.15	1441	86460	1.64E-009	5.65E-010
7	03/06/2007	1.10	1442	86520	1.57E-009	5.40E-010
8	03/07/2007	1.10	1440	86400	1.57E-009	5.41E-010



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INDEX FLUX AND PERMEABILITY OF GCL's
ST RESULTS
D-5887 / D-5084

Client	: CETCO		Date	:	03/09/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1353 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.15	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	53.70	Final Wet Weight(Clay) (g)	:	85.80
Wet Density (pcf)	:	108.43	Wet Density (pcf)	:	129.94
Moisture Content %	:	26.80	Moisture Content %	:	102.40
Dry Density (pcf)	:	85.52	Dry Density (pcf)	:	64.20

Test Parameters

Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	4
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

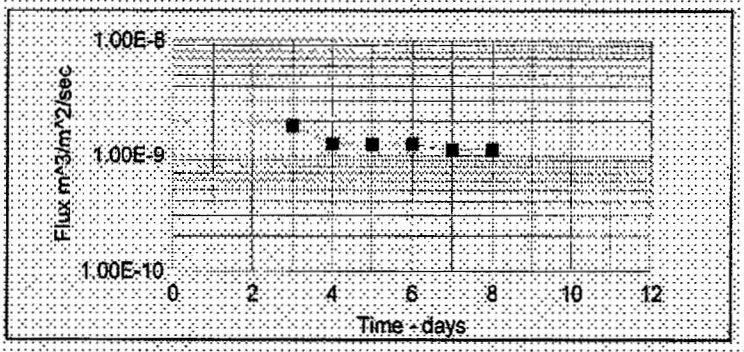
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	02/28/2007	hours of hydration per ASTM				
2	03/01/2007					
3	03/02/2007	1.30	1442	86520	1.85E-009	6.72E-010
4	03/03/2007	0.90	1441	86460	1.28E-009	4.65E-010
5	03/04/2007	0.90	1442	86520	1.28E-009	4.65E-010
6	03/05/2007	0.90	1441	86460	1.28E-009	4.65E-010
7	03/06/2007	0.80	1442	86520	1.14E-009	4.13E-010
8	03/07/2007	0.80	1440	86400	1.14E-009	4.14E-010



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INDEX FLUX AND PERMEABILITY OF GCL's
ST RESULTS
D-5887 / D-5084

Client	: CETCO		Date	:	03/09/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1444 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.15	Final Height of Clay (in)	:	0.19
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	48.20	Final Wet Weight(Clay) (g)	:	79.30
Wet Density (pcf)	:	97.33	Wet Density (pcf)	:	126.42
Moisture Content %	:	23.60	Moisture Content %	:	103.30
Dry Density (pcf)	:	78.74	Dry Density (pcf)	:	62.18

Test Parameters

Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	4
Head Water psi)	:	77.00	Gradient	:	290.53
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

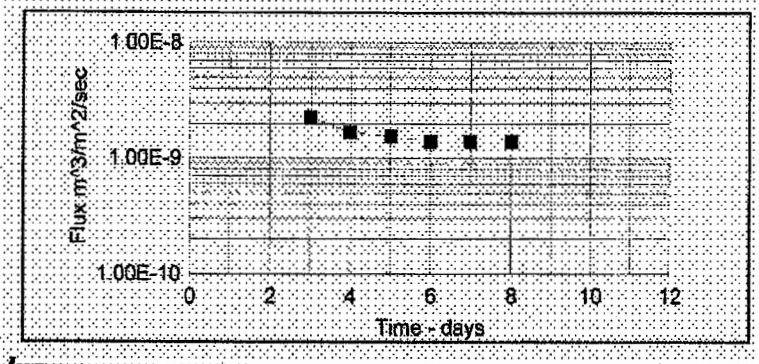
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.19 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	02/28/2007	ours of hydration per ASTM				
2	03/01/2007					
3	03/02/2007	1.60	1442	86520	2.28E-009	7.85E-010
4	03/03/2007	1.20	1441	86460	1.71E-009	5.89E-010
5	03/04/2007	1.10	1442	86520	1.57E-009	5.40E-010
6	03/05/2007	1.00	1441	86460	1.43E-009	4.91E-010
7	03/06/2007	1.00	1442	86520	1.43E-009	4.91E-010
8	03/07/2007	1.00	1440	86400	1.43E-009	4.91E-010



JLT Laboratories, Inc. 938 S Central Ave, Canonsburg, Pa. 15317 Tel 724-746-4441 , Fax 724-745-4261

INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

Client	: CETCO		Date	:	03/11/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1397 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.15	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	44.40	Final Wet Weight(Clay) (g)	:	69.00
Wet Density (pcf)	:	89.65	Wet Density (pcf)	:	104.50
Moisture Content %	:	28.60	Moisture Content %	:	100.00
Dry Density (pcf)	:	69.72	Dry Density (pcf)	:	52.25

Test Parameters

Fluid	:	De-Aired Water	Average Effective		
Cell Pressure psi)	:	80.00	Confining Pressure (psi)	:	4
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

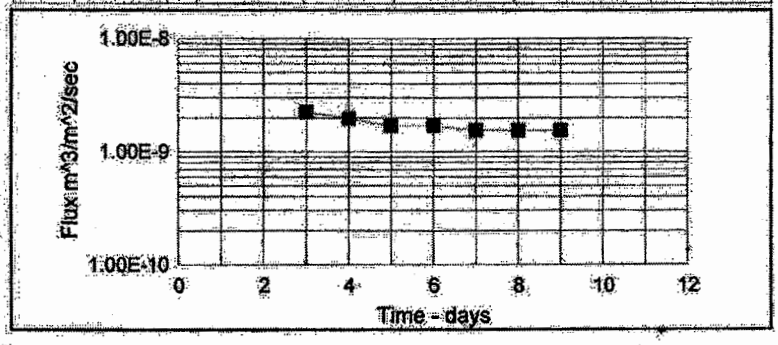
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/02/2007	48 hours of hydration per ASTM				
2	03/03/2007					
3	03/04/2007	1.60	1442	86520	2.28E-009	8.27E-010
4	03/05/2007	1.40	1441	86460	2.00E-009	7.24E-010
5	03/06/2007	1.20	1442	86520	1.71E-009	6.20E-010
6	03/07/2007	1.20	1441	86460	1.71E-009	6.20E-010
7	03/08/2007	1.10	1442	86520	1.57E-009	5.68E-010
8	03/09/2007	1.10	1440	86400	1.57E-009	5.69E-010
9	03/10/2007	1.10	1440	86400	1.57E-009	5.69E-010



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INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

JLT

Client	: CETCO		Date	:	03/11/2007
Project Location	: Charolette Motor Speedway		Job No.	:	07LG1014.01
Sample Number	: Roll 1501 Lot: 200708CV		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.16	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	45.40	Final Wet Weight(Clay) (g)	:	70.90
Wet Density (pcf)	:	85.94	Wet Density (pcf)	:	107.37
Moisture Content %	:	29.20	Moisture Content %	:	101.60
Dry Density (pcf)	:	66.52	Dry Density (pcf)	:	53.26

Test Parameters

Fluid	:	De-Aired Water	Average Effective		
Cell Pressure psi)	:	80.00	Confining Pressure (psi)	:	4
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

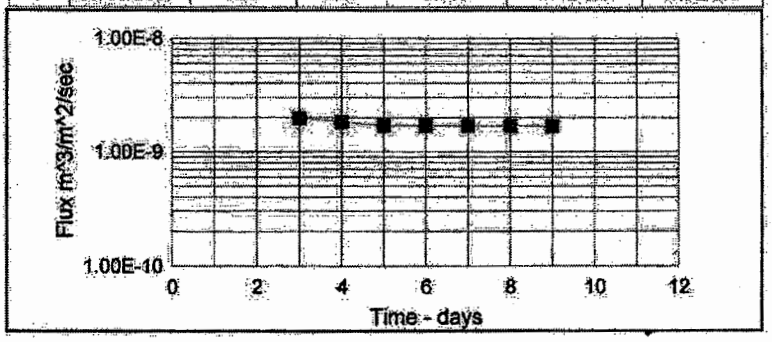
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/02/2007	48 hours of hydration per ASTM				
2	03/03/2007					
3	03/04/2007	1.40	1441	86460	2.00E-009	7.24E-010
4	03/05/2007	1.30	1440	86400	1.86E-009	6.72E-010
5	03/06/2007	1.20	1439	86340	1.71E-009	6.21E-010
6	03/07/2007	1.20	1442	86520	1.71E-009	6.20E-010
7	03/08/2007	1.20	1440	86400	1.71E-009	6.21E-010
8	03/09/2007	1.20	1442	86520	1.71E-009	6.20E-010
9	03/10/2007	1.20	1446	86760	1.71E-009	6.18E-010



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ACC of NORTH CAROLINA, LLC

SECTION H-3
Geocomposite

SKAPS Industries

Engineered Synthetic Products, Inc.

February 23, 2007
Agru America, Inc.
500 Garrison Road
Georgetown, SC 29440

Ref. : Charlotte Motor Speedway, NC
Customer P.O. # 4513
Transnet 270-2-8

We certify that the Transnet 270-2-8 drainage composite, meets the project requirements as stated in the specifications. The properties listed in this section are:

Property	Test Method	Unit	Required Value	Qualifier
Geonet[3]				
Mass per Unit Area	ASTM D 5261	lbs/ft^2	0.2	Minimum
Thickness	ASTM D 5199	mil	250	Minimum
Carbon Black	ASTM D 4218	%	2.0	Minimum
Tensile Strength	ASTM D 5035	lbs/in	55	Minimum
Melt Flow	ASTM D 1238[2]	g/10 min	1.0	Maximum
Density	ASTM D 1505	g/cm^3	0.94	Minimum
Composite				
Ply Adhesion	GRI GC7	lb/in	0.5	MARV[5]
Transmissivity[1]	ASTM D 4716	m^2/sec	5.0 x 10^{-4}	MARV
Geotextile[3,4]				
Fabric Weight	ASTM D 5261	oz/yd^2	8.0	MARV
Grab Strength	ASTM D 4632	lbs	205	MARV
Thickness	ASTM D 1777	mils	100	MARV
Grab Elongation	ASTM D 4632	%	50	MARV
Tear Strength	ASTM D 4533	lbs	80	MARV
Puncture Resistance	ASTM D 4833	lbs	95	MARV
Mullen Burst	ASTM D 3786	psi	425	MARV
Water Flow Rate	ASTM D 4491	gpm/ft^2	100	MARV
Permittivity	ASTM D 4491	sec^{-1}	1.05	MARV
Permeability	ASTM D 4491	cm/sec	0.3	MARV
AOS	ASTM D 4751	US Sieve	80	MARV

Notes:

1 Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hours.

2 Condition 190/2.16

3 Geotextile and Geonet properties are prior to lamination.

4 Geotextile data is provided by the supplier.

5 MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.

Sincerely,

Nilay Patel

Nilay Patel
QA Manager

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245001	2245001 - N	2245.008	2245.002	1.30	1.86	6.31×10^{-4}
2	2245002	2245002 - N	2245.008	2245.002			
3	2245003	2245003 - N	2245.008	2245.002			
4	2245004	2245004 - N	2245.008	2245.002			
5	2245005	2245005 - N	2245.008	2245.002			
6	2245006	2245006 - N	2245.008	2245.002			
7	2245007	2245007 - N	2245.001	2245.009			
8	2245008	2245008 - N	2245.001	2245.009			
9	2245009	2245009 - N	2245.001	2245.009			
10	2245010	2245010 - N	2245.001	2245.009			
11	2245011	2245011 - N	2245.001	2245.009			
12	2245012	2245012 - N	2245.001	2245.009			
13	2245013	2245013 - N	2245.012	2245.004			
14	2245014	2245014 - N	2245.012	2245.004			
15	2245015	2245015 - N	2245.012	2245.004	1.21	1.69	
16	2245016	2245016 - N	2245.012	2245.004			
17	2245017	2245017 - N	2245.012	2245.004			
18	2245018	2245018 - N	2245.012	2245.004			
19	2245019	2245019 - N	2245.003	2245.011			
20	2245020	2245020 - N	2245.003	2245.011			
21	2245021	2245021 - N	2245.003	2245.011			
22	2245022	2245022 - N	2245.003	2245.011			
23	2245023	2245023 - N	2245.003	2245.011			
24	2245024	2245024 - N	2245.003	2245.011			
25	2245025	2245025 - N	2245.015	2245.006			
26	2245026	2245026 - N	2245.015	2245.006			
27	2245027	2245027 - N	2245.015	2245.006			

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245001 - N	UTCX54823	0.9557	0.288	273	2.53	96	
2245002 - N	UTCX54823	0.9557					
2245003 - N	UTCX54823	0.9557					
2245004 - N	UTCX54823	0.9557					
2245005 - N	UTCX54823	0.9557					
2245006 - N	UTCX54823	0.9557					
2245007 - N	UTCX54823	0.9557					
2245008 - N	UTCX54823	0.9557					
2245009 - N	UTCX54823	0.9557					
2245010 - N	UTCX54823	0.9557					
2245011 - N	UTCX54823	0.9557					
2245012 - N	UTCX54823	0.9557					
2245013 - N	UTCX54823	0.9557					
2245014 - N	UTCX54823	0.9557					
2245015 - N	UTCX54823	0.9557	0.279	270	2.42	94	
2245016 - N	UTCX54823	0.9557					
2245017 - N	UTCX54823	0.9557					
2245018 - N	UTCX54823	0.9557					
2245019 - N	UTCX54823	0.9557					
2245020 - N	UTCX54823	0.9557					
2245021 - N	UTCX54823	0.9557					
2245022 - N	UTCX54823	0.9557					
2245023 - N	UTCX54823	0.9557					
2245024 - N	UTCX54823	0.9557					
2245025 - N	UTCX54823	0.9557					
2245026 - N	UTCX54823	0.9557					
2245027 - N	UTCX54823	0.9557					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245028	2245028 - N	2245.015	2245.006			
2	2245029	2245029 - N	2245.015	2245.006			
3	2245030	2245030 - N	2245.015	2245.006	1.32	1.91	
4	2245031	2245031 - N	2245.007	2245.021			
5	2245032	2245032 - N	2245.007	2245.021			
6	2245033	2245033 - N	2245.007	2245.021			
7	2245034	2245034 - N	2245.007	2245.021			
8	2245035	2245035 - N	2245.007	2245.021			
9	2245036	2245036 - N	2245.007	2245.021			
10	2245037	2245037 - N	2245.013	2245.014			
11	2245038	2245038 - N	2245.013	2245.014			
12	2245039	2245039 - N	2245.013	2245.014			
13	2245040	2245040 - N	2245.013	2245.014			
14	2245041	2245041 - N	2245.013	2245.014			
15	2245042	2245042 - N	2245.013	2245.014			
16	2245043	2245043 - N	2245.005	2245.023			
17	2245044	2245044 - N	2245.005	2245.023			
18	2245045	2245045 - N	2245.005	2245.023	1.25	1.52	
19	2245046	2245046 - N	2245.005	2245.023			
20	2245047	2245047 - N	2245.005	2245.023			
21	2245048	2245048 - N	2245.005	2245.023			
22	2245049	2245049 - N	2245.017	2245.016			
23	2245050	2245050 - N	2245.017	2245.016			
24	2245051	2245051 - N	2245.017	2245.016			
25	2245052	2245052 - N	2245.017	2245.016			
26	2245053	2245053 - N	2245.017	2245.016			
27	2245054	2245054 - N	2245.017	2245.016			

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245028 - N	UTCX54823	0.9557					
2245029 - N	UTCX54823	0.9557					
2245030 - N	UTCX54823	0.9557	0.292	277	2.67	98	
2245031 - N	UTCX54823	0.9557					
2245032 - N	UTCX54823	0.9557					
2245033 - N	UTCX54823	0.9557					
2245034 - N	UTCX54823	0.9557					
2245035 - N	UTCX54823	0.9548					
2245036 - N	UTCX54823	0.9548					
2245037 - N	UTCX54823	0.9548					
2245038 - N	UTCX54823	0.9548					
2245039 - N	UTCX54823	0.9548					
2245040 - N	UTCX54823	0.9548					
2245041 - N	UTCX54823	0.9548					
2245042 - N	UTCX54823	0.9548					
2245043 - N	UTCX54823	0.9548					
2245044 - N	UTCX54823	0.9548					
2245045 - N	UTCX54823	0.9548	0.283	272	2.31	92	
2245046 - N	UTCX54823	0.9548					
2245047 - N	UTCX54823	0.9548					
2245048 - N	UTCX54823	0.9548					
2245049 - N	UTCX54823	0.9548					
2245050 - N	UTCX54823	0.9548					
2245051 - N	UTCX54823	0.9548					
2245052 - N	UTCX54823	0.9548					
2245053 - N	UTCX54823	0.9548					
2245054 - N	UTCX54823	0.9548					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245055	2245055 - N	2245.010	2245.028			
2	2245056	2245056 - N	2245.010	2245.028			
3	2245057	2245057 - N	2245.010	2245.028			
4	2245058	2245058 - N	2245.010	2245.028			
5	2245059	2245059 - N	2245.010	2245.028			
6	2245060	2245060 - N	2245.010	2245.028	1.28	1.82	
7	2245061	2245061 - N	2245.025	2245.019			
8	2245062	2245062 - N	2245.025	2245.019			
9	2245063	2245063 - N	2245.025	2245.019			
10	2245064	2245064 - N	2245.025	2245.019			
11	2245065	2245065 - N	2245.025	2245.019			
12	2245066	2245066 - N	2245.025	2245.019			
13	2245067	2245067 - N	2245.018	2245.030			
14	2245068	2245068 - N	2245.018	2245.030			
15	2245069	2245069 - N	2245.018	2245.030			
16	2245070	2245070 - N	2245.018	2245.030			6.11×10^{-4}
17	2245071	2245071 - N	2245.018	2245.030			
18	2245072	2245072 - N	2245.018	2245.030			
19	2245073	2245073 - N	2245.027	2245.022			
20	2245074	2245074 - N	2245.027	2245.022			
21	2245075	2245075 - N	2245.027	2245.022	1.23	1.61	
22	2245076	2245076 - N	2245.027	2245.022			
23	2245077	2245077 - N	2245.027	2245.022			
24	2245078	2245078 - N	2245.027	2245.022			
25	2245079	2245079 - N	2245.020	2245.034			
26	2245080	2245080 - N	2245.020	2245.034			
27	2245081	2245081 - N	2245.020	2245.034			

* Transmissivity measured using water at 21 $\pm$ 2 °C (70 $\pm$ 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245055 - N	UTCX54823	0.9548					
2245056 - N	UTCX54823	0.9548					
2245057 - N	UTCX54823	0.9548					
2245058 - N	UTCX54823	0.9548					
2245059 - N	UTCX54823	0.9548					
2245060 - N	UTCX54823	0.9548	0.294	275	2.59	95	
2245061 - N	UTCX54823	0.9548					
2245062 - N	UTCX54823	0.9548					
2245063 - N	UTCX54823	0.9548					
2245064 - N	UTCX54823	0.9548					
2245065 - N	UTCX54823	0.9548					
2245066 - N	UTCX54823	0.9548					
2245067 - N	UTCX54823	0.9548					
2245068 - N	UTCX54823	0.9548					
2245069 - N	UTCX54823	0.9548					
2245070 - N	UTCX54823	0.9559					
2245071 - N	UTCX54823	0.9559					
2245072 - N	UTCX54823	0.9559					
2245073 - N	UTCX54823	0.9559					
2245074 - N	UTCX54823	0.9559					
2245075 - N	UTCX54823	0.9559	0.281	268	2.48	93	
2245076 - N	UTCX54823	0.9559					
2245077 - N	UTCX54823	0.9559					
2245078 - N	UTCX54823	0.9559					
2245079 - N	UTCX54823	0.9559					
2245080 - N	UTCX54823	0.9559					
2245081 - N	UTCX54823	0.9559					

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 Fax: 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245082	2245082 - N	2245.020	2245.034			
2	2245083	2245083 - N	2245.020	2245.034			
3	2245084	2245084 - N	2245.020	2245.034			
4	2245085	2245085 - N	2245.032	2245.026			
5	2245086	2245086 - N	2245.032	2245.026			
6	2245087	2245087 - N	2245.032	2245.026			
7	2245088	2245088 - N	2245.032	2245.026			
8	2245089	2245089 - N	2245.032	2245.026			
9	2245090	2245090 - N	2245.032	2245.026	1.36	1.97	
10	2245091	2245091 - N	2245.024	2245.036			
11	2245092	2245092 - N	2245.024	2245.036			
12	2245093	2245093 - N	2245.024	2245.036			
13	2245094	2245094 - N	2245.024	2245.036			
14	2245095	2245095 - N	2245.024	2245.036			
15	2245096	2245096 - N	2245.024	2245.036			
16	2245097	2245097 - N	2245.035	2245.031			
17	2245098	2245098 - N	2245.035	2245.031			
18	2245099	2245099 - N	2245.035	2245.031			
19	2245100	2245100 - N	2245.035	2245.031			
20	2245101	2245101 - N	2245.035	2245.031			
21	2245102	2245102 - N	2245.035	2245.031			
22	2245103	2245103 - N	2245.029	2245.037			
23	2245104	2245104 - N	2245.029	2245.037			
24	2245105	2245105 - N	2245.029	2245.037	1.17	1.58	
25	2245106	2245106 - N	2245.029	2245.037			
26	2245107	2245107 - N	2245.029	2245.037			
27	2245108	2245108 - N	2245.029	2245.037			

* Transmissivity measured using water at 21 $\pm$ 2 °C (70 $\pm$ 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245082 - N	UTCX54823	0.9559					
2245083 - N	UTCX54823	0.9559					
2245084 - N	UTCX54823	0.9559					
2245085 - N	UTCX54823	0.9559					
2245086 - N	UTCX54823	0.9559					
2245087 - N	UTCX54823	0.9559					
2245088 - N	UTCX54823	0.9559					
2245089 - N	UTCX54823	0.9559					
2245090 - N	UTCX54823	0.9559	0.296	276	2.61	97	
2245091 - N	UTCX54823	0.9559					
2245092 - N	UTCX54823	0.9559					
2245093 - N	UTCX54823	0.9559					
2245094 - N	UTCX54823	0.9559					
2245095 - N	UTCX54823	0.9559					
2245096 - N	UTCX54823	0.9559					
2245097 - N	UTCX54823	0.9559					
2245098 - N	UTCX54823	0.9559					
2245099 - N	UTCX54823	0.9559					
2245100 - N	UTCX54823	0.9559					
2245101 - N	UTCX54823	0.9559					
2245102 - N	UTCX54823	0.9559					
2245103 - N	UTCX54823	0.9559					
2245104 - N	UTCX54823	0.9559					
2245105 - N	UTCX54823	0.9546	0.273	269	2.39	94	
2245106 - N	UTCX54823	0.9546					
2245107 - N	UTCX54823	0.9546					
2245108 - N	UTCX54823	0.9546					

APPROVED 5 QA

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245109	2245109 - N	2245.046	2245.033			
2	2245110	2245110 - N	2245.046	2245.033			
3	2245111	2245111 - N	2245.046	2245.033			
4	2245112	2245112 - N	2245.046	2245.033			
5	2245113	2245113 - N	2245.046	2245.033			
6	2245114	2245114 - N	2245.046	2245.033			
7	2245115	2245115 - N	2245.038	2245.049			
8	2245116	2245116 - N	2245.038	2245.049			
9	2245117	2245117 - N	2245.038	2245.049			
10	2245118	2245118 - N	2245.038	2245.049			
11	2245119	2245119 - N	2245.038	2245.049			
12	2245120	2245120 - N	2245.038	2245.049	1.34	1.88	
13	2245121	2245121 - N	2245.050	2245.042			
14	2245122	2245122 - N	2245.050	2245.042			
15	2245123	2245123 - N	2245.050	2245.042			
16	2245124	2245124 - N	2245.050	2245.042			
17	2245125	2245125 - N	2245.050	2245.042			
18	2245126	2245126 - N	2245.050	2245.042			
19	2245127	2245127 - N	2245.041	2245.047			
20	2245128	2245128 - N	2245.041	2245.047			
21	2245129	2245129 - N	2245.041	2245.047			
22	2245130	2245130 - N	2245.041	2245.047			
23	2245131	2245131 - N	2245.041	2245.047			
24	2245132	2245132 - N	2245.041	2245.047			
25	2245133	2245133 - N	2245.048	2245.039			
26	2245134	2245134 - N	2245.048	2245.039			
27	2245135	2245135 - N	2245.048	2245.039	1.19	1.67	

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245109 - N	UTCX54823	0.9546					
2245110 - N	UTCX54823	0.9546					
2245111 - N	UTCX54823	0.9546					
2245112 - N	UTCX54823	0.9546					
2245113 - N	UTCX54823	0.9546					
2245114 - N	UTCX54823	0.9546					
2245115 - N	UTCX54823	0.9546					
2245116 - N	UTCX54823	0.9546					
2245117 - N	UTCX54823	0.9546					
2245118 - N	UTCX54823	0.9546					
2245119 - N	UTCX54823	0.9546					
2245120 - N	UTCX54823	0.9546	0.284	274	2.51	96	
2245121 - N	UTCX54823	0.9546					
2245122 - N	UTCX54823	0.9546					
2245123 - N	UTCX54823	0.9546					
2245124 - N	UTCX54823	0.9546					
2245125 - N	UTCX54823	0.9546					
2245126 - N	UTCX54823	0.9546					
2245127 - N	UTCX54823	0.9546					
2245128 - N	UTCX54823	0.9546					
2245129 - N	UTCX54823	0.9546					
2245130 - N	UTCX54823	0.9546					
2245131 - N	UTCX54823	0.9546					
2245132 - N	UTCX54823	0.9546					
2245133 - N	UTCX54823	0.9546					
2245134 - N	UTCX54823	0.9546					
2245135 - N	UTCX54823	0.9546	0.277	271	2.44	92	

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245136	2245136 - N	2245.048	2245.039			
2	2245137	2245137 - N	2245.048	2245.039			
3	2245138	2245138 - N	2245.048	2245.039			
4	2245139	2245139 - N	2245.040	2245.054			
5	2245140	2245140 - N	2245.040	2245.054			6.24×10^{-4}
6	2245141	2245141 - N	2245.040	2245.054			
7	2245142	2245142 - N	2245.040	2245.054			
8	2245143	2245143 - N	2245.040	2245.054			
9	2245144	2245144 - N	2245.040	2245.054			
10	2245145	2245145 - N	2245.052	2245.045			
11	2245146	2245146 - N	2245.052	2245.045			
12	2245147	2245147 - N	2245.052	2245.045			
13	2245148	2245148 - N	2245.052	2245.045			
14	2245149	2245149 - N	2245.052	2245.045			
15	2245150	2245150 - N	2245.052	2245.045	1.26	1.95	
16	2245151	2245151 - N	2245.044	2245.059			
17	2245152	2245152 - N	2245.044	2245.059			
18	2245153	2245153 - N	2245.044	2245.059			
19	2245154	2245154 - N	2245.044	2245.059			
20	2245155	2245155 - N	2245.044	2245.059			
21	2245156	2245156 - N	2245.044	2245.059			
22	2245157	2245157 - N	2245.055	2245.051			
23	2245158	2245158 - N	2245.055	2245.051			
24	2245159	2245159 - N	2245.055	2245.051			
25	2245160	2245160 - N	2245.055	2245.051			
26	2245161	2245161 - N	2245.055	2245.051			
27	2245162	2245162 - N	2245.055	2245.051			

* Transmissivity measured using water at 21 $\pm$ 2 °C (70 $\pm$ 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245136 - N	UTCX54823	0.9546					
2245137 - N	UTCX54823	0.9546					
2245138 - N	UTCX54823	0.9546					
2245139 - N	UTCX54823	0.9546					
2245140 - N	UTCX54823	0.9555					
2245141 - N	UTCX54823	0.9555					
2245142 - N	UTCX54823	0.9555					
2245143 - N	UTCX54823	0.9555					
2245144 - N	UTCX54823	0.9555					
2245145 - N	UTCX54823	0.9555					
2245146 - N	UTCX54823	0.9555					
2245147 - N	UTCX54823	0.9555					
2245148 - N	UTCX54823	0.9555					
2245149 - N	UTCX54823	0.9555					
2245150 - N	UTCX54823	0.9555	0.286	278	2.69	98	
2245151 - N	UTCX54823	0.9555					
2245152 - N	UTCX54823	0.9555					
2245153 - N	UTCX54823	0.9555					
2245154 - N	UTCX54823	0.9555					
2245155 - N	UTCX54823	0.9555					
2245156 - N	UTCX54823	0.9555					
2245157 - N	UTCX54823	0.9555					
2245158 - N	UTCX54823	0.9555					
2245159 - N	UTCX54823	0.9555					
2245160 - N	UTCX54823	0.9555					
2245161 - N	UTCX54823	0.9555					
2245162 - N	UTCX54823	0.9555					

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Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245163	2245163 - N	2245.043	2245.065			
2	2245164	2245164 - N	2245.043	2245.065			
3	2245165	2245165 - N	2245.043	2245.065	1.20	1.54	
4	2245166	2245166 - N	2245.043	2245.065			
5	2245167	2245167 - N	2245.043	2245.065			
6	2245168	2245168 - N	2245.043	2245.065			
7	2245169	2245169 - N	2245.061	2245.057			
8	2245170	2245170 - N	2245.061	2245.057			
9	2245171	2245171 - N	2245.061	2245.057			
10	2245172	2245172 - N	2245.061	2245.057			
11	2245173	2245173 - N	2245.061	2245.057			
12	2245174	2245174 - N	2245.061	2245.057			
13	2245175	2245175 - N	2245.053	2245.068			
14	2245176	2245176 - N	2245.053	2245.068			
15	2245177	2245177 - N	2245.053	2245.068			
16	2245178	2245178 - N	2245.053	2245.068			
17	2245179	2245179 - N	2245.053	2245.068			
18	2245180	2245180 - N	2245.053	2245.068	1.83	1.84	
19	2245181	2245181 - N	2245.064	2245.060			
20	2245182	2245182 - N	2245.064	2245.060			
21	2245183	2245183 - N	2245.064	2245.060			
22	2245184	2245184 - N	2245.064	2245.060			
23	2245185	2245185 - N	2245.064	2245.060			
24	2245186	2245186 - N	2245.064	2245.060			
25	2245187	2245187 - N	2245.056	2245.067			
26	2245188	2245188 - N	2245.056	2245.067			
27	2245189	2245189 - N	2245.056	2245.067			

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245163 - N	UTCX54823	0.9555					
2245164 - N	UTCX54823	0.9555					
2245165 - N	UTCX54823	0.9555	0.271	267	2.33	93	
2245166 - N	UTCX54823	0.9555					
2245167 - N	UTCX54823	0.9555					
2245168 - N	UTCX54823	0.9555					
2245169 - N	UTCX54823	0.9555					
2245170 - N	UTCX54823	0.9555					
2245171 - N	UTCX54823	0.9555					
2245172 - N	UTCX54823	0.9555					
2245173 - N	UTCX54823	0.9555					
2245174 - N	UTCX54823	0.9555					
2245175 - N	UTCX54823	0.9550					
2245176 - N	UTCX54823	0.9550					
2245177 - N	UTCX54823	0.9550					
2245178 - N	UTCX54823	0.9550					
2245179 - N	UTCX54823	0.9550					
2245180 - N	UTCX54823	0.9550	0.290	275	2.57	97	
2245181 - N	UTCX54823	0.9550					
2245182 - N	UTCX54823	0.9550					
2245183 - N	UTCX54823	0.9550					
2245184 - N	UTCX54823	0.9550					
2245185 - N	UTCX54823	0.9550					
2245186 - N	UTCX54823	0.9550					
2245187 - N	UTCX54823	0.9550					
2245188 - N	UTCX54823	0.9550					
2245189 - N	UTCX54823	0.9550					

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Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245190	2245190 - N	2245.056	2245.067			
2	2245191	2245191 - N	2245.056	2245.067			
3	2245192	2245192 - N	2245.056	2245.067			
4	2245193	2245193 - N	2245.070	2245.058			
5	2245194	2245194 - N	2245.070	2245.058			
6	2245195	2245195 - N	2245.070	2245.058	1.24	1.63	
7	2245196	2245196 - N	2245.070	2245.058			
8	2245197	2245197 - N	2245.070	2245.058			
9	2245198	2245198 - N	2245.070	2245.058			
10	2245199	2245199 - N	2245.062	2245.071			
11	2245200	2245200 - N	2245.062	2245.071			
12	2245201	2245201 - N	2245.062	2245.071			
13	2245202	2245202 - N	2245.062	2245.071			
14	2245203	2245203 - N	2245.062	2245.071			
15	2245204	2245204 - N	2245.062	2245.071			
16	2245205	2245205 - N	2245.072	2245.063			
17	2245206	2245206 - N	2245.072	2245.063			
18	2245207	2245207 - N	2245.072	2245.063			
19	2245208	2245208 - N	2245.072	2245.063			
20	2245209	2245209 - N	2245.072	2245.063			
21	2245210	2245210 - N	2245.072	2245.063	1.35	1.93	5.98×10^{-1}
22	2245211	2245211 - N	2245.066	2245.074			
23	2245212	2245212 - N	2245.066	2245.074			
24	2245213	2245213 - N	2245.066	2245.074			
25	2245214	2245214 - N	2245.066	2245.074			
26	2245215	2245215 - N	2245.066	2245.074			
27	2245216	2245216 - N	2245.066	2245.074			

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245190 - N	UTCX54823	0.9550					
2245191 - N	UTCX54823	0.9550					
2245192 - N	UTCX54823	0.9550					
2245193 - N	UTCX54823	0.9550					
2245194 - N	UTCX54823	0.9550					
2245195 - N	UTCX54823	0.9550	0.275	270	2.46	94	
2245196 - N	UTCX54823	0.9550					
2245197 - N	UTCX54823	0.9550					
2245198 - N	UTCX54823	0.9550					
2245199 - N	UTCX54823	0.9550					
2245200 - N	UTCX54823	0.9550					
2245201 - N	UTCX54823	0.9550					
2245202 - N	UTCX54823	0.9550					
2245203 - N	UTCX54823	0.9550					
2245204 - N	UTCX54823	0.9550					
2245205 - N	UTCX54823	0.9550					
2245206 - N	UTCX54823	0.9550					
2245207 - N	UTCX54823	0.9550					
2245208 - N	UTCX54823	0.9550					
2245209 - N	UTCX54823	0.9550					
2245210 - N	UTCX54823	0.9553	0.291	277	2.63	96	
2245211 - N	UTCX54823	0.9553					
2245212 - N	UTCX54823	0.9553					
2245213 - N	UTCX54823	0.9553					
2245214 - N	UTCX54823	0.9553					
2245215 - N	UTCX54823	0.9553					
2245216 - N	UTCX54823	0.9553					

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SKAPS Industries

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Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245217	2245217 - N	2245.080	2245.069			
2	2245218	2245218 - N	2245.080	2245.069			
3	2245219	2245219 - N	2245.080	2245.069			
4	2245220	2245220 - N	2245.080	2245.069			
5	2245221	2245221 - N	2245.080	2245.069			
6	2245222	2245222 - N	2245.080	2245.069			
7	2245223	2245223 - N	2245.073	2245.084			
8	2245224	2245224 - N	2245.073	2245.084			
9	2245225	2245225 - N	2245.073	2245.084	1.22	1.56	
10	2245226	2245226 - N	2245.073	2245.084			
11	2245227	2245227 - N	2245.073	2245.084			
12	2245228	2245228 - N	2245.073	2245.084			
13	2245229	2245229 - N	2245.082	2245.076			
14	2245230	2245230 - N	2245.082	2245.076			
15	2245231	2245231 - N	2245.082	2245.076			
16	2245232	2245232 - N	2245.082	2245.076			
17	2245233	2245233 - N	2245.082	2245.076			
18	2245234	2245234 - N	2245.082	2245.076			
19	2245235	2245235 - N	2245.075	2245.088			
20	2245236	2245236 - N	2245.075	2245.088			
21	2245237	2245237 - N	2245.075	2245.088			
22	2245238	2245238 - N	2245.075	2245.088			
23	2245239	2245239 - N	2245.075	2245.088			
24	2245240	2245240 - N	2245.075	2245.088	1.31	1.80	
25	2245241	2245241 - N	2245.086	2245.079			
26	2245242	2245242 - N	2245.086	2245.079			
27	2245243	2245243 - N	2245.086	2245.079			

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245217 - N	UTCX54823	0.9553					
2245218 - N	UTCX54823	0.9553					
2245219 - N	UTCX54823	0.9553					
2245220 - N	UTCX54823	0.9553					
2245221 - N	UTCX54823	0.9553					
2245222 - N	UTCX54823	0.9553					
2245223 - N	UTCX54823	0.9553					
2245224 - N	UTCX54823	0.9553					
2245225 - N	NCIX7002	0.9553	0.278	272	2.37	92	
2245226 - N	NCIX7002	0.9553					
2245227 - N	NCIX7002	0.9553					
2245228 - N	NCIX7002	0.9553					
2245229 - N	NCIX7002	0.9553					
2245230 - N	NCIX7002	0.9553					
2245231 - N	NCIX7002	0.9553					
2245232 - N	NCIX7002	0.9553					
2245233 - N	NCIX7002	0.9553					
2245234 - N	NCIX7002	0.9553					
2245235 - N	NCIX7002	0.9553					
2245236 - N	NCIX7002	0.9553					
2245237 - N	NCIX7002	0.9553					
2245238 - N	NCIX7002	0.9553					
2245239 - N	NCIX7002	0.9553					
2245240 - N	NCIX7002	0.9553	0.295	273	2.55	95	
2245241 - N	NCIX7002	0.9553					
2245242 - N	NCIX7002	0.9553					
2245243 - N	NCIX7002	0.9553					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245244	2245244 - N	2245.086	2245.079			
2	2245245	2245245 - N	2245.086	2245.079			
3	2245246	2245246 - N	2245.086	2245.079			
4	2245247	2245247 - N	2245.078	2245.089			
5	2245248	2245248 - N	2245.078	2245.089			
6	2245249	2245249 - N	2245.078	2245.089			
7	2245250	2245250 - N	2245.078	2245.089			
8	2245251	2245251 - N	2245.078	2245.089			
9	2245252	2245252 - N	2245.078	2245.089			
10	2245253	2245253 - N	2245.090	2245.081			
11	2245254	2245254 - N	2245.090	2245.081			
12	2245255	2245255 - N	2245.090	2245.081	1.16	1.65	
13	2245256	2245256 - N	2245.090	2245.081			
14	2245257	2245257 - N	2245.090	2245.081			
15	2245258	2245258 - N	2245.090	2245.081			
16	2245259	2245259 - N	2245.077	2245.093			
17	2245260	2245260 - N	2245.077	2245.093			
18	2245261	2245261 - N	2245.077	2245.093			
19	2245262	2245262 - N	2245.077	2245.093			
20	2245263	2245263 - N	2245.077	2245.093			
21	2245264	2245264 - N	2245.077	2245.093			
22	2245265	2245265 - N	2245.092	2245.087			
23	2245266	2245266 - N	2245.092	2245.087			
24	2245267	2245267 - N	2245.092	2245.087			
25	2245268	2245268 - N	2245.092	2245.087			
26	2245269	2245269 - N	2245.092	2245.087			
27	2245270	2245270 - N	2245.092	2245.087	1.27	1.72	

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

APPROVED 5 QA

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245244 - N	NCIX7002	0.9553					
2245245 - N	NCIX7002	0.9542					
2245246 - N	NCIX7002	0.9542					
2245247 - N	NCIX7002	0.9542					
2245248 - N	NCIX7002	0.9542					
2245249 - N	NCIX7002	0.9542					
2245250 - N	NCIX7002	0.9542					
2245251 - N	NCIX7002	0.9542					
2245252 - N	NCIX7002	0.9542					
2245253 - N	NCIX7002	0.9542					
2245254 - N	NCIX7002	0.9542					
2245255 - N	NCIX7002	0.9542	0.282	268	2.40	93	
2245256 - N	NCIX7002	0.9542					
2245257 - N	NCIX7002	0.9542					
2245258 - N	NCIX7002	0.9542					
2245259 - N	NCIX7002	0.9542					
2245260 - N	NCIX7002	0.9542					
2245261 - N	NCIX7002	0.9542					
2245262 - N	NCIX7002	0.9542					
2245263 - N	NCIX7002	0.9542					
2245264 - N	NCIX7002	0.9542					
2245265 - N	NCIX7002	0.9542					
2245266 - N	NCIX7002	0.9542					
2245267 - N	NCIX7002	0.9542					
2245268 - N	NCIX7002	0.9542					
2245269 - N	NCIX7002	0.9542					
2245270 - N	NCIX7002	0.9542	0.293	276	2.65	98	

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245271	2245271 - N	2245.085	2245.102			
2	2245272	2245272 - N	2245.085	2245.102			
3	2245273	2245273 - N	2245.085	2245.102			
4	2245274	2245274 - N	2245.085	2245.102			
5	2245275	2245275 - N	2245.085	2245.102			
6	2245276	2245276 - N	2245.085	2245.102			
7	2245277	2245277 - N	2245.091	2245.094			
8	2245278	2245278 - N	2245.091	2245.094			
9	2245279	2245279 - N	2245.091	2245.094			
10	2245280	2245280 - N	2245.091	2245.094			6.39×10^{-1}
11	2245281	2245281 - N	2245.091	2245.094			
12	2245282	2245282 - N	2245.091	2245.094			
13	2245283	2245283 - N	2245.083	2245.104			
14	2245284	2245284 - N	2245.083	2245.104			
15	2245285	2245285 - N	2245.083	2245.104	1.18	1.50	
16	2245286	2245286 - N	2245.083	2245.104			
17	2245287	2245287 - N	2245.083	2245.104			
18	2245288	2245288 - N	2245.083	2245.104			
19	2245289	2245289 - N	2245.101	2245.097			
20	2245290	2245290 - N	2245.101	2245.097			
21	2245291	2245291 - N	2245.101	2245.097			
22	2245292	2245292 - N	2245.101	2245.097			
23	2245293	2245293 - N	2245.101	2245.097			
24	2245294	2245294 - N	2245.101	2245.097			
25	2245295	2245295 - N	2245.095	2245.106			
26	2245296	2245296 - N	2245.095	2245.106			
27	2245297	2245297 - N	2245.095	2245.106			

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245271 - N	NCIX7002	0.9542					
2245272 - N	NCIX7002	0.9542					
2245273 - N	NCIX7002	0.9542					
2245274 - N	NCIX7002	0.9542					
2245275 - N	NCIX7002	0.9542					
2245276 - N	NCIX7002	0.9542					
2245277 - N	NCIX7002	0.9542					
2245278 - N	NCIX7002	0.9542					
2245279 - N	NCIX7002	0.9542					
2245280 - N	NCIX7002	0.9551					
2245281 - N	NCIX7002	0.9551					
2245282 - N	NCIX7002	0.9551					
2245283 - N	NCIX7002	0.9551					
2245284 - N	NCIX7002	0.9551					
2245285 - N	NCIX7002	0.9551	0.276	271	2.35	94	
2245286 - N	NCIX7002	0.9551					
2245287 - N	NCIX7002	0.9551					
2245288 - N	NCIX7002	0.9551					
2245289 - N	NCIX7002	0.9551					
2245290 - N	NCIX7002	0.9551					
2245291 - N	NCIX7002	0.9551					
2245292 - N	NCIX7002	0.9551					
2245293 - N	NCIX7002	0.9551					
2245294 - N	NCIX7002	0.9551					
2245295 - N	NCIX7002	0.9551					
2245296 - N	NCIX7002	0.9551					
2245297 - N	NCIX7002	0.9551					

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Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245298	2245298 - N	2245.095	2245.106			
2	2245299	2245299 - N	2245.095	2245.106			
3	2245300	2245300 - N	2245.095	2245.106	1.29	1.92	
4	2245301	2245301 - N	2245.103	2245.099			
5	2245302	2245302 - N	2245.103	2245.099			
6	2245303	2245303 - N	2245.103	2245.099			
7	2245304	2245304 - N	2245.103	2245.099			
8	2245305	2245305 - N	2245.103	2245.099			
9	2245306	2245306 - N	2245.103	2245.099			
10	2245307	2245307 - N	2245.096	2245.109			
11	2245308	2245308 - N	2245.096	2245.109			
12	2245309	2245309 - N	2245.096	2245.109			
13	2245310	2245310 - N	2245.096	2245.109			
14	2245311	2245311 - N	2245.096	2245.109			
15	2245312	2245312 - N	2245.096	2245.109			
16	2245313	2245313 - N	2245.107	2245.100			
17	2245314	2245314 - N	2245.107	2245.100			
18	2245315	2245315 - N	2245.107	2245.100	1.28	1.44	
19	2245316	2245316 - N	2245.107	2245.100			
20	2245317	2245317 - N	2245.107	2245.100			
21	2245318	2245318 - N	2245.107	2245.100			
22	2245319	2245319 - N	2245.098	2245.111			
23	2245320	2245320 - N	2245.098	2245.111			
24	2245321	2245321 - N	2245.098	2245.111			
25	2245322	2245322 - N	2245.098	2245.111			
26	2245323	2245323 - N	2245.098	2245.111			
27	2245324	2245324 - N	2245.098	2245.111			

* Transmissivity measured using water at 21 $\pm$ 2 °C (70 $\pm$ 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

APPROVED 5 QA

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SKAPS Industries

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Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245298 - N	NCIX7002	0.9551					
2245299 - N	NCIX7002	0.9551					
2245300 - N	NCIX7002	0.9551	0.287	278	2.68	96	
2245301 - N	NCIX7002	0.9551					
2245302 - N	NCIX7002	0.9551					
2245303 - N	NCIX7002	0.9551					
2245304 - N	NCIX7002	0.9551					
2245305 - N	NCIX7002	0.9551					
2245306 - N	NCIX7002	0.9551					
2245307 - N	NCIX7002	0.9551					
2245308 - N	NCIX7002	0.9551					
2245309 - N	NCIX7002	0.9551					
2245310 - N	NCIX7002	0.9551					
2245311 - N	NCIX7002	0.9551					
2245312 - N	NCIX7002	0.9551					
2245313 - N	NCIX7002	0.9551					
2245314 - N	NCIX7002	0.9551					
2245315 - N	NCIX7002	0.9544	0.280	269	2.49	92	
2245316 - N	NCIX7002	0.9544					
2245317 - N	NCIX7002	0.9544					
2245318 - N	NCIX7002	0.9544					
2245319 - N	NCIX7002	0.9544					
2245320 - N	NCIX7002	0.9544					
2245321 - N	NCIX7002	0.9544					
2245322 - N	NCIX7002	0.9544					
2245323 - N	NCIX7002	0.9544					
2245324 - N	NCIX7002	0.9544					

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Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	2245325	2245325 - N	2245.110	2245.105			
2	2245326	2245326 - N	2245.110	2245.105			
3	2245327	2245327 - N	2245.110	2245.105			
4	2245328	2245328 - N	2245.110	2245.105			
5	2245329	2245329 - N	2245.110	2245.105			
6	2245330	2245330 - N	2245.110	2245.105	1.21	1.78	
7	2245331	2245331 - N	2245.108	2245.121			
8	2245332	2245332 - N	2245.108	2245.121			
9	2245333	2245333 - N	2245.108	2245.121			
10	2245334	2245334 - N	2245.108	2245.121			
11	2245335	2245335 - N	2245.108	2245.121			
12	2245336	2245336 - N	2245.108	2245.121			
13	2245337	2245337 - N	2245.120	2245.113			
14	2245338	2245338 - N	2245.120	2245.113			
15	2245339	2245339 - N	2245.120	2245.113			
16	2245340	2245340 - N	2245.120	2245.113			
17	2245341	2245341 - N	2245.120	2245.113			
18	2245342	2245342 - N	2245.120	2245.113			
19	2245343	2245343 - N	2245.112	2245.125			
20	2245344	2245344 - N	2245.112	2245.125			
21	2245345	2245345 - N	2245.112	2245.125	1.32	1.62	
22	2245346	2245346 - N	2245.112	2245.125			
23	2245347	2245347 - N	2245.112	2245.125			
24	2245348	2245348 - N	2245.112	2245.125			
25	2245349	2245349 - N	2245.123	2245.116			
26	2245350	2245350 - N	2245.123	2245.116			6.15 x 10
27	2245351	2245351 - N	2245.123	2245.116			

* Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.25 and a confining pressure of 10000 psf between sand & 60 mil HDPE geomembrane after 24 hour.

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Charlotte Motor Speedway, NC**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
2245325 - N	NCIX7002	0.9544					
2245326 - N	NCIX7002	0.9544					
2245327 - N	NCIX7002	0.9544					
2245328 - N	NCIX7002	0.9544					
2245329 - N	NCIX7002	0.9544					
2245330 - N	NCIX7002	0.9544	0.289	274	2.58	97	
2245331 - N	NCIX7002	0.9544					
2245332 - N	NCIX7002	0.9544					
2245333 - N	NCIX7002	0.9544					
2245334 - N	NCIX7002	0.9544					
2245335 - N	NCIX7002	0.9544					
2245336 - N	NCIX7002	0.9544					
2245337 - N	NCIX7002	0.9544					
2245338 - N	NCIX7002	0.9544					
2245339 - N	NCIX7002	0.9544					
2245340 - N	NCIX7002	0.9544					
2245341 - N	NCIX7002	0.9544					
2245342 - N	NCIX7002	0.9544					
2245343 - N	NCIX7002	0.9544					
2245344 - N	NCIX7002	0.9544					
2245345 - N	NCIX7002	0.9544	0.272	267	2.32	93	
2245346 - N	NCIX7002	0.9544					
2245347 - N	NCIX7002	0.9544					
2245348 - N	NCIX7002	0.9544					
2245349 - N	NCIX7002	0.9544					
2245350 - N	NCIX7002	0.9556					
2245351 - N	NCIX7002	0.9556					

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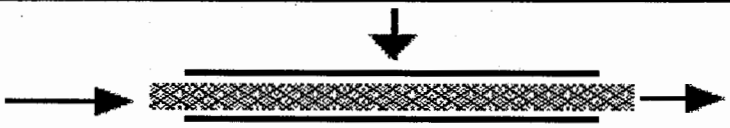
571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 Fax: 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

ASTM D 4716

Client:	Agru America, Inc.	**Job #**	2245
Project:	Charlotte Motor Speedway, NC		
Product:	TN270-2-8		

Test Configuration:



12 X 12 Test Surface

Test Information:

Boundary Conditions:	Sand Geocomposite 60 Mil HDPE Geomembrane	**Normal Load:** **Gradient:** **Seating Time:** **Flow Direction:**	10000 psf 0.25 ft 24 hours MD

Test Results:

Roll No.	Pressure (psf)	Gradient, ft	Transmissivity, m^2/sec
			24 hours
2245001	10000	0.25	6.31×10^{-4}
2245070			6.11×10^{-4}
2245140			6.24×10^{-4}
2245210			5.98×10^{-4}
2245280			6.39×10^{-4}
2245350			6.15×10^{-4}

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

POLYETHYLENE RESIN CERTIFICATION

Customer Name : Agru America, Inc.
Project Name : Charlotte Motor Speedway, NC
Geocomposite Manufacturer : SKAPS Industries
Geocomposite Production Plant : Commerce, GA
Geocomposite Brand Name : TN270-2-8

We, the Geonet Manufacturer, hereby certify the following for the material delivered to the above referenced project:

Resin Supplier	Resin Production Plant	Resin Brand Name	Resin Lot Number	Property	Test Method	Units	Resin Supplier Value	Tested Value*
Trademark Plastics Corporation	Chevron, TX	HDPE	UTCX54823	Density	ASTM D 1505	gm/cc	0.949	0.949
				Melt Flow Index	ASTM D 1238[(a)]	gm/10 min	0.085	0.1
			NCIX7002	Density	ASTM D 1505	gm/cc	0.949	0.949
				Melt Flow Index	ASTM D 1238[(a)]	gm/10 min	0.085	0.1

(a) Condition 190/2.16
* Data from SKAPS Quality Control

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Charlotte Motor Speedway, NC

We, the Geocomposite Manufacturer, hereby certify the following for the material delivered to the above referenced project :

GEOCOMP ROLL#	FABRIC ROLL#	WEIGHT oz/sq yd	MD TENSILE lbs.	MD ELONG %	XMD TENSILE lbs.	XMD ELONG %	MD TRAP lbs.	XMD TRAP lbs.	PUNCTURE lbs.	THICKNESS mil	MULLEN psi	AOS us sieve	WATER-FLOW gpm/sq f	PERM-ABL cm/sec	PERM-ITY sec^{-1}
2245001	2245.008	8.31	226	65	232	75	101	119	139	125	432	80	103	0.42	1.37
	2245.002	8.42	231	71	239	83	101	119	139	121	432	80	103	0.42	1.37
2245035	2245.007	8.31	226	65	232	75	101	119	139	125	432	80	103	0.42	1.37
	2245.021	8.56	234	74	240	81	103	108	136	120	430	80	103	0.42	1.37
2245070	2245.018	8.35	225	66	233	77	97	103	131	124	425	80	103	0.42	1.37
	2245.030	8.27	230	75	243	84	95	104	132	121	426	80	103	0.42	1.37
2245105	2245.029	8.15	227	71	235	75	103	108	136	123	430	80	103	0.42	1.37
	2245.037	8.23	226	67	237	79	95	104	132	125	426	80	103	0.42	1.37
2245140	2245.040	8.31	229	73	245	82	105	110	138	122	433	80	103	0.42	1.37
	2245.054	8.39	232	71	233	85	98	106	133	122	427	80	102	0.41	1.32
2245175	2245.053	8.39	232	71	233	85	98	106	133	122	427	80	102	0.41	1.32
	2245.068	8.31	229	72	236	80	104	115	137	123	435	80	102	0.41	1.32
2245210	2245.072	8.26	234	69	235	84	101	111	132	120	428	80	102	0.41	1.32
	2245.063	8.22	231	66	232	83	104	115	137	121	435	80	102	0.41	1.32
2245245	2245.086	8.42	233	75	234	76	103	118	139	125	433	80	103	0.41	1.32
	2245.079	8.38	231	74	242	75	101	111	132	124	428	80	103	0.41	1.32
2245280	2245.091	8.12	230	70	237	81	100	112	131	121	425	80	102	0.41	1.32
	2245.094	8.12	230	70	237	81	100	112	131	121	425	80	102	0.41	1.32
2245315	2245.107	8.48	225	71	234	84	105	116	140	125	431	80	102	0.42	1.36
	2245.100	8.15	229	66	238	82	105	116	140	122	431	80	102	0.42	1.36
2245350	2245.123	8.21	225	74	241	81	100	120	136	121	434	80	102	0.42	1.36
	2245.116	8.43	232	72	235	83	96	113	130	123	426	80	102	0.42	1.36

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

ACC of NORTH CAROLINA, LLC

SECTION H-4
Geotextile

Product : GT110-15

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd	MD TENSILE D4632 lbs. 250	MD ELONG D4632 % 50	CMD TENSILE D4632 lbs 250	CMD ELONG D4632 % 50	MD TRAP D4533 lbs. 100	CMD TRAP D4533 lbs 100	PUNCTURE D4833 lbs. 125	AOS D4751 US Sieve 100	PERMITTIVITY D4491 sec^{-1} 1.20
4148.01	10.37	253	61	289	66	113	131	167	100	1.27
4148.02	10.37	253	61	289	66	113	131	167	100	1.27
4148.03	10.37	253	61	289	66	113	131	167	100	1.27
4148.04	10.37	253	61	289	66	113	131	167	100	1.27
4148.05	9.86	258	57	277	63	113	131	167	100	1.27
4148.06	9.86	258	57	277	63	113	131	167	100	1.27
4148.07	9.86	258	57	277	63	113	131	167	100	1.27
4148.08	9.86	258	57	277	63	113	131	167	100	1.27
4148.09	9.86	258	57	277	63	113	131	167	100	1.27
4148.10	10.13	251	65	284	69	107	128	161	100	1.27
4148.11	10.13	251	65	284	69	107	128	161	100	1.27
4148.12	10.13	251	65	284	69	107	128	161	100	1.27
4148.13	10.13	251	65	284	69	107	128	161	100	1.27
4148.14	10.13	251	65	284	69	107	128	161	100	1.27
4148.15	9.81	255	55	281	61	107	128	161	100	1.27
4148.16	9.81	255	55	281	61	107	128	161	100	1.27
4148.17	9.81	255	55	281	61	107	128	161	100	1.27
4148.18	9.81	255	55	281	61	107	128	161	100	1.27

ACC of NORTH CAROLINA, LLC

APPENDIX I

Certificates of Acceptance of Soil Surface

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

GEOSYNTHETIC INSTALLER: Texas Environmental Plastics

REVIEWED BY: [signature]

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by panel P-1 through P-13

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Ronz	[signature]	S.	3.8.7

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schreiber	[signature]	TECH.	3-8-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-8-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

GEOSYNTHETIC INSTALLER: Texas Enviromental Plastics

REVIEWED BY: [signature]

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by Panels P 14 through P-30

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Rone Inlyrath	[signature]	S	3.9.7.

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schreiber	[signature]	TECH	3-9-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-9-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

GEOSYNTHETIC INSTALLER: Texas Enviromental Plastics

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

I, the Undersigned, the duly authorized representative of T. E. P.

do hereby accept the area of soil surface bound by Panels P-31 through P-42

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Rone Inlyrath	[signature]	S.	3.10.07

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schreiber	[signature]	TECH	3-10-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-10-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

GEOSYNTHETIC INSTALLER: Texas Enviromental Plastics

REVIEWED BY: [signature]

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by Panels P-43 through P-63

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Ronz Intyrath	[signature]	S.	3.12.07

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schreiber	[signature]	Tech.	3-12-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-12-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

GEOSYNTHETIC INSTALLER: Texas Environmental Plastics

REVIEWED BY: [signature]

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by Panels P-64 through P-77

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Rone Inabnith	R. Inabnith	S.	3.13.07

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schreiber	[signature]	TECH	3-13-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-13-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

GEOSYNTHETIC INSTALLER: T.E.P.

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by Panels P-78 through P-113

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
[signature]	Rone Intyrath	S	3.14.07

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
[signature]	[signature]	TECH.	3-14-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-14-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113 **GEOSYNTHETIC INSTALLER:** T.E.P.

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina **REVIEWED BY:**

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by panels P-114 through P-124

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Rowe Inlpath		S.	3.15.07

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schneider		Tech	3-15-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-15-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

GEOSYNTHETIC INSTALLER: Texas Environmental Plastics

REVIEWED BY: [signature]

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by panels P-125 through P-142

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Ross Initpath	[signature]	S.	3.20.07

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schreiber	[signature]	TECH.	3-20-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-20-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

GEOSYNTHETIC INSTALLER: T.E.P.

REVIEWED BY:

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by panels P-143 through P-167

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Rone Inlprath	R. Inlprath	S.	3.27.07

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schreiber		Tech.	3-22-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-28-07

ATLANTIC COAST CONSULTING, INC

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

PROJECT NUMBER: I001.113

GEOSYNTHETIC INSTALLER: T.E.P.

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

I, the Undersigned, the duly authorized representative of T.E.P.

do hereby accept the area of soil surface bound by panels P-168 through P-198

and shall be responsible for maintaining its integrity and suitablity in accordance with the project specifications from this date to the completion of the project.

NAME	SIGNATURE	TITLE	DATE
Rone Inlap RATH	R. [signature]	S.	3.23.07

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Tim Schreiber	[signature]	TECH	3-23-07

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REPRESENTATIVE

NAME	SIGNATURE	TITLE	DATE
Mike Gurley	Mike Gurley	EM	3-28-07

ATLANTIC COAST CONSULTING, INC

ACC of NORTH CAROLINA, LLC

APPENDIX J

Panel Deployment Log

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-8-07

DEPLOYMENT MONITOR(S): TS / WB

REVIEWED BY: [signature]

MATERIAL TYPE: 60 mil Text.

SHEET NUMBER: 1 of 1

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER*	DEPLOYED LENGTH *(L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
1	P-1	447232	407	Y	66	66	65	66	67	66	65	66	65	65													
2	P-2	7223	136	Y	66	67	66	66	65	65	66	67	66	66													
3	P-3	7223	273	Y	66	67	66	67	65	65	65	66	66	65													
4	P-4	7220	274	Y	65	66	65	65	66	66	66	65	66	67													
5	P-5	7220	135	Y	68	66	65	66	65	65	66	65	65	64													
6	P6	7224	408	Y	67	66	66	67	67	68	67	65	68	66													
7	P7	7343	408	Y	67	66	67	66	66	67	66	67	64	64													
8	P8	9222	136	Y	66	66	67	66	65	66	66	66	65	66													
9	P9	9222	266	Y	67	67	66	66	66	66	66	64	65	66													
10	P10	7238	280	Y	65	66	66	67	67	67	68	67	66	66													
11	P11	7238	120	Y	65	65	66	67	67	67	67	66	65	66													
12	P12	7340	404	Y	65	66	66	67	68	67	67	67	66	65													
13	P13	7222	29	Y	65	65	66	66	67	66	66	66	66	65													
14																											
15																											
16																											
17																											
18																											
19																											
20																											
21																											
22																											
23																											
24																											
25																											

ATLANTIC COAST CONSULTING, INC

3276 x 22.5
= 73,710 sq ft

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113 DATE OF DEPLOYMENT: 3-9-07

PROJECT TITLE: CMS Landfill V Cell 2F DEPLOYMENT MONITOR(S): WB

PROJECT LOCATION: Charlotte, North Carolina REVIEWED BY: ☆

MATERIAL TYPE: 60 mil Textured HDPE SHEET NUMBER: 1 of 1

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	P14	447222	374	Y	68	67	68	66	66	66	65	65	65	66													
2	P15	7221	187	Y	68	67	67	66	67	65	64	65	65	66													
3	P16	7221	215	Y	67	66	67	67	67	64	64	64	64	66													
4	P17	9223	354	Y	67	66	65	67	67	66	65	66	66	64													
5	P18	9223	44	Y	67	66	65	67	67	66	66	67	66	66													
6	P19	7234	403	Y	66	66	64	65	64	65	66	64	65	66													
7	P20	7235	117	Y	65	65	66	65	65	65	66	66	66	66													
8	P21	7235	282	Y	65	65	66	65	65	65	65	64	65	65													
9	P22	7347	287	Y	67	66	66	67	67	67	66	66	65	64													
10	P23	7347	111	Y	67	66	66	67	67	66	64	65	66	66													
11	P24	7237	407	Y	65	66	66	67	68	65	68	69	66	64													
12	P25	7342	58	Y	64	65	65	65	67	65	64	65	67	65													
13	P26	7342	345	Y	64	65	65	65	67	66	66	66	65	66													
14	P27	8332	240	Y	67	66	66	65	65	65	65	65	65	66													
15	P28	8332	160	Y	68	66	65	64	65	68	67	68	68	68													
16	P29	8328	400	Y	67	67	66	66	65	67	67	68	68	67													
17	P30	8330	30	Y	67	66	67	66	65	67	67	67	68	68													
18																											
19																											
20																											
21																											
22																											
23																											
24																											
25																											

ATLANTIC COAST CONSULTING, INC

4014 × 22.5 =

90,315

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-10-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY: [signature]

MATERIAL TYPE: 60 mil Textured HDPE

SHEET NUMBER: 1 of 1

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	P31	44 8330	367	Y	67	66	67	66	66	67	68	68	67	68													
2	P32	9112	150	Y	67	67	67	66	67	67	66	68	69	68													
3	P33	9112	241	Y	67	67	66	66	67	67	66	65	66	66													
4	P34	7346	284	Y	67	66	67	67	68	67	65	64	66	68													
5	P35	7346	118	Y	67	66	65	66	66	66	65	64	65	64													
6	P36	9114	395	Y	67	67	66	65	65	65	65	64	66	65													
7	P37	7350	405	Y	66	66	67	66	67	66	66	65	65	66													
8	P38	9219	104	Y	67	66	66	67	67	67	68	67	66	66													
9	P39	9219	297	Y	66	66	64	65	65	67	65	66	64	65													
10	P40	8331	205	Y	69	67	65	65	65	65	68	69	69	68													
11	P41	8331	198	Y	69	68	66	65	66	66	67	67	68	69													
12	P42	9113	300	Y	67	67	67	66	65	67	67	63	65	67													
13																											
14																											
15																											
16																											
17																											
18																											
19																											
20																											
21																											
22																											
23																											
24																											
25																											

ATLANTIC COAST CONSULTING, INC

3064 X 22.5

= 68,940 sq. ft.

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113 DATE OF DEPLOYMENT: 3-12-07

PROJECT TITLE: CMS Landfill V Cell 2F DEPLOYMENT MONITOR(S): WB

PROJECT LOCATION: Charlotte, North Carolina REVIEWED BY:

MATERIAL TYPE: 60 mil Textured HDPE SHEET NUMBER: 1 of 1

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	P43	44 9113	97	Y	67	67	67	67	68	66	65	66	64	65													
2	P44	8329	402	Y	66	66	67	67	66	66	68	68	68	68													
3	P45	7353	100	Y	66	67	65	65	64	64	64	64	65	64													
4	P46	7353	302	Y	66	67	65	65	64	64	64	65	65	63													
5	P47	9115	299	Y	68	67	66	65	65	67	66	64	65	65													
6	P48	9115	103	Y	68	66	66	66	64	68	65	65	65	65													
7	P49	9116	403	Y	66	66	65	66	64	66	66	64	65	63													
8	P50	9340	103	Y	66	65	65	66	64	66	64	66	65	64													
9	P51	9340	296	Y	65	66	65	65	64	65	64	66	65	66													
10	P52	6722	321	Y	66	66	65	65	66	64	65	65	64	65													
11	P53	6722	85	Y	65	65	66	65	67	65	64	64	64	64													
12	P54	6720	403	Y	64	65	64	65	65	64	65	63	65	65													
13	P55	6723	134	Y	64	64	63	64	63	64	64	64	65	65													
14	P56	6723	265	Y	64	65	64	64	64	64	65	65	63	65													
15	P57	9218	352	Y	66	66	65	65	64	66	65	64	65	66													
16	P58	9218	42	Y	66	66	64	65	64	66	65	64	64	65													
17	P59	9341	402	Y	65	65	65	64	64	65	65	67	66	66													
18	P60	9111	186	Y	64	65	65	64	65	64	64	64	64	64													
19	P61	9111	215	Y	68	68	67	65	64	67	66	65	65	66													
20	P62	7111	406	Y	63	65	65	65	66	63	66	66	66	65													
21	P63	9276	11		66	66	65	66	67	65	66	66	65	66													
22																											
23																											
24																											
25																											

ATLANTIC COAST CONSULTING, INC

4927 x 22.5
= 110,857 sq. ft.

64

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

MATERIAL TYPE: _____

DATE OF DEPLOYMENT: 3-13-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																	REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL					
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
1	P64	44 9226	381	Y	66	66	66	65	64	66	65	67	63	64											
2	P65	7109	254	Y	65	65	66	65	64	65	65	64	63	65											
3	P66	7109	144	Y	64	65	65	65	65	64	64	64	64	64											
4	P67	9339	406	Y	67	67	66	64	63	66	64	64	63	64											
5	P68	7106	94	Y	66	66	65	64	64	66	65	64	65	65											
6	P69	7106	312	Y	66	66	66	64	65	66	65	65	66	65											
7	P70	6724	337	Y	65	66	65	64	65	65	65	63	65	64											
8	P71	6724	69	Y	65	66	65	64	65	65	65	65	64	64											
9	P72	9332	406	Y	64	65	64	66	67	64	65	65	66	65											
10	P73	6719	24	Y	67	66	64	65	66	66	66	65	65	65											
11	P74	6719	379	Y	67	67	68	67	68	67	66	66	68	68											
12	P75	7104	221	Y	65	65	66	65	64	65	65	64	64	63											
13	P76	7104	182	Y	65	65	66	65	64	65	65	63	64	65											
14	P77	9224	110	Y	68	67	67	65	63	67	66	66	64	65											
15																									
16																									
17																									
18																									
19																									
20																									
21																									
22																									
23																									
24																									
25																									

ATLANTIC COAST CONSULTING, INC

3319 x 22.5 =

74,677 sq.ft.

78

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-14-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY:

MATERIAL TYPE: 60 mil Textured HDPE

SHEET NUMBER: 1 of 2

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	P78	44 9224	48	Y	64	64	66	65	66	64	64	65	63	64													
2	P79	9224	62	Y	63	64	64	67	68	63	64	64	65	64													
3	P80	9224	64	Y	65	66	65	66	65	65	65	65	64	63													
4	P81	9224	65	Y	66	66	66	65	66	66	66	65	65	65													
5	P82	9228	51	Y	65	66	64	63	63	65	66	64	64	64													
6	P83	9228	44	Y	65	64	64	66	65	65	65	66	64	64													
7	P84	9228	24	Y	66	65	64	65	65	65	66	66	65	65													
8	P85	9228	22	Y	64	64	65	66	65	64	66	65	66	64													
9	P86	9224	17	Y	63	64	66	65	65	65	65	66	65	64													
10	P87	9228	75	Y	64	65	65	66	65	64	65	65	64	63													
11	P88	9228	73	Y	65	65	64	64	65	64	64	64	65	63													
12	P89	9228	75	Y	66	67	66	66	65	65	65	65	64	64													
13	P90	7110	15	Y	64	64	65	65	67	66	65	66	66	66													
14	P91	7110	88	Y	63	64	64	64	64	63	64	65	65	64													
15	P92	7110	92	Y	65	66	65	66	66	64	63	64	64	63													
16	P93	7110	91	Y	64	64	66	65	65	64	64	65	65	64													
17	P94	7110	89	Y	64	63	64	63	64	65	65	65	66	66													
18	P95	6721	81	Y	63	63	63	64	64	63	65	66	66	67													
19	P96	6721	79	Y	63	64	64	65	64	64	66	67	66	66													
20	P97	6721	77	Y	64	64	65	66	65	64	65	66	67	66													
21	P98	6721	75	Y	66	65	66	66	67	65	65	65	66	65													
22	P99	6721	85	Y	65	66	66	65	66	65	66	65	65	65													
23	P100	6721	84	Y	65	65	64	65	67	66	66	67	65	65													
24	P101	7115	77	Y	65	65	65	64	65	64	65	65	64	64													
25	P102	7115	76	Y	66	66	65	66	65	66	66	67	65	65													

ATLANTIC COAST CONSULTING, INC

1629 x 22.5 =

36,652 sq ft

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-14-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY:

MATERIAL TYPE: 60 mil Textured HDPE

SHEET NUMBER: 2 of 2

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	P103	44 7115	75	Y	66	65	65	64	65	66	66	65	66	67													
2	P104	7115	75	Y	66	66	66	65	64	66	65	66	66	66													
3	P105	7115	83	Y	66	65	66	65	64	65	65	65	64	64													
4	P106	9221	66	Y	65	65	65	65	66	65	65	64	64	66													
5	P107	9221	75	Y	66	64	64	65	64	66	66	65	66	66													
6	P108	9221	75	Y	64	65	64	64	64	65	65	65	66	67													
7	P109	9221	80	Y	65	65	66	66	65	65	64	65	64	65													
8	P110	9221	79	Y	66	65	66	66	67	65	65	66	65	64													
9	P111	9335	86	Y	66	66	65	66	67	66	66	66	66	67													
10	P112	9335	88	Y	66	66	64	65	65	66	65	66	65	65													
11	P113	9335	78	Y	65	65	65	65	64	65	66	65	64	65													
12																											
13																											
14																											
15																											
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21																											
22																											
23																											
24																											
25																											

ATLANTIC COAST CONSULTING, INC

860 x 22.5 = 19,350 sq ft

+ 36,652 sq ft (sheet 1) = 56,002 sq ft

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-15-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY: [signature]

MATERIAL TYPE: 60 mil Textured HDPE

SHEET NUMBER: 1 of 1

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	P114	44 9375	130	Y	66	66	67	66	67	66	66	67	66	67													
2	P115	7105	366	Y	65	66	66	67	68	65	65	63	68	64													
3	P116	7105	35	Y	65	66	66	67	68	65	64	64	64	64													
4	P117	9337	403	Y	68	67	67	66	65	67	66	65	66	65													
5	P118	9227	48	Y	67	67	66	67	66	67	67	65	64	63													
6	P119	9227	354	Y	65	65	65	66	64	65	66	66	66	65													
7	P120	9231	126	Y	68	67	67	65	63	67	65	65	66	65													
8	P121	9231	270	Y	68	68	67	66	65	67	67	67	66	66													
9	P122	7F161	197	Y	66	66	67	65	64	67	66	67	65	64													
10	P123	7116	206	Y	65	65	66	65	64	65	64	65	65	65													
11	P124	9336	268	Y	65	66	66	67	66	64	64	65	66	64													
12																											
13																											
14																											
15																											
16																											
17																											
18																											
19																											
20																											
21																											
22																											
23																											
24																											
25																											

ATLANTIC COAST CONSULTING, INC

2403 x 22.5
= 54,067 sq. ft.

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-20-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY: [signature]

MATERIAL TYPE: 60 mil, textured HDPE

SHEET NUMBER: 1 of 1

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	P125	449336	131	Y	67	67	66	66	65	67	64	65	67	67													
2	P126	7108	333	Y	65	66	66	65	64	65	64	64	64	65													
3	P127	7108	64	Y	65	66	66	65	64	65	64	65	65	65													
4	P128	7113	384	Y	65	64	65	65	65	65	65	65	65	65													
5	P129	9333	405	Y	67	67	66	66	64	67	64	66	66	65													
6	P130	7107	50	Y	65	65	64	65	64	65	64	65	66	65													
7	P131	7107	342	Y	65	64	64	65	64	65	65	65	63	64													
8	P132	9229	107	Y	68	67	67	65	64	67	66	66	66	67													
9	P133	9229	297	Y	68	67	67	65	64	67	65	67	65	66													
10	P134	7114	150	Y	67	67	66	65	65	67	65	64	65	65													
11	P135	7114	250	Y	67	67	66	65	65	67	65	66	64	65													
12	P136	7101	193	Y	66	66	67	67	67	66	66	65	65	65													
13	P137	7101	208	Y	66	66	67	67	67	66	63	65	65	63													
14	P138	7117	227	Y	67	67	67	66	65	67	65	65	66	65													
15	P139	7117	174	Y	65	65	66	66	65	65	66	65	65	65													
16	P140	7112	258	Y	65	65	65	66	65	65	64	66	66	67													
17	P141	7112	142	Y	65	65	65	66	65	65	66	65	66	66													
18	P142	7231	282	Y	66	66	65	66	66	65	64	64	65	65													
19																											
20																											
21																											
22																											
23																											
24																											
25																											

3997 x 22.5 =

89,932 sq.ft.

ATLANTIC COAST CONSULTING, INC

143 7231?

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-22-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY: [illegible]

MATERIAL TYPE: 60 mil Textured HDPE

SHEET NUMBER: 1 of 2

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	P143	44 7231	114	Y	67	67	67	66	64	67	66	64	65	66													
2	P144	9338	312	Y	66	67	66	65	66	66	64	66	65	66													
3	P145	9338	94	Y	66	67	66	65	64	66	65	66	66	65													
4	P146	7219	334	Y	66	67	67	66	67	66	65	63	64	64													
5	P147	7219	73	Y	66	67	67	66	67	66	65	65	65	65													
6	P148	9334	369	Y	65	65	63	65	65	65	64	63	65	64													
7	P149	9334	39	Y	65	65	63	65	65	65	65	64	65	65													
8	P150	8327	68	Y	66	66	66	66	67	66	67	68	66	65													
9	P151	8327	87	Y	66	66	66	66	67	66	67	68	67	66													
10	P152	8327	236	Y	66	66	66	67	68	66	67	68	68	67													
11	P153	7230	90	Y	63	63	64	64	64	63	64	64	64	65													
12	P154	7230	314	Y	65	65	66	66	65	65	64	64	65	66													
13	P155	9110	47	Y	67	66	67	67	66	67	67	66	66	65													
14	P151A	8327	4	Y	66	66	66	66	67	67	66	67	68	66													
15	P156	9110	122	Y	67	66	67	67	66	67	66	66	67	66													
16	P157	9110	111	Y	67	66	67	67	66	66	67	67	67	66													
17	P158	9110	124	Y	67	67	67	66	67	67	67	67	66	66													
18	P159	9230	259	Y	64	65	65	64	65	64	66	65	64	66													
19	P160	9230	65	Y	65	65	64	65	66	65	66	66	65	64													
20	P161	9230	60	Y	65	64	65	64	64	65	65	65	65	65													
21	P162	9334	29	Y	65	65	63	65	65	65	64	65	65	64													
22	P163	9225	365	Y	65	64	65	65	65	65	65	65	64	65													
23	P164	7352	41	Y	64	65	66	65	67	64	65	65	65	64													
24	P165	7352	63	Y	65	65	66	66	67	65	64	65	64	65													
25	P166	7352	294	Y	67	67	66	65	64	67	64	64	64	65													

3714

~~3814~~

3[illegible]

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-22-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY: [signature]

MATERIAL TYPE: 60 mil Textured HDPE

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																					REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL					
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
1	P167	447351	78	Y	65	65	64	64	65	65	64	64	65	66												
2																										
3																										
4																										
5																										
6																										
7																										
8																										
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10																										
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19																										
20																										
21																										
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23																										
24																										
25																										

Total, pages 1 & 2

3792 x 22.5
= 85,320

168

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-23-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY: [signature]

MATERIAL TYPE: 60 Mil Textured HDPE

SHEET NUMBER: 1 of 2

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS (mils) LEAD 1	LEAD 2	LEAD 3	LEAD 4	LEAD 5	LEFT SIDE 1	LEFT SIDE 2	LEFT SIDE 3	LEFT SIDE 4	LEFT SIDE 5	RIGHT SIDE 1	RIGHT SIDE 2	RIGHT SIDE 3	RIGHT SIDE 4	RIGHT SIDE 5	TRAIL 1	TRAIL 2	TRAIL 3	TRAIL 4	TRAIL 5	REMARKS
1	P168	447351	325	Y	65	65	65	64	65	65	64	65	64	64											
2	P169	7226	32	Y	65	64	64	63	63	65	64	65	64	64											
3	P170	7226	337	Y	66	64	64	65	66	66	65	64	65	64											
4	P171	7102	69	Y	67	66	67	66	66	67	65	64	64	65											
5	P172	7102	32	Y	67	66	67	66	66	67	65	64	64	65											
6	P173	7102	62	Y	67	66	67	66	65	67	66	65	64	65											
7	P174	7102	77	Y	68	66	66	66	65	68	65	65	65	64											
8	P175	7102	68	Y	65	65	65	64	67	65	66	66	65	66											
9	P176	7102	68	Y	65	65	65	63	64	65	65	66	66	65											
10	P177	7102	59	Y	65	65	64	65	65	65	65	65	65	66											
11	P178	7225	290	Y	67	66	66	65	64	66	64	64	65	66											
12	P179	7225	107	Y	68	67	67	66	65	68	67	64	64	65											
13	P180	7226	35	Y	65	65	66	66	64	65	65	64	65	65											
14	P181	7103	127	Y	67	67	67	66	65	64	64	65	64	65											
15	P182	7103	247	Y	67	67	67	66	65	66	66	65	65	65											
16	P183	7348	67	Y	67	67	66	67	67	65	65	64	64	64											
17	P184	7348	67	Y	67	67	66	67	67	65	65	64	64	64											
18	P185	7348	70	Y	67	67	66	67	67	65	65	64	64	64											
19	P186	7348	73	Y	67	67	66	67	67	65	65	64	64	64											
20	P187	7348	73	Y	67	67	66	67	67	65	65	64	64	64											
21	P188	7348	54	Y	67	67	66	67	67	65	65	64	64	64											
22	P189	7349	21	Y	65	65	66	66	65	65	65	64	64	64											
23	P190	7349	79	Y	65	65	66	66	65	65	65	64	64	64											
24	P191	7349	95	Y	65	65	66	66	65	65	65	64	64	64											
25	P192	7349	111	Y	65	65	66	66	65	65	65	64	64	64											

2645

GEOMEMBRANE PANEL DEPLOYMENT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF DEPLOYMENT: 3-23-07

DEPLOYMENT MONITOR(S): WB

REVIEWED BY: [illegible]

MATERIAL TYPE: 60 mil Textured HDPE

SHEET NUMBER: 2 of 2

LINE NUMBER	PANEL NUMBER	MATERIAL ROLL NUMBER	DEPLOYED LENGTH (L.F.)	OBSERVED PANEL OVERLAP	PANEL THICKNESS MEASUREMENTS																						REMARKS
					LEAD					LEFT SIDE					RIGHT SIDE					TRAIL							
					1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
1	P193	7349	40	Y	65	65	66	66	65	64	64	65	64	63													
2	P194	7349	68	Y	65	65	66	66	65	65	65	64	64	63													
3	P195	7236	75	Y	64	64	65	65	66	64	64	65	64	63													
4	P196	7236	65	Y	64	64	65	65	66	64	64	65	64	63													
5	P197	7236	52	Y	64	64	65	65	66	64	64	65	64	63													
6	P198	7236	23	Y	64	64	65	65	66	64	64	65	64	63													
7																											
8																											
9																											
10																											
11																											
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14																											
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21																											
22																											
23																											
24																											
25																											

ATLANTIC COAST CONSULTING, INC

323
+ 2645
2968 X 22.5 = 66780 sq Ft

ACC of NORTH CAROLINA, LLC

APPENDIX K
Trial Seam Logs

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-8-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	INSIDE PEEL STRENGTH/MODE 2	INSIDE PEEL STRENGTH/MODE 3	OUTSIDE PEEL STRENGTH/MODE 1	OUTSIDE PEEL STRENGTH/MODE 2	OUTSIDE PEEL STRENGTH/MODE 3	SHEAR STRENGTH/MODE 1	SHEAR STRENGTH/MODE 2	SHEAR STRENGTH/MODE 3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TF 1	1038	#1	LM	52°	5	735	135	152	135	136	161	130	187	192	192	P	TS	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF 2	1045	#3	RH	52°	5	735	153	132	138	139	138	137	198	189	189	P	TS	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF 3	1050	#4	JG	52°	4	735	178	152	126	146	169	171	171	181	175	P	TS	Text to Text
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX 1	1115	G1	KC	53°	/	300	175	148	164				178	180	179	P	TS	
							SE1	SE1	SE1	/			BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

126 Shots
82 Reel

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-9-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: ~~DB~~

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX TIME	WELDING MACHINE NUMBER	WELDING TECH	AMBIENT AIR TEMP	MACHINE SPEED	TEMP SETTING	INSIDE PEEL STRENGTH/MODE 1	2	3	OUTSIDE PEEL STRENGTH/MODE 1	2	3	SHEAR STRENGTH/MODE 1	2	3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TF1	0900	#4	JG	50	400	735	135	156	151	143	141	155	194	188	190	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF2	0905	#1	AG	50	500	735	159	141	146	127	134	143	226	229	224	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF3	0915	#3	RH	50	500	735	132	152	140	157	151	161	225	208	214	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX1	0925	#1	KC	50		300	154	106	141				200	188	186	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			
TX2	1305	#1	KC	55		300	121	B 132	121				140	144	134	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			
TF4	1310	#1	AG	55	500	735	113	129	118	112	122	106	169	175	178	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF5	1320	#3	RH	55	500	735	111	118	145	112	117	133	203	190	193	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF6	1330	#4	JG	55	400	735	123	125	126	121	126	133	150	157	146	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-10-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX TIME	WELDING MACHINE NUMBER	WELDING TECH	AMBIENT AIR TEMP	MACHINE SPEED	TEMP SETTING	INSIDE PEEL STRENGTH/MODE 1	INSIDE PEEL STRENGTH/MODE 2	INSIDE PEEL STRENGTH/MODE 3	OUTSIDE PEEL STRENGTH/MODE 1	OUTSIDE PEEL STRENGTH/MODE 2	OUTSIDE PEEL STRENGTH/MODE 3	SHEAR STRENGTH/MODE 1	SHEAR STRENGTH/MODE 2	SHEAR STRENGTH/MODE 3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX1	0810	#1	KC	35		300	102	131	138				180	164	183	P	WB	
							SE1	SE1	SE1				Brk	Brk	Brk			
TF1	0825	#4	JG	35	400	735	113	117	125	153	154	148	183	190	191	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF2	0855	#1	AG	38	500	735	134	125	134	105	126	133	207	202	213	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF3	0905	#3	RH	38	500	735	126	124	128	146	135	135	194	184	194	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF4	1255	#3	RH	60	500	735	116	115	117	126	122	123	164	163	154	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF5	1305	#1	AG	60	600	735	123	120	123	125	134	136	165	162	163	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF6	1315	#4	JG	60	400	735	112	120	123	129	141	148	169	166	157	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX2	1320	#1	KC	60		300	139	142	131				141	144	133	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-12-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [illegible]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH.	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	2	3	OUTSIDE PEEL STRENGTH/MODE 1	2	3	SHEAR STRENGTH/MODE 1	2	3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX1	0800	#1	KC	45		300	166	164	169				195	195	194	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			
TF1	0835	#4	JG	45	550	735	104	118	117	138	133	136	233	231	234	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF2	0850	#1	AG	50	600	735	130	139	138	139	135	141	238	240	235	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF3	0900	#3	RH	50	600	735	158	143	150	137	144	156	223	220	245	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF4	1250	#4	JG	60	600	735	110	127	111	138	107	148	184	188	182	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF5	1300	#1	AG	60	600	735	113	107	115	122	116	105	179	186	184	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF6	1315	#3	RH	60	450	735	117	133	124	134	136	132	178	186	186	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF7	1320	#3	RH	60	600	735	131	132	134	124	133	130	174	184	181	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX2	1325	#1	KC	60		300	128	139	139				201	188	199	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			
TF8	1400	#2	AG	60	600	735	112	117	114	127	114	128	188	186	182	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-13-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: ~~G~~

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	INSIDE PEEL STRENGTH/MODE 2	INSIDE PEEL STRENGTH/MODE 3	OUTSIDE PEEL STRENGTH/MODE 1	OUTSIDE PEEL STRENGTH/MODE 2	OUTSIDE PEEL STRENGTH/MODE 3	SHEAR STRENGTH/MODE 1	SHEAR STRENGTH/MODE 2	SHEAR STRENGTH/MODE 3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TF1	0805	#4	JG	40	500	735	138	154	123	169	125	167	233	234	229	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF2	0815	#2	AG	40	500	735	135	139	138	107	138	127	241	235	232	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX1	0825	#1	KC	40	/	300	183	186	181			/	186	183	188	P	WB	
							SE1	SE1	SE1		/		BRK	BRK	BRK			
TF3	0850	#3	RH	40	600	735	125	122	146	140	140	156	237	242	228	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF4	1255	#4	JG	65	600	735	90	106	119	118	117	108	147	147	148	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX2	1300	#1	KC	65	/	300	116	123	126			/	130	138	135	P	WB	
							SE1	SE1	SE1		/		BRK	BRK	BRK			
TF5	1315	#3	RH	65	600	735	117	128	119	121	139	116	152	149	141	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF6	1330	#2	AG	65	600	735	124	123	122	128	116	121	157	149	159	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: 1001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-14-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH.	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	2	3	OUTSIDE PEEL STRENGTH/MODE 1	2	3	SHEAR STRENGTH/MODE 1	2	3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX1	0750	#1	KC	55		300	146	154	173				184	195	191	P	WB	
							SEI	SEI	SEI				BRK	BRK	BRK			
TF1	1015	#4	JG	60	500	735	136	143	160	145	158	152	175	177	180	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF2	1030	#3	RH	60	500	735	147	124	135	123	126	131	178	182	181	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF3	1040	#2	AG	60	550	735	124	133	130	122	124	126	170	186	182	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF4	1045	#1	PM	60	550	735	115	134	136	100	135	136	178	180	179	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF5	1255	#4	JG	65	600	735	106	113	107	130	129	122	158	163	162	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF6	1300	#1	PM	65	550	735	111	130	118	119	115	115	155	155	156	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF7	1305	#2	AG	65	600	735	115	120	119	133	130	107	160	162	164	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF8	1310	#3	RH	65	600	735	122	120	130	131	136	119	149	164	160	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TX2	1330	#1	KC	65		300	131	144	136				164	169	162	P	WB	
							SEI	SEI	SEI				BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-15-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [illegible]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH.	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	2	3	OUTSIDE PEEL STRENGTH/MODE 1	2	3	SHEAR STRENGTH/MODE 1	2	3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX1	0800	#1	KC	58		300	160	166	166				188	180	184	P	WB	
							SEI	SEI	SEI				BRK	BRK	BRK			
TF1	0805	#4	JG	58	550	735	107	134	103	146	117	136	201	202	206	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF2	0825	#2	AG	58	500	735	128	138	148	128	126	135	201	204	201	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF3	0830	#3	RH	58	500	735	136	150	137	144	140	141	232	228	210	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF4	1325	#2	AG	65	600	735	120	120	113	119	111	113	164	160	162	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF5	1330	#3	RH	65	500	735	109	132	132	119	133	126	156	154	161	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TF6	1335	#4	JG	65	500	735	120	114	116	125	130	121	170	171	160	P	WB	
							SEI	SEI	SEI	SEI	SEI	SEI	BRK	BRK	BRK			
TX2	1415	#1	KC	70		300	131	136	139				140	132	134	P	WB	
							SEI	SEI	SEI				BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-17-07

TF - # = FUSION SEAM:

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX TIME	WELDING MACHINE NUMBER	WELDING TECH	AMBIENT AIR TEMP	MACHINE SPEED	TEMP SETTING	INSIDE PEEL STRENGTH/MODE 1	2	3	OUTSIDE PEEL STRENGTH/MODE 1	2	3	SHEAR STRENGTH/MODE 1	2	3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX-1	1400	G#1	KC	50°		300	124	128	130				148	151	146	P	[initials]	
							SE1	SE1	SE1				BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-19-07

TF - # = FUSION SEAM:

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [illegible]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH.	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	INSIDE PEEL STRENGTH/MODE 2	INSIDE PEEL STRENGTH/MODE 3	OUTSIDE PEEL STRENGTH/MODE 1	OUTSIDE PEEL STRENGTH/MODE 2	OUTSIDE PEEL STRENGTH/MODE 3	SHEAR STRENGTH/MODE 1	SHEAR STRENGTH/MODE 2	SHEAR STRENGTH/MODE 3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX 1	1330	G#1	KC	58		300	110	120	115				161	165	152	P	TS	
							SE	SE	SE				BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-20-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [illegible]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH.	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	INSIDE PEEL STRENGTH/MODE 2	INSIDE PEEL STRENGTH/MODE 3	OUTSIDE PEEL STRENGTH/MODE 1	OUTSIDE PEEL STRENGTH/MODE 2	OUTSIDE PEEL STRENGTH/MODE 3	SHEAR STRENGTH/MODE 1	SHEAR STRENGTH/MODE 2	SHEAR STRENGTH/MODE 3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TF1	0900	#4	JG	51	500	735	152	170	120	125	140	160	181	177	190	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX1	0905	#1	KC	51	/	300	158	159	165			/	173	182	186	P	WB	
							SE1	SE1	SE1	/			BRK	BRK	BRK			
TF2	0915	#2	AG	51	500	735	127	151	163	141	147	157	193	197	196	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF3	0925	#3	RH	51	500	735	144	135	140	125	120	138	215	204	207	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF4	1310	#4	JG	65	600	735	113	115	119	118	121	124	135	132	136	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX2	1320	#1	KC	65	/	300	119	118	123			/	126	129	131	P	WB	
							SE1	SE1	SE1	/			BRK	BRK	BRK			
TF5	1330	#2	AG	65	650	735	116	114	121	121	134	128	151	156	160	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF6	1340	#3	RH	65	650	735	120	121	121	119	130	124	151	147	153	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF7	1505	#1	PM	70	650	735	119	130	109	132	115	112	149	151	158	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-21-07

TF - # = FUSION SEAM:

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: BF

SHEET NUMBER: 1 of

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH	AMBIENT AIR TEMP	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	2	3	OUTSIDE PEEL STRENGTH/MODE 1	2	3	SHEAR STRENGTH/MODE 1	2	3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX1	0740	#1	KC	60		300	129	125	148				164	167	173	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-22-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	INSIDE PEEL STRENGTH/MODE 2	INSIDE PEEL STRENGTH/MODE 3	OUTSIDE PEEL STRENGTH/MODE 1	OUTSIDE PEEL STRENGTH/MODE 2	OUTSIDE PEEL STRENGTH/MODE 3	SHEAR STRENGTH/MODE 1	SHEAR STRENGTH/MODE 2	SHEAR STRENGTH/MODE 3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX1	0830	#1	KC	55		300	113	128	138				165	162	168	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			
TF1	0835	#4	JG	55	600	735	122	121	145	126	122	128	199	198	200	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF2	0840	#2	AG	55	600	735	146	159	145	137	140	142	179	194	201	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF3	0850	#3	RH	55	500	735	148	147	156	145	145	146	213	212	210	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX2	1300	#1	KC	65		300	135	126	146				152	159	158	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			
TF4	1305	#4	JG	65	600	735	125	128	122	124	119	109	156	163	163	P	WB	
							SE1	SE1	SE	SE1	SE1	SE1	BRK	BRK	BRK			
TF5	1310	#2	AG	65	600	735	120	116	116	110	136	124	162	157	155	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF6	1315	#3	RH	65	600	735	130	112	119	115	120	116	159	165	159	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-23-07

TF - # = FUSION SEAM: ✓

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH.	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	2	3	OUTSIDE PEEL STRENGTH/MODE 1	2	3	SHEAR STRENGTH/MODE 1	2	3	PASS OR FAIL	QOA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX1	0755	#1	KC	55		300	128	146	153				199	201	201	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			
TF1	0810	#4	JG	55	600	735	122	125	120	125	124	116	226	227	228	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF2	0835	#3	RH	55	600	735	120	126	151	135	135	142	208	206	201	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF3	0840	#2	AG	55	600	735	122	129	118	109	114	142	199	190	192	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF4	1255	#2	AG	70	650	735	119	112	120	116	123	124	156	153	153	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF5	1300	#3	RH	70	650	735	131	114	131	124	134	116	146	148	153	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TF6	1315	#4	JG	70	600	735	101	98	124	123	120	103	166	164	168	P	WB	
							SE1	SE1	SE1	SE1	SE1	SE1	BRK	BRK	BRK			
TX2	1320	#1	KC	70		300	125	108	114				151	150	140	P	WB	
							SE1	SE1	SE1				BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF TRIAL SEAM: 3-24-07

TF - # = FUSION SEAM:

TX - # = EXTRUSION SEAM: ✓

REVIEWED BY:

SHEET NUMBER: 1 of 1

SAMPLE NUMBER	APPROX. TIME	WELDING MACHINE NUMBER	WELDING TECH.	AMBIENT AIR TEMP.	MACHINE SPEED	TEMP. SETTING	INSIDE PEEL STRENGTH/MODE 1	INSIDE PEEL STRENGTH/MODE 2	INSIDE PEEL STRENGTH/MODE 3	OUTSIDE PEEL STRENGTH/MODE 1	OUTSIDE PEEL STRENGTH/MODE 2	OUTSIDE PEEL STRENGTH/MODE 3	SHEAR STRENGTH/MODE 1	SHEAR STRENGTH/MODE 2	SHEAR STRENGTH/MODE 3	PASS OR FAIL	CQA MONITOR'S INITIALS	REMARKS OR COMMENTS
TX1	0805	#1	KC	60	/	300	118	138	145		/		167	162	166	P	WB	
							SE1	SE1	SE1	/			BRK	BRK	BRK			

ATLANTIC COAST CONSULTING, INC

ACC of NORTH CAROLINA, LLC

APPENDIX L
Seam Logs

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-8-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #3

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 0

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX.	WELDING	MACHINE	MACHINE	APPROX.	LENGTH FROM	DESTRUCTIVE	CQA MONITOR	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT	START TIME	TECH	SPEED	TEMP	LENGTH WELDED	PREVIOUS DESTRUCTIVE	NUMBER	INITIALS		TEST DATE	CQA MONITOR
1	P 1	P 3	SEOS	NEOS	1235	RH	5	735	131	131 / 0	DS-2	TS		3-8	WB
2	P 1	P 4	SEOS	NEOS	1307	"	"	"	266	266		TS		3-8	WB
3	P 4	P 6	SEOS	NEOS	1415	"	"	"	134	400		TS		3-8	WB
4	P 6	P 7	I I	NEOS	1506	"	"	"	161	490 / 71	DS-4	TS		3-8	WB
5	P 5	P 8	SEOS	NEOS	1545	"	"	"	131	202		TS		3-8	WB
6	P 7	P 9	SEOS	NEOS	1622	"	"	"	132	334		TS		3-8	WB
7	P 8	P 9	SEOS	NEOS	1650	"	"	"	132	466		TS		3-8	WB
8	P 11	P 12	WEOS	EEOS	1737	"	"	"	22	488		TS		3-8	WB
9	P 9	P 12	SEOS	NEOS	1746	"	"	"	147	490/145	DS-7	TS		3-8	WB
10	P 9	P 11	SEOS	NEOS	1820	"	"	"	118	263		TS		3-9	WB
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1374

DESTRUCTIVE LENGTH CARRY - OVER: 263

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-8-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #1

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: Ø

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER: FIRST PANEL	SEAM NUMBER: SECOND PANEL	SEAM SECTION: START POINT	SEAM SECTION: FINISH POINT	APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE: TEST DATE	NON-DESTRUCTIVE: CQA MONITOR
1	P 3	P 4	WEOS	EEOS	1104	LM	5	735	22	22		TS		3-8	WB
2	P 1	P 2	WEOS	EEOS	1120	"	"	"	22	44		TS		3-8	WB
3	P 2	P 3	NEOS	SEOS	1234	"	"	"	130	104/70	DS 1	TS		3-8	WB
4	P 5	P 6	WEOS	EEOS	1350	"	"	"	22	92		TS		3-8	WB
5	P 4	P 5	SEOS	NEOS	1358	"	"	"	130	222		TS		3-8	WB
6	P 3	P 6	NEOS	SEOS	1424	"	"	"	263	485/0	DS-3	TS		3-8	WB
7	P 6	P 7	II	SEOS	1515	"	"	"	242	242		TS		3-8	WB
8	P 9	P 10	EEOS	WEOS	1618	"	"	"	22	264		TS		3-8	WB
9	P 7	P 10	NEOS	SEOS	1622	"	"	"	271	490/45	DS-6	TS		3-8	WB
10	P 10	P 12	NEOS	SEOS	1716	"	"	"	254	299		TS		3-8	WB
11	P 10	P 13	NEOS	SEOS	1803	"	"	"	28	327		TS		3-8	WB
12	P 12	P 13	EEOS	WEOS	1810	"	"	"	22	349		TS		3-8	WB
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1428

DESTRUCTIVE LENGTH CARRY - OVER: 349

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-8-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #4

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 0

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P4	Tie In	EEOS	WEOS	11 44	JG	4	735	22	0 22		TS		3-8	WB
2	P1	Tie In	EEOS	WEOS	11 48	"	"	"	22	0 44		TS		3-8	WB
3	P5	Tie In	EEOS	WEOS	13 44	"	"	"	22	66		TS		3-8	WB
4	P7	P8	WEOS	EEOS	16 55	"	"	"	22	88		TS		3-8	WB
5	P8	Tie In	EEOS	WEOS	15 50	"	"	"	22	110'/0	DS-5	TS		3-8	WB
6	P9	Tie In	EEOS	WEOS	16 15	"	"	"	22	22		TS		3-8	WB
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 132

DESTRUCTIVE LENGTH CARRY - OVER: 22

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-7-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #1

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 349

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P 12	P 14	2 A	SEOS	0920	LM	5	735	152	497/5	DS-8	TS		3-9	WB
2	P 12	P 15	NEOS	SEOS	0947	"	"	"	152	157		TS		3-9	WB
3	P 13	P 15	NEOS	SEOS	1016	"	"	"	29	186		TS		3-9	WB
4	P 14	P 15	EEOS	WEOS	1020	"	"	"	22	208		TS		3-9	WB
5	P 14	P 17	NEOS	SEOS	1035	"	"	"	159	367		TS		3-9	WB
6	P 15	P 17	NEOS	SEOS	1100	"	"	"	186	490/63	DS-10	TS		3-9	WB
7	P 17	P 19	NEOS	SEOS	1323	"	"	"	235	298		TS		3-9	WB
8	P 19	P 20	NEOS	SEOS	1413	"	"	"	22	320		TS		3-9	WB
9	P 17	P 20	NEOS	SEOS	1418	"	"	"	116	436		TS		3-9	WB
10	P 21	P 22	NEOS	EEOS	1444	"	"	"	22	458		TS		3-9	WB
11	P 22	P 24	NEOS	SEOS	1449	"	"	"	233	490/200	DS-12	TS		3-9	WB
12	P 24	P 25	EEOS	WEOS	1530	"	"	"	22	222		TS		3-9	WB
13	P 22	P 25	NEOS	SEOS	1536	"	"	"	56	278		TS		3-9	WB
14	P 21	P 24	NEOS	SEOS	1550	"	"	"	170	448		TS		3-9	WB
15	P 24	P 26	NEOS	SEOS	1642	"	"	"	184	490/142	DS-13	TS		3-9	WB
16	P 24	P 28	NEOS	SEOS	1720	"	"	"	177	319		TS		3-9	WB
17	P 25	P 27	NEOS	SEOS	1755	"	"	"	60	379		TS		3-9	WB
18	P 29	P 30	EEOS	WEOS	1808	"	"	"	22	401		TS		3-9	WB
19	P 27	P 30	NEOS	SEOS	1810	"	"	"	28	429		TS		3-9	WB
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 2047

DESTRUCTIVE LENGTH CARRY - OVER: 429

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-9-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: # 4

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 22'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 16	Tie In	EEOS	WEOS	9 51	JG	4.0	735	22	44		TS		3-9	WB
2	P 14	Tie In	EEOS	WEOS	10 00	"	"	"	22	66		TS		3-9	WB
3	P 11	Tie In	EEOS	WEOS	10 09	"	"	"	22	88		TS		3-9	WB
4	P 21	Tie In	EEOS	WEOS	14 00	"	"	"	22	110		TS		3-9	WB
5	P 18	Tie In	EEOS	WEOS	14 10	"	"	"	22	132		TS		3-9	WB
						"	"	"							
7	P 18	P 21	SEOS	NEOS	15 16	"	"	"	41	195		TS		3-9	WB
8	P 23	Tie In	EEOS	WEOS	15 20	"	"	"	22	217		TS		3-9	W-B
9	P 23	P 24	EEOS	WEOS	15 30	"	"	"	22	239		TS		3-9	WB
10	P 21	P 23	SEOS	NEOS	15 37	"	"	"	110	349		TS		3-9	WB
11	P 19	P 21	2W	NEOS	16 00	"	"	"	113	462		TS		3-9	WB
12	P 26	Tie In	EEOS	WEOS	16 20	"	"	"	22	484		TS		3-9	WB
13	P 23	P 26	SEOS	NEOS	16 55	"	"	"	109	486/108	DS-14	TS	Defect 3I	3-9	WB
14	P 28	P 29	WEOS	EEOS	17 25	"	"	"	22	130		TS		3-9	WB
15	P 27	P 29	NEOS	SEOS	17 40	"	"	"	212	342		TS		3-9	WB
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 805

DESTRUCTIVE LENGTH CARRY - OVER: 342

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-9-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #3

REVIEWED BY: ~~TS~~

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 263

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER: FIRST PANEL	SEAM NUMBER: SECOND PANEL	SEAM SECTION: START POINT	SEAM SECTION: FINISH POINT	APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE: TEST DATE	NON-DESTRUCTIVE: CQA MONITOR
1	P 13	P 14	2 A	NEOS	0926	RH	5	735	95	358		TS		3-9	WB
2	P 11	P 14	SEOS	NEOS	0948	"	"	"	118	476		TS		3-9	WB
3	P 16	P 17	EEOS	WEOS	1022	"	"	"	22	498/0	DS-9	~~TS~~		3-9	WB
4	P 14	P 16	SEOS	NEOS	1031	"	"	"	212	212		~~TS~~		3-9	WB
5	P 16	P 19	SEOS	NEOS	1328	"	"	"	167	379		TS		3-9	WB
6	P 18	P 19	WEOS	EEOS	1425	"	"	"	22	401		TS		3-9	WB
7	P 16	P 18	SEOS	NEOS	1421	"	"	"	42	443		TS		3-9	WB
8	P 19	P 21	2 W	SEOS	1433	"	"	"	124	490/77	DS-11	TS		3-9	WB
9	P 19	P 22	NEOS	SEOS	1506	"	"	"	164	241		TS		3-9	WB
10	P 20	P 22	NEOS	SEOS	1534	"	"	"	118	359		TS		3-9	WB
11	P 26	P 27	EEOS	WEOS	1650	"	"	"	22	381		TS		3-9	WB
12	P 26	P 28	NEOS	SEOS	1700	"	"	"	156	490/47	DS-15	TS		3-9	WB
13	P 26	P 29	NEOS	SEOS	1740	"	"	"	186	233		TS		3-9	WB
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1448

DESTRUCTIVE LENGTH CARRY - OVER: 233

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-10-07
FUSION SEAM: ✓
EXTRUSION SEAM:
REVIEWED BY:

MACHINE NUMBER: #1
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 429
SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP.	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P 31	P 32	EEOS	WEOS	0940	ZM	5	735	22	451		TS		3-10	WB
2	P 1	P 32	NEOS	SEOS	0943	"	"	"	28	479/0	DS-16	TS		3-10	WB
3	P 2	P 32	NEOS	SEOS	0950	"	"	"	129	129		TS		3-10	WB
4	P 32	P 34	NEOS	SEOS	1024	"	"	"	154	283		TS		3-10	WB
5	P 33	P 34	WEOS	EEOS	1057	"	"	"	22	305		TS		3-10	WB
6	P 31	P 33	SEOS	NEOS	1059	"	"	"	238	490/53	DS-18	TS		3-10	WB
7	P 34	P 36	SD	SEOS	1317	"	6	"	114	167		TS		3-10	WB
8	P 37	P 38	WEOS	EEOS	1346	"	"	"	22	189		TS		3-10	WB
9	P 36	P 38	NEOS	SEOS	1347	"	"	"	103	292		TS		3-10	WB
10	P 36	P 37	SEOS	NEOS	1405	"	"	"	285	490/87	DS-21	TS		3-10	WB
11	P 39	P 40	WEOS	EEOS	1510	"	"	"	22	109		TS		3-10	WB
12	P 39	P 41	SEOS	NEOS	1517	"	"	"	196	305		TS		3-10	WB
13	P 39	P 42	SEOS	NEOS	1552	"	"	"	102	407		TS		3-10	WB
14	P 41	P 42	WEOS	EEOS	1612	"	"	"	22	429		TS		3-10	WB
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1459
DESTRUCTIVE LENGTH CARRY - OVER: 429

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-10-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #3

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 233

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 1	P 31	SEOS	NEOS	0928	RH	5	735	365	490/108	DS-17	TS		3-10	WB
2	P 31	P 34	SEOS	NEOS	1043	"	"	"	128	236		TS		3-10	WB
3	P 34	P 36	SEOS	NEOS	1312	"	6	"	161	397		TS		3-10	WB
4	P 33	P 36	SEOS	NEOS	1330	"	"	"	119	490/26	DS-19	TS		3-10	WB
5	P 33	P 35	SEOS	NEOS	1413	"	"	"	117	143		TS		3-10	WB
6	P 37	P 39	SEOS	NEOS	1454	"	"	"	295	438		TS		3-10	WB
7	P 40	P 42	SEOS	NEOS	1553	"	"	"	303	490/151	DS 22	TS		3-10	WB
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1388

DESTRUCTIVE LENGTH CARRY - OVER: 151

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-10-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #4

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 342'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 31	Tie In	EEOS	WEOS	1028	JG	4	735°	22	364		TS		3-10	WB
2	P 33	Tie In	EEOS	WEOS	1035	"	"	"	22	386		TS		3-10	WB
3	P 35	Tie In	EEOS	WEOS	1341	"	"	"	22	408		TS		3-10	WB
4	P 37	Tie In	EEOS	WEOS	1349	"	"	"	22	430		TS		3-10	WB
5	P 35	P 36	WEOS	EEOS	1416	"	"	"	22	452		TS		3-10	WB
6	P 35	P 37	SEOS	NEOS	1425	"	"	"	115	490/77	DS-20	TS		3-10	WB
7	P 39	Tie In	EEOS	WEOS	1455	"	"	"	22	99		TS		3-10	WB
8	P 38	P 40	SEOS	NEOS	1543	"	"	"	95	194		TS		3-10	WB
9	P 37	P 40	SEOS	NEOS	1600	"	"	"	106	300		TS		3-10	WB
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 448

DESTRUCTIVE LENGTH CARRY - OVER: 300

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-12-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: 4

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 300'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 28	P 43	NEOS	SEOS	0935	JG	6	735	95	395		TS		3-12	WB
2	P 28	P 44	NEOS	SEOS	0956	"	"	"	60	455		TS		3-12	WB
3	P 29	P 44	NEOS	SEOS	1006	"	"	"	339	490/304	DS-23	TS		3-12	WB
4	P 48	P 49	EEOS	WEOS	1120	"	"	"	22	326		TS		3-12	WB
5	P 46	P 48	NEOS	SEOS	1125	"	"	"	104	430		TS		3-12	WB
6	P 46	P 49	NEOS	SEOS	1322	"	"	"	198	490/138	DS-26	TS		3-12	WB
7	P 51	P 52	WEOS	EEOS	1350	"	"	"	22	160		TS		3-12	WB
8	P 52	P 54	NEOS	SEOS	1400	"	"	"	184	344		TS		3-12	WB
9	P 54	P 55	WEOS	EEOS	1430	"	"	"	22	366		TS		3-12	WB
10	P 52	P 55	NEOS	SEOS	1439	"	"	"	130	496/0	DS-29	TS		3-12	WB
11	P 56	P 57	WEOS	EEOS	1525	"	"	"	22	22		TS		3-12	WB
12	P 54	P 57	NEOS	SEOS	1534	"	"	"	215	237		TS		3-12	WB
13	P 35	P 57	NEOS	SEOS	1624	"	"	"	133	370		TS		3-12	WB
14	P 59	P 60	EEOS	WEOS	1650	"	"	"	22	392		TS		3-12	WB
15	P 57	P 60	NEOS	SEOS	1703	"	"	"	176	490/78	DS-33	TS		3-12	WB
16	P 60	P 62	NEOS	SEOS	1745	"	"	"	171	249		TS		3-12	WB
17	P 62	P 63	EEOS	WEOS	1815	"	"	"	22	271		TS		3-12	WB
18	P 60	P 63	NEOS	SEOS	1822	"	"	"	10	281		TS		3-12	WB
19															
20															
21															
22															
					DAILY TOTAL FOR WELDED SEAM:				1947						
										281					

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-12-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: 1

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 429

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE TEST DATE	NON DESTRUCTIVE CQA MONITOR
1	P 43	P 44	EEOS	WEOS	0951	LM	4	735	22	451		TS		3-12	WB
2	P 46	P 47	EEOS	WEOS	1022	"	"	"	22	473		TS		3-12	WB
3	P 44	P 45	WEOS	EEOS	1037	"	"	"	22	495/0	DS-24	TS		3-12	WB
4	P 29	P 45	NEOS	SEOS	1050	"	"	"	60	60		TS		3-12	WB
5	P 30	P 45	NEOS	SEOS	1057	"	"	"	32	92		TS		3-12	WB
6	P 49	P 50	EEOS	WEOS	1104	"	"	"	22	114		TS		3-12	WB
7	P 45	P 47	NEOS	SEOS	1109	"	"	"	99	213		TS		3-12	WB
8	P 47	P 50	NEOS	SEOS	1130	"	"	"	95	308		TS		3-12	WB
9	P 48	P 51	NEOS	SEOS	1320	"	"	"	101	409		TS		3-12	WB
10	P 49	P 51	NEOS	SEOS	1335	"	"	"	192	490/111	DS-27	TS		3-12	WB
11	P 49	P 52	NEOS	SEOS	1420	"	"	"	208	319		TS		3-12	WB
12	P 50	P 52	NEOS	SEOS	1441	"	"	"	102	421		TS		3-12	WB
13	P 53	P 56	NEOS	SEOS	1531	"	"	"	81	497/5	DS-30	TS		3+2	WB
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1058

DESTRUCTIVE LENGTH CARRY - OVER: 5'

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-12-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: 3

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 151

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P 43	P 46	NEOS	SEOS	10 01	RH	6	735	95	246		TS		3-12	TS
2	P 44	P 46	NEOS	SEOS	10 22	"	"	"	204	450		TS		3-12	TS
3	P 44	P 47	NEOS	SEOS	11 01	"	"	"	195	490/155	DS-25	TS		3-12	TS
4	P 49	P 49	NEOS	SEOS	11 42	"	"	"	203	358		TS		3-12	TS
5	P 28	T.I.	WEOS	EEOS	12 55	"	"	"	22	380		TS		3-12	TS
6	P 43	T.I.	WEOS	EEOS	13 01	"	"	"	22	402		TS		3-12	TS
7	P 46	T.I.	WEOS	EEOS	13 06	"	"	"	22	424		TS		3-12	TS
8	P 48	T.I.	WEOS	EEOS	13 11	"	"	"	22	446		TS		3-12	TS
9	P 51	T I	WEOS	EEOS	13 31	"	"	"	22	468		TS		3-12	TS
10	P 53	T I	WEOS	EEOS	13 35	"	"	"	22	490/ 0	DS-28	TS		3-12	TS
11	P 51	P 53	NEOS	SEOS	13 44	"	"	"	80	80		TS		3-12	TS
12	P 53	P 54	WEOS	EEOS	14 04	"	"	"	22	102		TS		3-12	TS
13	P 51	P 54	NEOS	SEOS	14 09	"	"	"	210	312		TS		3-12	TS
14	P 56	T.I.	WEOS	EEOS	15 27	"	"	"	22	334		TS		3-12	TS
15	P 54	P 56	NEOS	SEOS	15 42	"	"	"	178	490/22	DS 31	TS		3-12	TS
16	P 57	P 59	NEOS	SEOS	16 33	"	"	"	179	201		TS		3-12	TS
17	P 59	P 61	NEOS	SEOS	17 30	"	"	"	168	369		TS		3-12	TS
18															
19															
20															
21															
22															
								DAILY TOTAL FOR WELDED SEAM:	1688						
								DESTRUCTIVE LENGTH CARRY - OVER:		369					

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-12-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #2

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 0

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P58	T.I.	WEOS	EEOS	1605	LM	4	735	22	22		TS		3-12	WB
2	P 58	P 59	WEOS	EEOS	1620	"	"	"	22	44		TS		3-12	WB
3	P 56	P 58	NEOS	SEOS	1634	"	"	"	41	85/0	DS-32	TS		3-12	WB
4	P 56	P 59	NEOS	SEOS	1638	"	"	"	219	219		TS		3-12	WB
5	P 61	T.I.	WEOS	EEOS	1730	"	"	"	22	241		TS		3-12	WB
6	P 58	P 61	NEOS	SEOS	1740	"	"	"	41	282		TS		3-12	WB
7	P 61	P 62	WEOS	EEOS	1757	"	"	"	22	304		TS		3-12	WB
8	P 59	P 62	NEOS	SEOS	1803	"	"	"	227	490/41	DS-34	TS		3-12	WB
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 616

DESTRUCTIVE LENGTH CARRY - OVER: 41

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-13-07
FUSION SEAM: ✓
EXTRUSION SEAM:
MACHINE NUMBER: # 3
REVIEWED BY:
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 369'
SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NONDESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 61	P 64	NEOS	SEOS	0949	RH	6	735°	214	490/93	DS-35	TS		3-13	WB
2	P 64	P 66	NEOS	SEOS	1050	"	"	"	141	234		TS		3-13	WB
3	P 69	T.I.	NEOS	WEOS	1335	"	"	"	22	256		TS		3-13	WB
4	P 66	P 69	NEOS	SEOS	1345	"	"	"	140	396		TS		3-13	WB
5	P 69	P 72	NEOS	SEOS	1503	"	"	"	236	490/142	DS-39	TS		3-13	WB
6	P 72	P 74	NEOS	SEOS	1557	"	"	"	304	446		TS		3-13	WB
7	P 75	P 76	NEOS	SEOS	1705	"	"	"	179	490/135	DS 41	TS		3-13	WB
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1236
DESTRUCTIVE LENGTH CARRY - OVER: 135

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-13-07
FUSION SEAM: ✓
EXTRUSION SEAM:
REVIEWED BY:

MACHINE NUMBER: #2
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: ~~DS 1~~ 41'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE TEST DATE	NON DESTRUCTIVE CQA MONITOR
1	P 64	T I	~~WEOS~~	~~WEOS~~	1000	LM	5	735	~~22~~	63		TS		3-13	WB
2	P 62	P 64	NEOS	SEOS	1008	"	"	"	162	225		TS		3-13	WB
3	P 66	T I	WEOS	EEOS	1103	"	"	"	22	247		TS		3-13	WB
4	P 66	P 67	WEOS	EEOS	1113	"	"	"	22	269		TS		3-13	WB
5	P 64	P 67	NEOS	SEOS	1119	"	"	"	235	490/14	DS 37	TS		3-13	WB
6	P 69	P 70	WEOS	EEOS	1340	"	"	"	22	36		TS		3-13	WB
7	P 67	P 69	NEOS	SEOS	1344	"	"	"	165	201		TS		3-13	WB
8	P 71	T I	WEOS	EEOS	1447	"	"	"	22	223		TS		3 13	WB
9	P 69	P 71	NEOS	SEOS	~~1458~~	"	"	"	~~67~~ 67	290		TS		3-13	WB
10	P 71	P 72	WEOS	EEOS	1508	"	"	"	22	312		TS		3-13	WB
11	P 74	T I	EEOS	WEOS	1600	"	"	"	22	334		TS		3-13	WB
12	P 71	P 74	NEOS	SEOS	1607	"	"	"	66	400		TS		3-13	WB
13	P 75	T I	WEOS	EEOS	1653	"	"	"	22	422		TS		3-13	WB
14	P 76	T I	WEOS	EEOS	1703	"	"	"	22	444		TS		3-13	WB
15	P 77	T I	WEOS	EEOS	1716	"	"	"	14	458		TS		3-13	WB
16	P 76	P 77	NEOS	SEOS	1720	"	"	"	111	490/79	DS-42	TS		3-13	WB
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1018

DESTRUCTIVE LENGTH CARRY - OVER: 79

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-13-07
FUSION SEAM: ✓
EXTRUSION SEAM:
REVIEWED BY:

MACHINE NUMBER: #4
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 281

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 64	P 65	WEOS	WEOS	1008	JG	4	735	22	303		TS		3-13	WB
2	P 62	P 65	NEOS	SEOS	1015	"	"	"	237	490/50	DS-36	TS		3-13	WB
3	P 63	P 65	NEOS	SEOS	1055	"	"	"	10	60		TS		3-13	WB
4	P 65	P 67	NEOS	SEOS	1040	"	"	"	164	224		TS		3-13	WB
5	P 67	P 68	EEOS	WEOS	1140	"	"	"	22	246		TS		3-13	WB
6	P 65	P 68	NEOS	SEOS	1315	"	"	"	86	332		TS		3-13	WB
7	P 67	P 70	NEOS	SEOS	1340	"	"	"	236	490/78	DS-38	TS		3-13	WB
8	P 68	P 70	NEOS	SEOS	1428	"	"	"	92	170		TS		3-13	WB
9	P 70	P 72	NEOS	SEOS	1515	"	"	"	162	332		TS		3-13	WB
10	P 72	P 73	EEOS	WEOS	1545	"	"	"	22	354		TS		3-13	WB
11	P 70	P 73	NEOS	SEOS	1553	"	"	"	24	378		TS		3-13	WB
12	P 74	P 75	NEOS	SEOS	1651	"	"	"	218	490/106	DS-40	TS		3-13	WB
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1295

DESTRUCTIVE LENGTH CARRY - OVER: 106

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-14-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #1

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 5'

SHEET NUMBER: 1 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 77	P 80	NEOS	SEOS	11 15	PM	5	735	22	27'		TS		3-14	WB
2	P 77	P 79	NEOS	SEOS	11 20	"	"	"	23	50'		TS		3-14	WB
3	P 77	P 78	EEOS	WEOS	11 26	"	"	"	16	66'		TS		3-14	WB
4	P 76	P 78	NEOS	SEOS	11 40	"	"	"	17	83'		TS		3-14	WB
5	P 76	P 87	NEOS	SEOS	11 44	"	"	"	22	105'		TS		3-14	WB
6	P 76	P 88	NEOS	SEOS	11 50	"	"	"	22	127'		TS		3-14	WB
7	P 89	P 90	NEOS	SEOS	13 14	"	"	"	22	149'		TS		3-14	WB
8	P 76	P 89	EEOS	WEOS	13 20	"	"	"	3	152'		TS		3-14	WB
9	P 76	P 90	EEOS	WEOS	13 21	"	"	"	12	164'		TS		3-14	WB
10	P 75	P 90	NEOS	SEOS	13 35	"	"	"	16	180'		TS		3-14	WB
11	P 75	P 91	NEOS	SEOS	13 39	"	"	"	22	202'		TS		3-14	WB
12	P 75	P 92	EEOS	WEOS	13 46	"	"	"	22	224'		TS		3-14	WB
13	P 74	P 92	NEOS	SEOS	13 53	"	"	"	22	246		TS		3-14	WB
14	P 74	P 93	NEOS	SEOS	13 58	"	"	"	22	268		TS		3-14	WB
15	P 74	P 94	NEOS	SEOS	14 03	"	"	"	22	290		TS		3-14	WB
16	P 74	P 95	NEOS	SEOS	14 08	"	"	"	22	312		TS		3-14	WB
17	P 74	P 96	NEOS	SEOS	14 13	"	"	"	22	334		TS		3-14	WB
18	P 74	P 97	NEOS	SEOS	14 18	"	"	"	22	356		TS		3-14	WB
19	P 74	P 98	NEOS	SEOS	14 23	"	"	"	22	378		TS		3-14	WB
20	P 98	P 100	NEOS	SEOS	14 26	"	"	"	5	383		TS		3-14	WB
21	P 74	P 100	NEOS	SEOS	14 35	"	"	"	22	405		TS		3-14	WB
22	P 72	P 100	NEOS	SEOS	14 54	"	"	"	3	408		TS		3-14	WB
				DAILY TOTAL FOR WELDED SEAM:					403	Carry over to page '2'					
				DESTRUCTIVE LENGTH CARRY - OVER:					401	408	Carry over to page '2'				

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-14-07

FUSION SEAM: ✓

EXTRUSION SEAM: _____

MACHINE NUMBER: 1

REVIEWED BY: [signature]

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 408'

SHEET NUMBER: 2 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 72	P 99	NEOS	SEOS	1455	PM	5	735	22	430		TS		3-14	WB
2	P 72	P 101	NEOS	SEOS	1459	"	"	"	22	452		TS		3-14	WB
3	P 72	P 102	NEOS	SEOS	1504	"	"	"	22	474		TS		3-14	WB
4	P 72	P 103	NEOS	SEOS	1509	"	"	"	22	496		TS		3-14	WB
5	P 72	P 104	NEOS	SEOS	1514	"	"	"	7	496 / 7	DS-46	TS		3-14	WB
6	P 73	P 104	NEOS	SEOS	1516	"	"	"	15	22		TS		3-14	WB
7	P 73	P 107	NEOS	SEOS	1529	"	"	"	8	30		TS		3-14	WB
8	P 105	P 107	NEOS	SEOS	1531	"	"	"	13	43		TS		3-14	WB
9	P 105	P 108	NEOS	SEOS	1544	"	"	"	22	65		TS		3-14	WB
10	P 105	P 109	NEOS	SEOS	1656	"	"	"	22	87		TS		3-14	WB
11	P 105	P 110	NEOS	SEOS	1700	"	"	"	22	109		TS		3-14	WB
12	P 106	P 111	NEOS	SEOS	1706	"	"	"	20	129		TS		3-14	WB
13	P 106	P 112	NEOS	SEOS	1711	"	"	"	22	151		TS		3-14	WB
14	P 106	P 113	NEOS	SEOS	1716	"	"	"	22	173		TS		3-14	WB
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 664 total Pages (1 & 2)

DESTRUCTIVE LENGTH CARRY - OVER: 173

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-14-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: 4

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 106'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 78	P 79	EEOS	WEOS	1028	JG	6.0	T35	62	108		TS		3-14	WB
2	P 79	P 80	EEOS	WEOS	1040	JG	"	"	62	230		TS		3-14	WB
3	P 77	P 82	NEOS	SEOS	1055	"	"	"	63	293		TS		3-14	WB
4	P 82	P 84	NEOS	SEOS	1110	"	"	"	31	324		TS		3-14	WB
5	P 83	P 85	EEOS	WEOS	1122	"	"	"	30	354		TS		3-14	WB
6	P 85	P 86	EEOS	WEOS	1125	"	"	"	15	369		TS		3-14	WB
7	P 83	P 84	NEOS	SEOS	1137	"	"	"	8	377		TS		3-14	WB
8	P 82	P 83	NEOS	SEOS	1151	"	"	"	14	391		TS		3-14	WB
9	P 81	P 82	NEOS	SEOS	1154	"	"	"	22	413		TS		3-14	WB
10	P 92	P 93	EEOS	WEOS	1305	"	"	"	96	490/19	DS-43	TS		3-14	WB
11	P 93	P 94	EEOS	WEOS	1325	"	"	"	89	108		TS		3-14	WB
12	P 99	P 98	EEOS	WEOS	1400	"	"	"	68	176		TS		3-14	WB
13	P 99	P 101	EEOS	WEOS	1416	"	"	"	81	257		TS		3-14	WB
14	P 73	P 105	EEOS	WEOS	1513	"	"	"	22	279		TS		3 14	WB
15	P 107	P 108	EEOS	WEOS	1530	"	"	"	73	352		TS		3-14	WB
16	P 110	P 111	EEOS	WEOS	1638	"	"	"	87	439		TS		3-14	WB
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 823

DESTRUCTIVE LENGTH CARRY - OVER: 439

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-14-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #3

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 135

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P 80	P 81	EEOS	WEOS	1037	RH	5.5	735	62	197		TS		3-14	WB
2	P 78	P 87	EEOS	WEOS	1100	"	"	"	77	274		TS		3-14	WB
3	P 87	P 88	EEOS	WEOS	1119	"	"	"	71	345		TS		3-14	WB
4	P 88	P 89	EEOS	WEOS	1140	"	"	"	69	414		TS		3-14	WB
5	P 91	P 92	EEOS	WEOS	1320	"	"	"	86	495/5	DS-44	TS		3-14	WB
6	P 95	P 96	EEOS	WEOS	1340	"	"	"	79	84		TS		3-14	WB
7	P 98	P 99	EEOS	WEOS	1403	"	"	"	63	147		TS		3-14	WB
8	P 99	P 100	EEOS	WEOS	1418	"	"	"	22'	169		TS		3-14	WB
9	P 103	P 104	EEOS	WEOS	1433	"	"	"	74'	243		TS		3-14	WB
10	P 104	P 107	EEOS	WEOS	1521	"	"	"	73	316		TS		3-14	WB
11	P 109	P 110	EEOS	WEOS	1626	"	"	"	76	392		TS		3-14	WB
12	P 112	P 113	EEOS	WEOS	1655	"	"	"	83	475/10	DS-47	TS		3-14	WB
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 835

DESTRUCTIVE LENGTH CARRY - OVER: 0

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-14-07
FUSION SEAM: ✓
EXTRUSION SEAM:
REVIEWED BY:

MACHINE NUMBER: #2
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 79'
SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 81	P 83	EEOS	WEOS	1040	LM	5.5	735	50	129		TS		3-14	WB
2	P 82	T.I.	WEOS	EEOS	1102	"	"	"	22	151		TS		3-14	WB
3	P 84	T I	WEOS	EEOS	1112	"	"	"	22	173		TS		3-14	WB
4	P 86	T I	WEOS	EEOS	1125	"	"	"	8	181		TS		3-14	WB
5	P 84	P 86	SEOS	NEOS	1133	"	"	"	7	188		TS	Capped by #4	—	—
6	P 84	P 85	NEOS	SEOS	1137	"	"	"	23	211		TS		3-14	WB
7	P 89	P 91	EEOS	WEOS	1318	"	"	"	71	282		TS		3-14	WB
8	P 90	P 91	EEOS	WEOS	1330	"	"	"	11	293		TS		3-14	WB
9	P 94	P 95	EEOS	WEOS	1337	"	"	"	83	376		TS		3-14	WB
10	P 96	P 97	EEOS	WEOS	1355	"	"	"	75	~~451~~		TS		3-14	WB
11	P 101	P 102	EEOS	WEOS	1409	"	"	"	77	490 / 38	DS-45	TS		3-14	WB
12	P 102	P 103	EEOS	WEOS	1428	"	"	"	76	114		TS		3-14	WB
13	P 70	P 105	NEOS	SEOS	1507	"	"	"	81	195		TS		3-14	WB
14	P 70	P 106	NEOS	SEOS	1523	"	"	"	63	258		TS		3-14	WB
15	P 105	P 106	EEOS	WEOS	1534	"	"	"	22	280		TS		3-14	WB
16	P 108	P 109	EEOS	WEOS	1622	"	"	"	76	356		TS		3-14	WB
17	P 111	P 112	EEOS	WEOS	1648	"	"	"	88	444		TS		3-14	WB
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 855
DESTRUCTIVE LENGTH CARRY - OVER: 444

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-15-07
FUSION SEAM: ✓
EXTRUSION SEAM:
MACHINE NUMBER: #4
REVIEWED BY:
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 439'
SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P 42	P 115	SEOS	NEOS	0954	JG	6.0	735	295	490/244	DS-48	TS		3-15	WB
2	P 41	P 115	SEOS	NEOS	1040	"	"	"	67	311		TS		3-15	WB
3	P 117	P 118	WEOS	EEOS	1058	"	"	"	22	333		TS		3-15	WB
4	P 116	P 118	EEOS	WEOS	1105	"	"	"	22	355		TS		3-15	WB
5	P 115	P 116	SEOS	NEOS	1112	"	"	"	36	391		TS		3-15	WB
6	P 115	P 118	SEOS	NEOS	1123	"	"	"	49	440		TS		3-15	WB
7	P 115	P 117	SEOS	NEOS	1131	"	"	"	273	490/223	DS-50	TS		3-15	WB
8	P 120	P 122	SEOS	NEOS	1328	"	"	"	122	345		TS		3-15	WB
9	P 119	P 122	SEOS	NEOS	1350	"	"	"	75	420		TS		3-15	WB
10	P 122	P 124	SEOS	NEOS	1406	"	"	"	195	490/125	DS-52	TS		3-15	WB
11	P 121	P 124	SEOS	NEOS	1440	"	"	"	72	197		TS		3-15	WB
12	P 123	P 124	WEOS	EEOS	1459	"	"	"	22	219		TS		3-15	WB
13	/														
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1250
DESTRUCTIVE LENGTH CARRY - OVER: 219

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-15-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #3

REVIEWED BY: [illegible]

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 0

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 114	T.I.	EEOS	WEOS	1010	RH	4.0	735	22	22		TS		3-15	WB
2	P 41	TI	EEOS	WEOS	1018	"	"	"	22	44		TS		3-15	WB
3	P 117	TI	EEOS	WEOS	1043	"	"	"	22	66		TS		3-15	WB
4	P 116	P 120	SEOS	NEOS	1125	"	"	"	28	94		TS		3-15	WB
5	P 118	P 120	SEOS	NEOS	1131	"	"	"	49	143		TS		3-15	WB
6	P 117	P 120	SEOS	NEOS	1141	"	"	"	44	187		TS		3-15	WB
7	P 119	P 120	WEOS	EEOS	1156	"	"	"	22	209		TS		3-15	WB
8	P 121	P 122	WEOS	EEOS	1345	"	"	"	22	231		TS		3-15	WB
9	P 121	P 123	SEOS	NEOS	1351	"	"	"	200	431		TS		3-15	WB
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 431

DESTRUCTIVE LENGTH CARRY - OVER: 431

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-15-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: # 2

REVIEWED BY: [signature]

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 444

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 114	P 115	WEOS	EEOS	0957	LM	5.0	735	22	466		TS		3-15	WB
2	P 41	P 114	SEOS	NEOS	1004	"	"	"	125	490/101	DS-49	TS		3-15	WB
3	P 114	P 117	SEOS	NEOS	1035	"	"	"	125	226		TS		3-15	WB
4	P 117	P 119	SEOS	NEOS	1121	"	"	"	350	490/86	DS 51	TS		3-15	WB
5	P 119	P 121	SEOS	NEOS	1337	"	"	"	277	363		TS		3-15	WB
6	P 119	TI	EEOS	WEOS	1454	"	"	"	22	385		TS		3-15	WB
7	P 121	TI	EEOS	WEOS	1520	"	"	"	22	407		TS		3-15	WB
8	P 123	TI	EEOS	WEOS	1524	"	"	"	22	429		TS		3-15	WB
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 965

DESTRUCTIVE LENGTH CARRY - OVER: 429

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-20-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #4

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 219

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 124	P 126	SEOS	NEOS	0945	JG	6.0	735	258	477		TS		3-20	WB
2	P 126	P 128	SEOS	NEOS	1104	"	"	"	331	490/318	DS-55	TS		3-20	WB
3	P 128	P 130	SEOS	NEOS	1335	"	"	"	53	371		TS		3-20	WB
4	P 129	P 130	WEOS	EEOS	1345	"	"	"	22	393		TS		3-20	WB
5	P 130	P 132	SEOS	NEOS	1353	"	"	"	48	441		TS		3-20	WB
6	P 129	P 132	SEOS	NEOS	1400	"	"	"	57	494/4	DS-57	TS		3-20	WB
7	P 132	P 134	SEOS	NEOS	1410	"	"	"	101	105		TS		3-20	WB
8	P 131	P 134	SEOS	NEOS	1435	"	"	"	45	150		TS		3-20	WB
9	P 133	P 134	WEOS	EEOS	1440	"	"	"	22	172		TS		3-20	WB
10	P 136	P 138	SEOS	NEOS	1550	"	"	"	184	356		TS		3-20	WB
11	P 135	P 138	SEOS	NEOS	1618	"	"	"	42	398		TS		3-20	WB
12	P 140	P 142	SEOS	NEOS	1720	"	"	"	248	490/156	DS 62	TS		3-20	WB
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1411

DESTRUCTIVE LENGTH CARRY - OVER: 156

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-20-07
FUSION SEAM: ✓
EXTRUSION SEAM:
REVIEWED BY:

MACHINE NUMBER: #2
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 429'
SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P 123	P 126	SEOS	NEOS	0952	AG	5	735	74	498/5	DS-53	TS		3-20	WB
2	P 123	P 125	SEOS	NEOS	1010	"	"	"	129	134		TS		3-20	WB
3	P 125	P.I.	WEOS	EEOS	1053	"	"	"	22	156		TS		3-20	WB
4	P 128	P 129	SEOS	NEOS	1114	"	"	"	339	490/5	DS-56	TS		3-20	WB
5	P 131	P 132	WEOS	EEOS	1345	"	"	"	22	27		TS		3-20	WB
6	P 129	P 131	SEOS	EEOS	1352	"	"	"	341	368		TS		3-20	WB
7	P 131	T I	WEOS	EEOS	1447	"	"	"	22	390		TS		3-20	WB
8	P 133	P 136	SEOS	NEOS	1530	"	"	"	44	434		TS		3-20	WB
9	P 135	P 136	WEOS	EEOS	1538	"	"	"	22	456		TS		3-20	WB
10	P 135	P 137	SEOS	NEOS	1549	"	"	"	207	490/173	DS 59	TS		3-20	WB
11	P 137	T I	WEOS	EEOS	1630	"	"	"	22	195		TS		3-20	WB
12	P 137	P 140	SEOS	NEOS	1710	"	"	"	32	227		TS		3-20	WB
13	P 139	P 140	WEOS	EEOS	1716	"	"	"	22	249		TS		3-20	WB
14	P 141	P 142	WEOS	EEOS	1730	"	"	"	22	271		TS		3-20	WB
15	P 139	P 142	SEOS	NEOS	1734				28	299		TS		3-20	WB
16	P 139	P 141	SEOS	NEOS	1738				139	438		TS		3-20	WB
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1487
DESTRUCTIVE LENGTH CARRY - OVER: 438

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-20-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #3

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 431'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P125	P126	EEOS	WEOS	1000	RH	5.0	735	22	453		TS		3-20	WB
2	P127	P128	WEOS	EEOS	1014	"	"	"	22	475		TS		3-20	WB
3	P125	P128	SEOS	NEOS	1022	"	"	"	66	490/51	DS-54	TS		3-20	WB
4	P125	P127	SEOS	NEOS	1038	"	"	"	63	114		TS		3-20	WB
5	P127	T.I.	WEOS	EEOS	1058	"	"	"	22	136		TS		3-20	WB
6	P127	P129	SEOS	NEOS	1119	"	"	"	63	199		TS		3-20	WB
7	P129	T.I.	WEOS	EEOS	1135	"	"	"	22	221		TS		3-20	WB
8	P131	P133	SEOS	NEOS	1351	"	"	"	295	490/26	DS-58	TS		3-20	WB
9	P133	TI	WEOS	EEOS	1447	"	"	"	22	48		TS		3-20	WB
10	P133	P135	SEOS	NEOS	1523	"	"	"	247	295		TS		3-20	WB
11	P135	TI	WEOS	EEOS	1650	"	"	"	22	317		TS		3-20	WB
12	P137	P139	SEOS	NEOS	1730	"	"	"	168	485/0	DS-61	TS		3-20	WB
13	P139	T.I.	WEOS	EEOS	1725	"	"	"	22	22		TS		3-20	WB
14															
15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1056

DESTRUCTIVE LENGTH CARRY - OVER: 22

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-20-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: # 1

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 173'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 134	P 136	SEOS	NEOS	1520	PM	5.5	735	143	316		TS		3-20	WB
2	P 137	P 138	WEOS	SEOS	1556	"	"	"	22	338		TS		3-20	WB
3	P 138	P 140	SEOS	NEOS	1710	"	"	"	222	490/70	DS-60	TS		3-20	WB
4															
5															
6															
7															
8															
9															
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21															
22															

DAILY TOTAL FOR WELDED SEAM: 387

DESTRUCTIVE LENGTH CARRY - OVER: 70

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-22-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #4

REVIEWED BY: [signature]

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 156'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE TEST DATE	NON DESTRUCTIVE CQA MONITOR
1	P-142	P 144	SEOS	NEOS	0930	JG	6	735	276	432		TS		3-22	WB
2	P 141	P 144	SEOS	NEOS	10 20	"	"	"	27	459		TS		3-22	WB
3	P 144	P 146	SEOS	NEOS	1035	"	"	"	380	490/269	DS-64	TS		3-22	WB
4	P 149	P 153	EEOS	NEOS	1327	"	"	"	22	291		TS		3-22	WB
5	P 147	P 149	SEOS	NEOS	1330	"	"	"	36	327		TS		3-22	WB
6	P 147	P 153	SEOS	NEOS	1338	"	"	"	28	355		TS		3-22	WB
7	P 148	P 153	SEOS	NEOS	1343	"	"	"	56	411		TS		3-22	WB
8	P 152	P 153	WEOS	EEOS	1356	"	"	"	22	433		TS		3-22	WB
9	P 154	P 155	EEOS	WEOS	1406	"	"	"	22	455		TS		3-22	WB
10	P 149	P 155	SEOS	NEOS	1411	"	"	"	33	488/0	DS-67	TS		3-22	WB
11	P 153	P 155	SEOS	NEOS	1415	"	"	"	13	13		TS		3-22	WB
12	P 153	P 154	SEOS	NEOS	1419	"	"	"	71	84		TS		3-22	WB
13	P 152	P 154	SEOS	NEOS	1430	"	"	"	232	316		TS		3-22	WB
14	P 154	P 157	SEOS	NEOS	1525	"	"	"	99	415		TS		3-22	WB
15	P 155	P 159	SEOS	NEOS	1545	"	"	"	43	458		TS		3-22	WB
16	P 154	P 159	SEOS	NEOS	1552	"	"	"	211	490/179	DS-68	TS		3-22	WB
17	P 157	P 159	WEOS	EEOS	1630	"	"	"	22	201		TS		3-22	WB
18	P 159	P 163	SEOS	NEOS	1638	"	"	"	249	450		TS		3-22	WB
19	P 166	P 167	WEOS	EEOS	1737	"	"	"	22	472		TS		3-22	WB
20	P 163	P 167	SEOS	NEOS	1740	"	"	"	79	490/61	DS-70	TS		3-22	WB
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1863

DESTRUCTIVE LENGTH CARRY - OVER: 61

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-22-07
FUSION SEAM: ✓
EXTRUSION SEAM:
REVIEWED BY:

MACHINE NUMBER: # 2
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 438'
SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P 143	P 144	WEOS	EEOS	0943	AG	4.5	735	22	460		TS		3-22	WB
2	P 145	P 146	EEOS	WEOS	0953	"	"	"	22	482		TS		3-22	WB
3	P 143	P 146	SEOS	NEOS	0959	"	"	"	24	485/21	DS-63	TS		3-22	WB
4	P 143	P 145	SEOS	NEOS	1004	"	"	"	87	108		TS		3-22	WB
5	P 146	P 147	SEOS	NEOS	1046	"	"	"	71	179		TS		3-22	WB
6	P 147	P 148	WEOS	EEOS	1120	"	"	"	22	201		TS		3-22	WB
7	P 146	P 148	SEOS	NEOS	1119	"	"	"	248	449		TS		3-22	WB
8	P 148	P 152	SEOS	NEOS	1320	"	"	"	232	490/191	DS-65	TS		3-22	WB
9	P 150	P 152	EEOS	WEOS	1411	"	"	"	22	213		TS		3-22	WB
10	P 151	P 154	EEOS	WEOS	1420	"	"	"	20	233		TS		3-22	WB
11	P 151	P 156	SEOS	NEOS	1520	"	"	"	87	320		TS		3-22	WB
12	P 151A	P 156	SEOS	NEOS	1535	"	"	"	6	326		TS		3-22	WB
13	P 156	T 1	WEOS	EEOS	1540	"	"	"	21	347		TS		3-22	WB
14	P 160	P 161	EEOS	WEOS	1620	"	"	"	61	408		TS		3-22	WB
15	P 158	P 162	SEOS	NEOS	1632	"	"	"	35	443		TS		3-22	WB
16	P 158	P 163	WEOS	EEOS	1646	"	"	"	22	465		TS		3-22	WB
17	P 161	P 164	EEOS	WEOS	1709	"	"	"	45	490/20	DS-69	TS		3-22	WB
18	P 162	P 164	EEOS	WEOS	1720	"	"	"	26	46		TS		3-22	WB
19	P 158	P 164	SEOS	NEOS	1727	"	"	"	27	73		TS		3-22	WB
20	P 160	P 166	NEOS	SEOS	1743	"	"	"	22	95		TS		3-22	WB
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1122

DESTRUCTIVE LENGTH CARRY - OVER: 95

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-22-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: # 3

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 22

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 141	P 143	SEOS	NEOS	0916	RH	5.0	735	112	134		TS		3-22	WB
2	P 143	T I	WEOS	EEOS	0948	"	"	"	22	156		TS		3-22	WB
3	P 141	T I	WEOS	EEOS	0950	"	"	"	22	178		TS		3-22	WB
4	P 145	T I	WEOS	EEOS	0959	"	"	"	22	200		TS		3-22	WB
5	P 145	P 148	NEOS	NEOS	1115	"	"	"	94	294		TS		3-22	WB
6	P 148	P 150	SEOS	NEOS	1319	"	"	"	67	361		TS		3-22	WB
7	P 150	P 151	SEOS	NEOS	1342	"	"	"	79	440		TS		3-22	WB
8	P 151	P 151A	WEOS	EEOS	1351	"	"	"	6	446		TS		3-22	WB
9	P 151A	T I	WEOS	EEOS	1401	"	"	"	10	456		TS		3-22	WB
10	P 151	T I	WEOS	EEOS	1402	"	"	"	19	475		TS		3-22	WB
11	P 150	T I	WEOS	EEOS	1407	"	"	"	22	497 / 0	DS-66	TS		3-22	WB
12	P 156	P 157	WEOS	EEOS	1522	"	"	"	22	22		TS		3-22	WB
13	P 156	P 158	SEOS	NEOS	1532	"	"	"	115	137		TS		3-22	WB
14	P 158	P 161	SEOS	NEOS	1622	"	"	"	29	166		TS		3-22	WB
15	P 157	P 163	SEOS	NEOS	1630	"	"	"	107	273		TS		3-22	WB
16	P 160	P 165	EEOS	WEOS	1708	"	"	"	58	331		TS		3-22	WB
17	P 163	P 166	SEOS	NEOS	1730	"	"	"	278	490 / 119	DS-71	TS		3-22	WB
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1084

DESTRUCTIVE LENGTH CARRY - OVER: 119

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-23-07

FUSION SEAM: ✓

EXTRUSION SEAM:

MACHINE NUMBER: #2

REVIEWED BY:

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 95'

SHEET NUMBER: 1 of 2

LINE NUMBER	SEAM NUMBER: FIRST PANEL	SEAM NUMBER: SECOND PANEL	SEAM SECTION: START POINT	SEAM SECTION: FINISH POINT	APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE: TEST DATE	NON-DESTRUCTIVE: CQA MONITOR
1	P 168	P 169	WEOS	EEOS	1001	AG	4.5	735	22	117		TS		3-23	WB
2	P 167	P 169	SEOS	NEOS	1005	"	"	"	28	145		TS		3-23	WB
3	P 165	P 171	EEOS	WEOS	1040	"	"	"	29	174		TS		3-23	WB
4	P 165	P 172	EEOS	WEOS	1044	"	"	"	26	200		TS		3-23	WB
5	P 171	P 172	EEOS	WEOS	1050	"	"	"	24	224		TS		3-23	WB
6	P 174	P 175	EEOS	WEOS	1059	"	"	"	65	289		TS		3-23	WB
7	P 170	P 174	SEOS	NEOS	1121	"	"	"	23	312		TS		3-23	WB
8	P 178	P 179	SEOS	NEOS	1311	"	"	"	111	423		TS		3-23	WB
9	P 179	P 180	WEOS	EEOS	1337	"	"	"	22	445		TS		3-23	WB
10	P 180	P 181	WEOS	EEOS	1342	"	"	"	22	467		TS		3-23	WB
11	P 178	P 181	SEOS	NEOS	1351	"	"	"	125	490/102	DS-74	TS		3-23	WB
12	P 180	P 182	SEOS	NEOS	1620	"	"	"	32	134		TS		3-23	WB
13	P 177	P 182	SEOS	NEOS	1629	"	"	"	21	155		TS		3-23	WB
14	P 184	P 185	WEOS	EEOS	1638	"	"	"	65	220		TS		3-23	WB
15	P 182	P 183	SEOS	NEOS	1650	"	"	"	22	242		TS		3-23	WB
16	P 182	P 184	SEOS	NEOS	1655	"	"	"	22	264		TS		3-23	WB
17	P 182	P 185	SEOS	NEOS	1500	"	"	"	22	286		TS		3-23	WB
18	P 182	P 186	SEOS	NEOS	1705	"	"	"	22	308		TS		3-23	WB
19	P 182	P 187	SEOS	NEOS	1710	"	"	"	22	330		TS		3-23	WB
20	P 182	P 189	SEOS	NEOS	1713	"	"	"	22	352		TS		3-23	WB
21	P 182	P 190	SEOS	NEOS	1717	"	"	"	22	374		TS		3-23	WB
22	P 190	P 193	WEOS	EEOS	1724	"	"	"	34	408		TS		3-23	WB
				DAILY TOTAL FOR WELDED SEAM:					803	Carry over to sheet '2'					
				DESTRUCTIVE LENGTH CARRY - OVER:						408					

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-23-07
FUSION SEAM: ✓
EXTRUSION SEAM:
MACHINE NUMBER: #2
REVIEWED BY:
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 408
SHEET NUMBER: 2 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX. START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
1	P 182	P 193	SEOS	NEOS	1729	AG	6.5	735	26	434		TS		3-23	WB
2	P 182	P 193	SEOS	NEOS	1738	"	"	"	10'	444		TS		3-23	WB
3	P 177	P 194	WEOS	EEOS	1746	"	"	"	57	490/11	DS-76	TS		3-23	WB
4	P 182	P 194	SEOS	NEOS	1750	"	"	"	23	34		TS		3-23	WB
5	P 196	P 197	WEOS	EEOS	1806	"	"	"	48	82		TS		3-23	WB
6	P 182	P 192	SEOS	NEOS	1816	"	"	"	22	104		TS		3-23	WB
7	P 192	P 195	EEOS	WEOS	1825	"	"	"	24	128		TS		3-23	WB
8															
9															
10															
11															
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15															
16															
17															
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1013 Total for Sheets (1&2)
DESTRUCTIVE LENGTH CARRY - OVER: 128

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113
PROJECT TITLE: CMS Landfill V Cell 2F
PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-23-07
FUSION SEAM: ✓
EXTRUSION SEAM:
REVIEWED BY:
MACHINE NUMBER: #4
DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 61'
SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER FIRST PANEL	SEAM NUMBER SECOND PANEL	SEAM SECTION START POINT	SEAM SECTION FINISH POINT	APPROX. START TIME	WELDING TECH.	MACHINE SPEED	MACHINE TEMP.	APPROX. LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CQA MONITOR
1	P167	P168	SEOS	NEOS	0945	JG	6	735	44	105		TS		3-23	WB
2	P166	P168	SEOS	NEOS	0950	"	"	"	273	378		TS		3-23	WB
3	P171	P173	EEOS	WEOS	1040	"	"	"	58	436		TS		3-23	WB
4	P173	P174	EEOS	WEOS	1050	"	"	"	59	495/0	DS-72	TS		3-23	WB
5	P175	P176	EEOS	WEOS	1111	"	"	"	65	65		TS		3-23	WB
6	P176	P177	EEOS	WEOS	1125	"	"	"	157	122		TS		3-23	WB
7	P170	P178	SEOS	NEOS	1325	"	"	"	281	403		TS		3-23	WB
8	P181	P182	SEOS	NEOS	1626	"	"	"	118	490/31	DS-75	TS		3-23	WB
9	P185	P186	WEOS	EEOS	1627	"	"	"	68	99		TS		3-23	WB
10	P187	P188	WEOS	EEOS	1710	"	"	"	50	149		TS		3-23	WB
11	P188	P189	SEOS	NEOS	1715	"	"	"	22	171		TS		3-23	WB
12	P187	P189	WEOS	EEOS	1720	"	"	"	18	189		TS		3-23	WB
13	P190	P191	WEOS	EEOS	1732	"	"	"	42	237		TS		3-23	WB
14	P191	P193	WEOS	EEOS	1734	"	"	"	35	266		TS		3-23	WB
15	P194	P195	WEOS	EEOS	1735	"	"	"	72	338		TS		3-23	WB
16	P192	P198	WEOS	EEOS	1807	"	"	"	25	363		TS		3-23	WB
17	P192	P196	EEOS	WEOS	1821	"	"	"	23	386/0	DS-78	TS		3-23	WB
18															
19															
20															
21															
22															

DAILY TOTAL FOR WELDED SEAM: 1310
DESTRUCTIVE LENGTH CARRY - OVER: 0

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF SEAMING: 3-23-07

FUSION SEAM: ✓

EXTRUSION SEAM: ~~✓~~

MACHINE NUMBER: 3

REVIEWED BY: ~~✓~~

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 119'

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		APPROX START TIME	WELDING TECH	MACHINE SPEED	MACHINE TEMP	APPROX LENGTH WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUCTIVE NUMBER	CQA MONITOR INITIALS	REMARKS	NON DESTRUCTIVE	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT										TEST DATE	CQA MONITOR
* 1	P 169	P 170	SEOS	NEOS	0958	RH	6	735	28	147		TS		3-23	WB
2	P 168	P 170	SEOS	NEOS	1007	"	"	"	302	449		TS		3-23	WB
3	P 170	P 173	SEOS	NEOS	1119	"	"	"	22	471		TS		3-23	WB
4	P 170	P 171	SEOS	NEOS	1125	"	"	"	5	476		TS		3-23	WB
5	P 168	P 171	SEOS	NEOS	1126	"	"	"	7	483		TS		3-23	WB
6	P 165	P 168	SEOS	NEOS	1128	"	"	"	15	498/0	DS-73	TS		3-23	WB
7	P 174	P 178	WEOS	EEOS	1316	"	"	"	10	10		TS		3-23	WB
8	P 175	P 178	~~SEOS~~	NEOS	1320	"	"	"	18	28		TS		3-23	WB
9	P 176	P 179	SEOS	NEOS	1327	"	"	"	20	48		TS		3-23	WB
10	P 178	P 180	SEOS	NEOS	1357	"	"	"	32	80		TS		3-23	WB
11	P 179	P 182	SEOS	NEOS	1616	"	"	"	97	177		TS		3-23	WB
12	P 183	P 184	WEOS	EEOS	1648	"	"	"	63	240		TS		3-23	WB
13	P 186	P 187	WEOS	EEOS	1651	"	"	"	69	309		TS		3-23	WB
14	P 188	P 190	WEOS	EEOS	1710	"	"	"	53	362		TS		3-23	WB
15	P 189	P 190	WEOS	EEOS	1717	"	"	"	18'	380		TS		3-23	WB
16	P 191	P 192	WEOS	EEOS	1725	"	"	"	99	479		TS		3-23	WB
17	P 195	P 196	WEOS	EEOS	1748	"	"	"	61	490/50	DS-77	TS		3-23	WB
18	P 197	P 198	WEOS	EEOS	1806	"	"	"	24	74		TS		3-23	WB
19	P 192	P 197	EEOS	WEOS	1816	"	"	"	25	99		TS		3-23	WB
20															
21															
22															
					DAILY TOTAL FOR WELDED SEAM:				968						
					DESTRUCTIVE LENGTH CARRY - OVER:					99					

ATLANTIC COAST CONSULTING, INC

ACC of NORTH CAROLINA, LLC

APPENDIX M
Defect Logs

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 1

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	1/3/4	@ Int	T	3-8-07	TS	1A & 1E the Same	3-8	3-13
B	1/2/3	@ Int	T	"	TS		3-8	3-13
C	1/4/TieIn	@ Int	T	"	TS		3-8	3-13
D	2/3	60' S of NEOS	DS-1	"	TS		3-8	3-13
E	1/3/4	NEOS 1 and 3	DS-2	"	TS	1A & 1E the Same	3-8	3-13
F	4/5/TieIn	@ Int	T	"	TS		3-8	3-13
G	3/4/6	@ Int	T	"	TS		3-8	3-13
H	4/5/6	@ Int	T	"	TS		3-8	3-13
I	6/7	@ High Point on floor	D	"	TS		3-8	3-13
J	3/6	SEOS	DS-3	"	TS		3-8	3-13
K	6/7	90' S of I	DS 4	"	TS		3-8	3-13
M	5/6/7/8	4 Way Int.	T's	"	TS		3-8	3-13
N	5/8/TieIn	@ Int	DS-5	"	TS		3-8	3-13
P	8	@ Crest	D	"	TS		3-8	3-13
Q	8/9/TieIn	@ Int.	T	"	TS		3-8	3-13
R	7/9/10	@ Int	T	"	TS		3-8	3-13
S	8/TieIn	WEOS	DX-1	"	TS		3-8	3-13
T	7/10	45' N of SEOS	DS-6	"	TS		3-8	3-13
V	9/12	SEOS	DS-7	"	TS		3-9	3-13
W	7/8/9	@ Int	T	"	TS		3-8	3-13
X	9/11/12	@ Int	T	"	TS		3-9	3-13

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 2

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	QOA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	12/14	@ High Point on floor	D	3-9-07	TS		3-9	3-13
B	11/12/14	@ Int	T	"	TS		3-9	3-13
C	9/11/Tie In	@ Int	T	"	TS		3-9	3-13
D	10/12/13	@ Int	T	"	TS		3-9	3-13
E	12/14/15	@ Int	DS-8	"	TS		3-9	3-13
F	11/14/Tie In	@ Int	T	"	TS		3-9	3-13
G	14/16/Tie In	@ Int	T	"	TS		3-9	3-13
H	14/Tie In	5' W of EEOS	T	"	TS		3-9	3-13
I	14/16/17	WEOS 16/17	DS-9	"	TS		3-9	3-13
J	15/17	123' S of NEOS	DS 10	"	TS		3-9	3-13
K	16/Tie In	7' W of EEOS	T	"	TS		3-9	3-13
M	14/15/17	@ Int	T	"	TS		3-9	3-13
N	16/17/19	@ Int	T	"	TS		3-9	3-13
P	12/13/15	@ Int	T	"	TS		3-9	3-13
Q	17,19 20	@ Int	T	"	TS		3-9	3-13
R	23 /Tie In	@ Int	T	"	TS		3-9	3-13
S	21 /Tie In	@ Int	T	"	TS		3-9	3-13
T	18 /Tie In	@ Int	T	"	TS		3-9	3-13
V	16 18 Tie	@ Int	T	"	TS		3-9	3-13
W	18/21	@ High Point on floor	D	"	TS		3-9	3-13
X	19/21	41'S of 2W	DS-11	"	TS		3-9	3-13

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 3

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	QC/A MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	Seam	12F S of 2N P17-P19	BO	3-9-07	WB		3-9	3-13
B	22/24	32F S of NEOS	DS-12	3-9-07	TS		3-9	3-13
C	24	N end of Panel	D	3-9-07	WB		3-9	3-13
D	20/22	25F N of SEOS	D	3-9-07	WB		3-10	3-13
E	22/25	6F S of Int 24,25	VL	3-9-07	WB		3-10	3-13
F	22/25	12F N of SEOS	VL	3-9-07	WB		3-10	3-13
G	21/23/24	@ Int	T	3-9-07	WB		3-9	3-13
H	24	NEOP	D	"	WB		3-9	3-13
I	23/24/26	@ Int	DS-14	"	WB		3-10	3-13
J	26/Tie In	10' W of EEOS	T	3-10	TS		3-10	3-13
K	23/26/Tie In	@ Int	T	3-10	TS		3-10	3-13
M	26/28/29	@ Int	T	"	TS		3-10	3-13
N	24/25/27	@ Int	T	"	TS		3-10	3-13
P	22/24/25	@ Int	T	"	TS		3-10	3-13
Q	27/29/30	@ Int	T	"	TS		3-10	3 13
R	28/26	From 4I	DX-2	"	TS		3-10	3-13
S	1/32	SEOS	DS-16	"	TS		3-10	3-13
T	1/31	257' N of SEOS	DS-17	"	TS		3-10	3-13
V	1/31/Tie In	@ Int.	T	"	TS		3-10	3-13
W	31/Tie In	Middle of Seam	D	"	TS		3-10	3-13
X	31/33/Tie In	@ Int	T	"	TS		3-10	3-13

DEFECT TYPES

- BO - FUSION WELDER BURN OUT
- CR - CREASE
- D - INSTALLATION DAMAGE
- DS-# - FUSION WELD DESTRUCTIVE
- DX-# - EXTRUSION WELD DESTRUCTIVE
- EXT - LINER EXTENSION
- FM - FISHMOUTH
- FS - FAILED SEAM LENGTH
- IO - INSUFFICIENT OVERLAP
- MD - MANUFACTURER DAMAGE
- PT - PRESSURE TEST CUT
- SI - SOIL SURFACE IRREGULARITY
- T - THREE PANEL INTERSECTION
- VL - VACUUM TEST LEAK
- WR - WRINKLE
- WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 4

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	19/20/22	@ Int	T	3-9-07	TS		3-10	3-13
B	21/22/24	@ Int	T	"	TS		3-9	3-13
C	19/21/22	@ Int	T	"	TS		3-9	3-13
D	16/18/19	@ Int	T	"	TS		3-9	3-13
E	18/19/21	@ Int	T	"	TS		3-9	3-13
F	18/21/Tie In	@ Int	T	"	TS		3-9	3-13
G	21/23/Tie In	@ Int	T	"	TS		3-9	3-13
H	24/26	42' S of NEOS	DS 15	"	TS		3-10	3-13
I	26/28	47 N of SEOS	DS 15	"	TS		3-10	3-13
J	26/27/24	@ Int	T	"	TS		3-10	3-13
K	26/27/29	@ Int	T	"	TS		3-10	3-13
M	31	72' N of SEOP	D	3-10-07	WB		3-10	3-13
N	1/31/32	@ Int	T	3-10-07	WB		3-10	3-13
P	31	150' N of SEOP	D	"	WB		3-10	3-13
Q	36	6' S of NEOP	D	"	WB		3-10	3-13
R	35/37/Tie In	@ Int	T	"	WB		3-10	3-13
S	33/35/Tie In	@ Int	T	"	WB		3-10	3-13
T	39	50' S of NEOP	D	"	WB		3-10	3-13
V	39/Tie-In	@ Int	T	"	WB		3-12	3-13
W	37/40	85' S of NEOP 40	BO	"	WB		3-10	3-13
X	33/34/36	@ Int	T	"	WB		3-10	3-13

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: 1001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: ~~DA~~

SHEET NUMBER: 5

DEFECT CODE	DEFECT LOCATION SEAM, PANEL OR REPAIR #	DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	31/33/34	@ Int	T	3-10-07	TS		3-10	3-13
B	31/32/34	@ Int	T	"	TS		3-10	3-13
C	31/33	Toe of Slope	DS-18	"	TS		3-10	3-13
D	34/36	100' S of NEOS	WS	"	TS		3-10	3-13
E	36/37/38	@ Int	T	"	TS		3-10	3-13
F	33/36	93' N of SEOS	DS-19	"	TS		3-10	3-13
G	37	Toe of Slope	D	"	TS		3-10	3-13
H	35/37	38' N of SEOS	DS-20	"	TS		3-10	3-13
I	36/37	220' N of SEOS	DS-21	"	TS		3-10	3-13
J	35/36/37	@ Int	T	"	TS		3-10	3-13
K	33/35/36	@ Int	T	"	TS		3-10	3-13
M	40/42	52 ft of SEOS	DS 22	"	TS		3-12	3-13
N	39/40/42	@ Int.	T	"	TS		3-10	3-13
P	37/39/40	@ Int	T	"	TS		3-10	3-13
Q	39/41/42	@ Int	T	"	TS		3-10	3-13
R	37/38/40	@ Int	T	"	TS		3-10	3-13
S	26/28/TieIn	@ Int	T	10-12-07	TS		3-12	3-13
T	28/ /TieIn	@ Int	T	"	TS		3-12	3-13
V	29/30/45	@ Int	T	"	TS		3-13	3-13
W	28/29/	@ Int	T	"	TS		3-12	3-13
X	28/43/44	@ Int	T	"	TS		3-12	3-13

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: 1001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 6

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	QA/QC MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	43/44/46	@ Int	T	3-12-07	TS		3-12	3-13
B	44/46/47	@ Int	T	"	TS		3-12	3-13
C	29/44/45	@ Int	T	"	TS		3-12	3-13
D	44/45/47	@ Int	DS-24	"	TS		3-12	3-13
E	47/49/50	@ Int	T	"	TS		3-12	3-13
F	44/47	40' S of NEOS	DS-25	"	TS		3-12	3-13
G	46/47/49	@ Int	T	"	TS		3-12	3-13
H	49/50/52	@ Int	T	"	TS		3-13	3-13
I	28/T.I.	Middle of Seam	T	"	TS		3-12	3-13
J	43/TI	Middle of Seam/EEOS	T's	"	TS		3-12	3-13
K	46/T.I.	Middle of Seam/EEOS	T's	"	TS		3-12	3-13
M	48/T.I.	" / "	T's	"	TS		3-12	3-13
N	46/48/49	@ Int	T	"	TS		3-12	3-13
P	48/49/51	@ Int	T	"	TS		3-12	3-13
Q	46/49	60' S of NEOS	DS-26	"	TS		3-12	3-13
R	49/51/52	@ Int	T	"	TS		3-12	3-13
S	51/52/54	@ Int	T	"	TS		3-12	3-13
T	49/51	81 S of NEOS	DS-27	"	TS		3-12	3-13
V	53/TI	EEOS	DS-28	"	TS		3-13	3-13
W	52/54/55	@ Int	T	"	TS		3-13	3-13
X	52/55	SEOS	DS-29	"	TS		3-13	3-13

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113 REVIEWED BY:

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 7

DEFECT CODE	DEFECT LOCATION SEAM, PANEL OR REPAIR	DEFECT LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	37/39/Tie In	@ Int	T	3-12-07	TS		3-12	3-13
B	29/44	35's of NEOS	DS-B	"	TS		3-12	3-13
C	44	85' N of SEOP	D	"	WB		3-12	3-13
D	51/Tie In	Middle of Seam	T	"	WB		3-12	3-13
E	53/Tie In	Middle of Seam	T	"	WB		3-12	3-13
F	50/52	6' S of NEOS	BO	"	WB		3-13	3-13
G	52/55	55' N of SEOS	BO	"	WB		3-13	3-13
H	53/56	40' S of NEOS	BO	"	WB		3-12	3-13
I	56/Tie-In	Middle of Seam	T	"	WB		3-13	3-13
J	56/58/Tie In	@ Int	T	"	WB		3-13	3-13
K	58/Tie-In	Middle of Seam	T	"	WB		3-13	3-13
M	56/58/59	@ Int	DS-32	"	WB		3-12	3-13
N	56/59	100' S of NEOS	BO	"	WB		3-13	3-15
P	57/59	90' N of SEOS	BO	"	WB		3-13	3-13
Q	57/59	25' N of SEOS	BO	"	WB		3-13	3-13
R	56/59	65' N of SEOS	BO	"	WB		3-13	3-13
S	61/Tie-In	Middle of Seam	T	"	WB		3-13	3-14
T	51/53/54	@ Int	T	"	WB		3-12	3-13
V	59/61/62	@ Int	T	"	WB		3-13	3-13
W	60/62	80' N of SEOS	BO	"	WB		3-13	3-13
X	62/63/65	@ Int	T	3-13-07	WB		3-13	3-14

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 8

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	43 / Tie In	Taken from 6J	DX-3	3-12-07	TS		3-12	3-13
B	54/55/57	@ Int	T	"	TS		3-13	3-13
C	53/54/56	@ Int	DS-30	"	TS		3-12	3-13
D	54/56	32' N of SEOS	DS-31	"	TS		3-13	3-13
E	51/53/TI	@ Int	T	"	TS		3-12	3-13
F	57/60	78' N of SEOS	DS 33	"	TS		3-13	3-13
G	57/59/60	@ Int.	T	"	TS		3-13	3-13
H	59/60/61	@ Int.	T	"	TS		3-13	3-13
I	59/62	41 N of SEOS	DS 34	"	TS		3-13	3-13
J	58/56/57	@ Int	T	"	TS		3-12	3-13
K	56/57/59	@ Int	T	"	TS		3-13	3-13
M	60/62/63	@ Int	T	3-13-07	TS		3-13	3-14
N	58/61/T.I.	@ Int	T	"	TS		3-13	3-13
P	61/64/T.I.	@ Int	T	"	TS		3-13	3-14
Q	61/64	121' S of NEOS	DS-35	"	TS		3-13	3-14
R	58/59/61	@ Int	T	"	TS		3-13	3-13
S	62/65	187' S of NEOS	DS 36	"	TS		3-13	3-14
T	64/66/67	@ Int	T	"	TS		3-13	3-14
V	64/67	221' S of NEOS	DS-37	"	TS		3-13	3-14
W	65/67/68	@ Int	T	"	TS		3-13	3-14
X	61/62/64	@ Int	T	"	TS		3-13	3-13

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113 REVIEWED BY: [signature]

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 9

DEFECT CODE	DEFECT LOCATION: SEAM / PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	64/Tie-In	Middle of seam	T	3-13-07	WB		3-13	3-14
B	67/64/65	@ Int	T	"	WB		3-13	3-13
C	66/Tie-In	Middle of seam	T	"	WB		3-13	3-15
D	69	35' S of NEOP	D	"	WB		3-13	3-14
E	65/68	46' N of SEOS	BO	"	WB		3-13	3-14
F	65/68	35' N of SEOS	BO	"	WB		3-13	3-14
G	65/68	20' N of SEOS	BO	"	WB		3-13	3-14
H	69/Tie-In	6' W of EEOS	D	"	WB		3-14	3-15
I	67/70	66' S of NEOS	BO	"	WB		3-13	3-14
J	67/70	27' N of SEOS	BO	"	WB		3-13	3-14
K	69/71/Tie In	@ Int	T	"	WB		3-14	3-15
M	74	47' S of NEOP	D	"	WB		3-13	3-15
N	71/74/Tie-In	@ Int	T	"	WB		3-14	3-15
P	75	50' S of NEOP	D	"	WB		3-13	3-15
Q	74/75/Tie-In	@ Int	T	"	WB		3-14	3-15
R	75/76/Tie-In	@ Int	T	"	WB		3-14	3-15
S	76/77/Tie-In	@ Int	T	"	WB		3-14	3-15
T	77/Tie-In	6' W of EEOS	D	"	WB	Covered by 11B	—	—
V	74/75	140' S of NEOS	BO	"	WB		3-14	3-15
W	23/24/26	@ Int - From 3I	DX-2B	3-14-07	WB		3-14	3-15
X	26/28	43' N of SEOS - From 3R	DX-2A	"	WB		3-14	3-15

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 10

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	QOA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	64/66/TI.	@ Int	T	3-13-07	TS		3-13	3-14
B	64/65/67	@ Int	T	"	TS		3-13	3-14
C	61/64	Taken from 8Q	DX-4	"	TS		3-13	3-14
D	67/69/70	@ Int	T	"	TS		3-13	3-14
E	67/70	158' S of NE03	DS-38	"	TS		3-13	3-15
F	67/68/70	@ Int	T	"	TS		3-13	3-14
G	69/72	94' S of NE05	DS-39	"	TS		3-13	3-14
H	70/72/73	@ Int	T	"	TS		3-14	3-17
I	69/70/72	@ Int	T	"	TS		3-13	3-14
J	71/72/74	@ Int	T	"	TS		3-13	3-14
K	69/71/72	@ Int	T	"	TS		3-13	3-14
M	66/67/69	@ Int	T	"	TS		3-13	3-14
N	74/75	112' S of NE05	DS 40	"	TS		3-14	3-15
P	75/76	44 S of NE03	DS 41	"	TS		3-14	3-17
Q	76/77	32' S of NE05	DS 42	"	TS		3-14	3-17
R	77/79/80	@ Int	T	3-14-07	TS		3-14	3-15
S	77/78/79	@ Int	T	"	TS		3-14	3-15
T	76/77/78	@ Int	T	"	TS		3-14	3-15
V	92/93	17' E of of NE05	DS-43	"	TS		3-14	3-15
W	91/92	NE05	DS-44	"	TS		3-14	3-15
X	66/69	@ TI	T	"	TS		3-14	3-15

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: 1001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 11

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	77/80/81/82	@ Int	T	3-14-07	WB		3-14	3-15
B	77/82/Tie-In	@ Int	T	"	WB		3-14	3-15
C	82/Tie-In	4' E of WEOS	T	"	WB		3-14	3-15
D	82/84/Tie In	@ Int	T	"	WB		3-14	3-15
E	84/Tie In	5' E of WEOS	T	"	WB		3-14	3-15
F	84/86/Tie In	@ Int	T	"	WB	Covered by 116	—	—
G	84/85/86	@ Int	T	"	WB		3-14	3-15
H	86/Tie In	EEOS	Ext	"	WB		3-14	3-15
I	73/105	4' W of EEOS	BO	"	WB		3-14	3-17
J	70/73/105	@ Int	T	"	WB		3-14	3-17
K	67/70	75' N of SEOS	BO	"	WB		3-15	3-15
M	73/104/107	@ Int	T	"	WB		3-15	3-17
N	73/105/107	@ Int	T	"	WB		3-15	3-17
P	105/107/108	@ Int	T	"	WB		3-15	3-17
Q	105/108/109	@ Int	T	"	WB		3-15	3-17
R	105/109/110	@ Int	T	"	WB		3-15	3-17
S	105/106/110/111	@ Int	T	"	WB		3-15	3-17
T	106/111/112	@ Int	T	"	WB		3-15	3-17
V	70/105/106	@ Int	T	"	WB		3-15	3-17
W	117	40' of NEOP	D	3-15-07	WB		3-15	3-17
X	41/Tie-In	@ Int 4'E of WEOS	T	"	WB		3-15	3-17

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 12

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	QQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	101/102	37 E of WEOS	DS-45	3-14-07	TS		3-15	3-17
B	84/86	Taken from 11G	DX-5	"	TS		3-14	3-17
C	72/104	SEOS	DS-46	"	TS		3-14	3-15
D	83/84/85	@ Int	T	"	TS		3-14	3-15
E	82/83/84	@ Int	T	"	TS		3-14	3-15
F	81/82/83	@ Int	T	"	TS		3-14	3-15
G	76/78/87	@ Int	T	"	TS		3-14	3-15
H	76/87/88	@ Int	T	"	TS		3-14	3-15
I	76/88/89	@ 90	T	"	TS		3-14	3-15
J	75/76/90	@ Int	T	"	TS		3-14	3-15
K	112/113	WEOS	DS 47	"	TS		3-15	3-17
M	89/90/91	@ Int	T	"	TS		3-14	3-15
N	75/90/91	@ Int	T	"	TS		3-14	3-15
P	74/75/92	@ Int	T	"	TS		3-14	3-15
Q	74/92/93	@ Int	T	"	TS		3-14	3-15
R	74/93/94	@ Int	T	"	TS		3-14	3-15
S	74/94/95	@ Int	T	"	TS		3-14	3-15
T	74/75/96	@ Int	T	"	TS		3-14	3-15
V	74/96/97	@ Int	T	"	TS		3-14	3-15
W	74/97/98	@ Int	T	"	TS		3-14	3-15
X	98/100	Both Ends of Seam	T	"	TS	Covers Seam 98/100	3-14	3-15

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 13

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	QOA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	72/100	Both Ends of Seam	T's	3-14-07	TS		3-14	3-15
B	72/74	15' N of SEOS	D	"	TS		3-14	3-15
C	72/99/101	@ Int	T	"	TS		3-14	3-15
D	72/101/102	@ Int	T	"	TS		3-14	3-15
E	72/102/103	@ Int	T	"	TS		3-14	3-15
F	42/115	51' N of SEOS	DS-48	3-15-07	TS		3-15	3-17
G	41/114	24' N of SEOS	DS 49	"	TS		3-15	3-17
H	41/114/115	@ Int	T	"	TS		3-15	3-17
I	41/42/115	@ Int	T	"	TS		3-15	3-17
J	114/115/117	@ Int	T	"	TS		3-15	3-17
K	116	NEOP	D	"	TS		3-15	3-17
M	115/116/118	@ Int	T	"	TS		3-15	3-17
N	115/117/118	@ Int	T	"	TS		3-15	3-17
P	115/117	50' N of SEOS	DS-50	"	TS		3-15	3-17
Q	39/41	@ TI	T	"	TS		3-15	3-17
R	117/119	86' S of NEOS	DS-51	"	TS		3-15	3-17
S	23/24/26	Taken from 3I	DX2B2	"	TS	Capped All of 3I	3-15	3-20
T	122/124	70' N of SEOS	DS 52	"	TS		3-15	3-17
V	117/119	from 13R	DX-6	"	TS		3-15	3-17
W	26/28/29	@ Int	DX2B3	"	TS	Capped All of 3M	3-17	3-20
X	24/26	from 4H	DX2B4	3-19-07	TS	Capped 4H	3-19	3-20

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 14

DEFECT CODE	DEFECT LOCATION: SEAM/PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	41/114/Tie In	@ Int	T	3-15-07	WB		3-15	3-17
B	114/Tie In	4'E of WEOS	T	"	WB		3-15	3-17
C	114/117/Tie In	@ Int	T	"	WB		3-15	3-17
D	117/Tie In	5'E of WEOS	T	"	WB		3-15	3-17
E	119	49' S of NEOP	D	"	WB		3-15	3-17
F	116/118/120	@ Int	T	"	WB		3-15	3-17
G	117/118/120	@ Int	T	"	WB		3-15	3-17
H	117/119/120	@ Int	T	"	WB		3-15	3-17
I	115/117	57' S of NEOS	BO	"	WB		3-15	3-17
J	121	44' S of NEOP	D	"	WB		3-15	3-17
K	123	47' S of NEOP	D	"	WB		3-15	3-17
M	121/122/124	@ Int	T	"	WB		3-15	3-17
N	119/121/122	@ Int	T	"	WB		3-15	3-17
P	121/123/124	@ Int	T	"	WB		3-15	3-17
Q	119/120/122	@ Int	T	"	WB		3-15	3-17
R	122	@ NEOP-middle	D	"	WB		3-15	3-17
S	117/119/Tie In	@ Int	T	"	WB		3-15	3-17
T	119/Tie-In	5'E of WEOS	T	"	WB		3-15	3-17
V	119/121/Tie In	@ Int	T	"	WB		3-15	3-17
W	121/Tie In	Middle of Seam	T	"	WB		3-15	3-17
X	121/D3/Tie In	@ Int	T	"	WB		3-15	3-17

DEFECT TYPES

BO -	FUSION WELDER BURN OUT
CR -	CREASE
D -	INSTALLATION DAMAGE
DS-# -	FUSION WELD DESTRUCTIVE
DX-# -	EXTRUSION WELD DESTRUCTIVE
EXT -	LINER EXTENSION
FM -	FISHMOUTH
FS -	FAILED SEAM LENGTH
IO -	INSUFFICIENT OVERLAP
MD -	MANUFACTURER DAMAGE
PT -	PRESSURE TEST CUT
SI -	SOIL SURFACE IRREGULARITY
T -	THREE PANEL INTERSECTION
VL -	VACUUM TEST LEAK
WR -	WRINKLE
WS -	WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 15

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	123/Tie In	Middle of Seam	T	3-15-07	WB		3-20	3-24
B	123/124/126	@ Int	T	3-20-07	TS		3-20	3-24
C	123/126	SEOS	DS-53	"	TS		3-20	3-24
D	125/126/128	@ Int	T	"	TS		3-20	3-24
E	125/128	15' NoG SEOS	DS 54	"	TS		3-20	3-24
F	125/127/128	@ Int	T	"	TS		3-20	3-24
G	127/128/129	@ Int	DS 56	"	TS		3-20	3-24
H	123/125	@ T.I.	T	"	TS		3-20	3-24
I	125/127	@ T.I.	T's	"	TS		3-20	3-24
J	127/129	@ TI	T's	"	TS		3-20	3-24
K	126/128	13' N of SEOS	DS-55	"	TS		3-20	3-24
M	131	NEOP toe of Slope	D	"	TS		3-20	3 24
N	129/131	@ TI	T	"	TS		3-20	3-24
P	128/129/130	@ Int	T	"	TS		3-20	3-24
Q	129/130/132	@ Int	T	"	TS		3-20	3-24
R	129/132	NEOS	DS 57	"	TS		3-20	3-24
S	131/133	N. Slope	DS-58	"	TS		3-20	3-24
T	129/132	Taken from 15R	DX-7	"	TS		3-20	3-24
V	135/137	34' N of SEOS	DS 59	"	TS		3-20	3-24
W	138/140	152' N of SEOS	DS-60	"	TS		3-21	3-24
X	137/139	@ T.I.	DS-61	"	TS		3-22	3-24

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 16

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	124/126	62' N of SEOS	BO	3-21-07	WB		3-20	3-24
B	124/126	131' N of SEOS	BO	"	WB		3-20	3-24
C	124/126	192' N of SEOS	BO	"	WB		3-20	3-24
D	124/126	228' N of SEOS	BO	"	WB		3-20	3-24
E	129	42' S of NEOP	D	"	WB		3-20	3-24
F	133	48' S of NEOP	D	"	WB		3-20	3-24
G	131/133/134	@ Int	T	"	WB		3-20	3-24
H	131/132/134	@ Int	T	"	WB		3-20	3-24
I	131/Tie In	Middle of seam	T	"	WB		3-20	3-24
J	131/133/Tie In	@ Int	T	"	WB		3-20	3-24
K	133/Tie In	Middle of seam	T	"	WB		3-20	3-24
M	135	48' S of NEOP	D	"	WB		3-20	3-24
N	135/137/138	@ Int	T	"	WB		3-20	3-24
P	133/135/136	@ Int	T	"	WB		3-20	3-24
Q	133/134/136	@ Int	T	"	WB		3-20	3-24
R	135/136/137	@ Int	T	"	WB		3-20	3-24
S	135/Tie-In	Middle of seam	T	"	WB		3-20	3-24
T	137/Tie In	Middle of seam	T	"	WB		3-20	3-24
V	137/139/140	@ Int	T	"	WB		3-20	3-24
W	137/138/140	@ Int	T	"	WB		3-21	3-24
X	139/141/Tie In	@ Int	T	"	WB		3-22	3-24

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 17

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	135/137	@ T.I.	T	3-20-07	TS		3-20	3-24
B	133/135	@ TI	T	"	TS		3-20	3-24
C	133	Crest of Berm	D	"	TS		3-20	3-24
D	140/142	92' N of SEOS	DS-62	"	TS		3-21	3-24
E	139/141/142	@ Int	T	"	TS		3-21	3-24
F	141/143	@ T.I.	T	3-22-07	TS		3-22	3-24
G	141/143/144	@ Int	T	"	TS		3-22	3-24
H	143/146	SEOS	DS-63	"	TS		3-22	3-24
I	141/142/144	@ Int	T	"	TS		3-22	3-24
J	144/146	31' N of SEOS	DS-64	"	TS		3-22	3-24
K	145/146/148	@ Int	T	"	TS		3-22	3-24
M	148/152	41' N of SEOS	DS-65	"	TS		3-22	3-24
N	150/TI	EEOS	DS-66	"	TS		3-22	3-24
P	150/151/152/154	@ Int.	T	"	TS		3-22	3-24
Q	149/155	NEOS	DS-67	"	TS		3-22	3-24
R	151/151A	@ TI	T	"	TS		3-22	3-24
S	154/159	32' N of SEOS	DS-68	"	TS		3-22	3-24
T	163	25' S of NEOP	D	"	TS		3-23	3-24
V	163	5' S of NEOP	D	"	TS		3-23	3-24
W	151A/156/157	@ Int.	T	"	"		3-22	3-24
X	156	@ Anchor Trench	T/Anchor Trench	"	"		3-22	3-24

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 18

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	139/140/141	@ Int	T	3-20-07	WB		3-21-07	3-24
B	143/145/Tie-In	@ Int	T	3-22-07	WB		3-22	3-24
C	145/Tie In	@ Int	T	"	WB		3-22	3-24
D	143/145/146	@ Int	T	"	WB		3-22	3-24
E	148	60' S of NEOP	D	"	WB		3-22	3-24
F	146/147/148	@ Int	T	"	WB		3-22	3-24
G	147/149/153	@ Int	T	"	WB		3-22	3-24
H	148/152/153	@ Int	T	"	WB		3-22	3-24
I	148/150/152	@ Int	T	"	WB		3-22	3-24
J	150/Tie In	Middle of seam	T	"	WB		3-22	3-24
K	151/Tie In	Middle of seam	T	"	WB		3-22	3-24
M	150/151/Tie In	@ Int	T	"	WB		3-22	3-24
N	151/154/156/157	@ Int	Ts	"	WB		3-22	3-24
P	156/Tie In	3' W of EEOS	T	"	WB		3-22	3-24
Q	154/157/159	@ Int	T	"	WB		3-22	3-24
R	157/159/163	@ Int	T	"	WB		3-23	3-24
S	156/157/158/163	@ Int	Ts	"	WB		3-23	3-24
T	158/153/166	@ Int	T	"	WB		3-23	3-24
V	163/166/167	@ Int	T	"	WB		3-23	3-24
W	167	3' S of NEOP	D	"	WB		3-23	3-24
X	158/161/164	@ Int	T	"	WB		3-23	3-24

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113 REVIEWED BY: [signature]

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 19

DEFECT CODE	DEFECT LOCATION SEAM, PANEL OR REPAIR	DEFECT LOCATION LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	152/153/154	@ Int	T	3-22-07	TS		3-22	3-24
B	149/155	NEOS taken from 17Q	DX-8	"	TS		3-22	3-24
C	161/164	25' E of WEOS	DS 69	"	TS		3-23	3-24
D	163/167	18 N' of SEOS	DS-70	"	TS		3-23	3-24
E	149/153/155	@ Int	T	"	TS		3-22	3-24
F	147/148/153	@ Int	T	"	TS		3-22	3-24
G	163/166	159' N of SEOS	DS-71	"	TS		3-23	3-24
H	168/169/170	@ Int	T	3-23-07	TS		3-23	3-24
I	167/168/169	@ Int	T	"	TS		3-23	3-24
J	166/167/168	@ Int	T	"	TS		3-23	3-24
K	173 174	WEOS	DS-72	"	TS		3-23	3-24
M	165/168	@ NEOS	DS-73	"	TS		3-23	3-24
N	170/174/178	@ Int	T	"	TS		3-23	3-24
P	174/175/178	@ Int	T	"	TS		3-23	3-24
Q	175/176/178/179	@ Int's	T's	"	TS		3-23	3-24
R	178/181	23' N of SEOS	DS 74	"	TS		3-23	3-24
S	181/182	31 S of NEOS	DS-75	"	TS		3-24	3-24
T	180/181/182	@ Int	T	"	TS		3-23	3-24
V	179/180/182	@ Int	T	"	TS		3-23	3-24
W	176/177/179/182	@ Int's	T's	"	TS		3-23	3-24
X	177/194	#' @ Crest	DS-76	"	TS		3-24	3-24

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 20

DEFECT CODE	DEFECT LOCATION SEAM / PANEL OR REPAIR	DEFECT LOCATION LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	158/162/164	@ Int	T	3-22-07	WB		3-23	3-24
B	160/165/166	@ Int	T	"	WB	Covered by 19M	—	—
C	165/171/172	@ Int	T	3-23-07	WB		3-23	3-24
D	165/168/171	@ Int	T	"	WB		3-23	3-24
E	168/170/171	@ Int	T	"	WB		3-23	3-24
F	170/171/173	@ Int	T	"	WB		3-23	3-24
G	170/173/174	@ Int	T	"	WB		3-23	3-24
H	178/180/181	@ Int	T	"	WB		3-23	3-24
I	178/179/180	@ Int	T	"	WB		3-23	3-24
J	182/191	17' N of SEOS	BO	"	WB		3-23	3-24
K	177/182/194	@ Int	T	"	WB		3-23	3-24
M	182/192/194/195	@ Int	T/seam	"	WB	Covers Seam P 182/195	3-23	3-24
N	182/191/192	@ Int	T	"	WB		3-23	3-24
P	182/191/193	@ Int	T	"	WB		3-23	3-24
Q	182/190/193	@ Int	T	"	WB		3-23	3-24
R	182/188/190	@ Int	T	"	WB		3-23	3-24
S	182/187/188	@ Int	T	"	WB		3-23	3-24
T	187/188/189	@ Int	T	"	WB		3-23	3-24
V	182/186/187	@ Int	T	"	WB		3-23	3-24
W	182/185/186	@ Int	T	"	WB		3-23	3-24
X	188/189/190	@ Int	T	"	WB		3-23	3-24

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

GEOMEMBRANE DEFECT LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

REVIEWED BY: [signature]

SHEET NUMBER: 21

DEFECT CODE	DEFECT LOCATION: SEAM, PANEL OR REPAIR	DEFECT LOCATION: LOCATION DESCRIPTION	DEFECT TYPE	DATE LOGGED	CQA MONITOR INITIALS	REMARKS	REPAIR DATE	TEST DATE
A	195/196	11' E of WEOS	DS-77	3-23-07	TS		3-24	3-24
B	192/196	WEOS	DS 78	"	TS		3-24	3-24
C	192/197/198	@ Int	T	"	TS		3-24	3-24
D	182/183/184	@ Int	T	"	TS		3-23	3-24
E	182/184/185	@ Int	T	"	TS		3-23	3-24
F	182/185/186	Taken from 20 W	DX-9	"	TS		3-24	3-24
G	192/195/196	@ Int	T	"	TS		3-23	3-24
H	190/191/193	@ Int	T	"	TS		3-23	3-24
I	197/198	@ Anchor trench	T	"	TS		3-24	3-24
J	195/192	NE Corner of Sump	WR	"	TS		3-24	3-24
K								
M								
N								
P								
Q								
R								
S								
T								
V								
W								
X								

DEFECT TYPES

BO - FUSION WELDER BURN OUT
CR - CREASE
D - INSTALLATION DAMAGE
DS-# - FUSION WELD DESTRUCTIVE
DX-# - EXTRUSION WELD DESTRUCTIVE
EXT - LINER EXTENSION
FM - FISHMOUTH
FS - FAILED SEAM LENGTH
IO - INSUFFICIENT OVERLAP
MD - MANUFACTURER DAMAGE
PT - PRESSURE TEST CUT
SI - SOIL SURFACE IRREGULARITY
T - THREE PANEL INTERSECTION
VL - VACUUM TEST LEAK
WR - WRINKLE
WS - WELDER RESTART

ATLANTIC COAST CONSULTING, INC

ACC of NORTH CAROLINA, LLC

APPENDIX N
Repair Logs

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-8-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY:

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 1 of 1

MACHINE NUMBER: G #1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 0

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	COA MONITOR INITIALS	REMARKS
1	1D	1315	P	KC	2x4	12	12		TS	
2	1B	1400	P	"	2x2	8	20		TS	
3	1E	1420	P	"	2x5	14	34		TS	Covers 1A
4	1C	1430	P	"	2x2	8	42		TS	
5	1F	1450	P	"	2x4	12	54		TS	
6	1H	1500	P	"	2x2	8	62		TS	
7	1G	1525	P	"	2x2	8	70		TS	
8	1J	1545	P	"	2x4	12	82		TS	
9	1K	1600	P	"	2x4	12	94		TS	
10	1I	1615	P	"	2x2	8	102		TS	
11	1M	1635	P	"	2x4	12	114		TS	
12	1N	1700	P	"	2x7	18	132/0	DX-1	TS	
13	1P	1703	P	"	1x1	4	4		TS	
14	1S	1720	P	"	2x3	10	14		TS	
15	1Q	1715	P	"	2x5	14	28		TS	
16	1W	1810	P	"	2x2	8	36		TS	
17	1R	1815	P	"	2x2	8	44		TS	
18	1T	1820	P	"	2x4	12	56		TS	
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 188

DESTRUCTIVE LENGTH CARRY - OVER: 56

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: 1001.113 DATE OF REPAIR: 3-9-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY:

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 1 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 56'

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	CQA MONITOR INITIALS	REMARKS
1	2D	0935	P	KC	2x3	10	66		TS	
2	1V	0945	P	"	2x6	16	82		TS	
3	1X	1000	P	"	2x2	8	90		TS	
4	2B	1015	P	"	2x2	8	98		TS	
5	2H	1035	P	"	2x2	8	106		TS	
6	2F	1050	P	"	2x7	18	124		TS	
7	2C	1100	P	"	2x5	14	138		TS	
8	2K	1105	P	"	1x2	6	144		TS	
9	2A	1120	P	"	1x1	4	148		TS	
10	2I	1130	P	"	2x4	12	160		TS	
11	2E	1148	P	"	2x5	14	174		TS	
12	2M	1155	P	"	2x2	8	182		TS	
13	2G	1330	P	"	1x2	6	188		TS	
14	2J	1400	P	"	2x4	12	200		TS	
15	2P	1410	P	"	2x2	8	208		TS	
16	2Q	1515	P	"	2x3	8	216		TS	
17	3A	1525	P	"	2x4	12	228		TS	
18	2N	1530	P	"	2x2	8	236		TS	
19	2X	1535	P	"	2x4	12	248		TS	
20	4D	1610	P	"	2x2	8	256		TS	
21	2V	1615	P	"	2x2	8	264		TS	
22	2T	1620	P	"	1x1	4	268		TS	
23	4F	1623	P	"	2x2	8	276		TS	
24	2S	1640	P	"	2x2	8	284		TS	
25	4G	1645	P	"	2x3	10	294		TS	
26	2R	1653	P	"	2x2	8	302		TS	
27	4E	1700	P	"	2x2	8	310		TS	
28	3G	1715	P	"	2x2	8	318		TS	
29	3C	1720	P		1x1	4	322		TS	
30	3H	1721	P		1x1	4	326		TS	

DAILY TOTAL FOR WELDED SEAM: 270 carry over to Sheet 2

DESTRUCTIVE LENGTH CARRY - OVER: 326 carry over to Sheet 2

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-9-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: [signature]

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 2 of 2

MACHINE NUMBER: G #1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 326

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	QAA MONITOR INITIALS	REMARKS
1	2W	1730	P	KC	2x2	8	334		TB	
2										
3	4C	1739	P	"	2x3	10	344		TB	
4	4B	1744	P	"	2x2	8	352		TB	
5	3B	1759	P	"	2x4	12	364		TB	
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
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25										
26										
27										
28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 308

DESTRUCTIVE LENGTH CARRY - OVER: 364

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-10-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: [illegible]

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 1 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 364'

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	4A	0805	P	KC	1x2	6	370		TS	
2	3P	0830	P	"	2x2	8	378		TS	3P
3	3E	0835	P	"	2x1	6	384		TS	
4	3D	0840	P	"	1x2	6	390		TS	
5	3F	0845	P	"	1x1	4	394		TS	
6	3N	0850	P	"	1x2	6	400		TS	
7	3Q	0855	P	"	2x3	10	410		TS	
8	4K	0900	P	"	2x3	10	420		TS	
9	4J	0905	P	"	2x2	8	428		TS	
10	4H	0910	P	"	2x4	12	440		TS	
11	3M	0915	P	"	1x2	6	446		TS	
12	3I	0920	P	"	2x7	18	464		TS	
13	4I	0925	P	"	2x4	12	476 / 0	DX-2	TS	
14	3R	0945	P	"	2x4	12	12		TS	
15	3K	0952	P	"	2x3	10	22		TS	
16	3J	0958	P	"	2x2	8	30		TS	
17	4P	1025	P	"	1x2	6	36		TS	
18	3S	1035	P	"	2x4	12	48		TS	
19	4N	1055	P	"	3x4	14	62		TS	
20	4M	1100	P	"	(1x1)+(1x1)	8	70		TS	
21	5B	1128	P	"	3x5	16	86		TS	
22	5A	1130	P	"	1x2	6	92		TS	
23	3T	1345	P	"	2x4	12	104		TS	
24	5C	1405	P	"	2x4	12	116		TS	
25	3V	1415	P	"	3x4	14	130		TS	
26	3W	1420	P	"	2x3	10	140		TS	
27	3X	1425	P	"	2x4	12	152		TS	
28	5G	1459	P	"	1x1	4	156		TS	
29	5K	1500	P	"	2x6	16	172		TS	
30	5F	1505	P	"	2x4	12	184		TS	

DAILY TOTAL FOR WELDED SEAM: (1x1)+(1x1) 296 Carry over to page '2'

DESTRUCTIVE LENGTH CARRY - OVER: 184 Carry Over to page '2'

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-10-07

REVIEWED BY: [signature]

SHEET NUMBER: 2 of 2

MACHINE NUMBER: G# 1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 184

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	CQA MONITOR INITIALS	REMARKS
1	4Q	1510	P	KC	1x1	4	188		TS	
2	5J	1515	P	"	2x2	8	196		TS	
3	5H	1520	P	"	2x4	12	208		TS	
4	4R	1545	P	"	2x5	14	222		TS	
5	4S	1600	P	"	3x3	12	234		TS	
6	5I	1620	P	"	2x4	12	246		TS	
7	4T	1640	P	"	1x2	6	252		TS	
8	5Q	1650	P	"	2x2	8	260		TS	
9	4X	1655	P	"	2x2	8	268		TS	
10	5P	1700	P	"	2x3	10	278		TS	
11	5N	1705	P	"	2x2	8	286		TS	
12	4W	1709	P	"	1x2	6	292		TS	
13	5R	1715	P	"	2x2	8	300		TS	
14	5E	1721	P	"	2x2	8	308		TS	
15	5D	1723	P	"	2x2	8	316		TS	
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 432 = total Pages 1 & 2

DESTRUCTIVE LENGTH CARRY - OVER: 316

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-12-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY:

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 1 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 316

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	CQA MONITOR INITIALS	REMARKS
1	5M	0815	P	KC	2x4	12	328		TS	
2	4V	0840	P	"	1x1	4	332		TS	
3	7A	0845	P	"	2x7	18	350		TS	
4	5X	1040	P	"	1x1	4	354		TS	
5	5W	1135	P	"	1x2	6	360		TS	
6	6A	1135	P	"	1x2	6	366		TS	
7	7B	1138	P	"	2x4	12	378		TS	
8	6B	1140	P	"	2x2	8	386		TS	
9	6F	1345	P	"	2x4	12	398		TS	
10	7C	1350	P	"	1x2	6	404		TS	
11	6D	1400	P	"	2x4	12	416		TS	
12	6C	1405	P	"	2x2	8	424		TS	
13	6E	1410	P	"	2x2	8	432		TS	
14	6G	1415	P	"	2x2	8	440		TS	
15	6Q	1425	P	"	2x4	12	452		TS	
16	6N	1435	P	"	2x2	8	460		TS	
17	6P	1440	P	"	2x2	8	468		TS	
18	5S	1500	P	"	2x2	8	476		TS	
19	6I	1515	P	"	2x2	8	484		TS	
20	5T	1520	P	"	2x2	8	492		TS	
21	6J	1525	P	"	(2x4)+(3x5)	28	492/28	DX-3	TS	
22	6K	1545	P	"	(2x2)+(2x2)	16	44		TS	
23	8A	1600	P	"	2x4	12	56		TS	
24	6M	1635	P	"	(2x3)+(2x2)	18	74		TS	
25	7D	1645	P	"	2x3	10	84		TS	
26	8E	1650	P	"	2x2	8	92		TS	
27	7E	1705	P	"	1x2	6	98		TS	
28	7H	1730	P	"	2x4	12	110		TS	
29	7M	1740	P	"	2x7	18	128		TS	
30	8C	1745	P	"	2x6	16	144		TS	

DAILY TOTAL FOR WELDED SEAM: 320 Carry over to Page 2

DESTRUCTIVE LENGTH CARRY - OVER: 144 Carry to page 2

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSTRUCTION, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-12-07

REVIEWED BY: [signature]

SHEET NUMBER: 2 of 2

MACHINE NUMBER: G# 1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 144

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	7T	1800	P	KC	2x3	10	154		TS	
2	6T	1805	P	"	2x3	10	164		TS	
3	6S	1820	P	"	2x2	8	172		TS	
4	6R	1825	P	"	2x2	8	180		TS	
5	8J	1835	P	"	2x4	12	192		TS	
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
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29										
30										

DAILY TOTAL FOR WELDED SEAM: 368 total, Pages 1 & 2

DESTRUCTIVE LENGTH CARRY - OVER: 192

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-13-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 192

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1										
2	6X	0910	P		2x4	12	204		TS	
3	7G	0915	P	"	2x2	8	212		TS	
4	5V	0920	P	"	1x2	6	218		TS	
5	6H	0925	P	"	2x2	8	226		TS	
6	7F	0927	P	"	2x2	8	234		TS	
7	6W	0930	P	"	2x2	8	242		TS	
8	8B	0935	P	"	2x2	8	250		TS	
9	8M	0940	P	"	2x4	12	262		TS	
10	8F	0945	P	"	2x3	10	272		TS	
11	7W	0950	P	"	2x2	8	280		TS	
12	8G	0955	P	"	2x2	8	288		TS	
13	8H	1000	P	"	2x3	10	298		TS	
14	7Q	1005	P	"	1x2	6	304		TS	
15	8I	1010	P	"	2x4	12	316		TS	
16	7P	1020	P	"	2x2	8	324		TS	
17	8K	1025	P	"	2x2	8	332		TS	8K
18	8D	1030	P	"	2x4	12	344		TS	
19	7R	1040	P	"	1x2	6	350		TS	
20	7V	1045	P	"	2x2	8	358		TS	
21	7N	1050	P	"	1x2	6	364		TS	
22	8R	1058	P	"	1x2	6	370		TS	
23	6V	1115	P	"	2x7	18	388		TS	
24	7I	1120	P	"	1x2	6	394		TS	
25	7J	1125	P	"	2x3	10	404		TS	
26	7K	1130	P	"	2x2	8	412		TS	
27	8N	1135	P	"	2x2	8	420		TS	
28	7S	1140	P	"	1x1	4	424		TS	
29	8P	1145	P	"	2x3	10	434		TS	
30	9A	1150	P	"	3x4	14	448		TS	

DAILY TOTAL FOR WELDED SEAM: 256

Carry over to Page '2'

DESTRUCTIVE LENGTH CARRY - OVER: 448

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: 1001.113 DATE OF REPAIR: 3-13-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: [signature]

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 2 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 448

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	10 A	1300	P	KC	2x2	8	456		TS	
2	9 C	1310	P	"	2x2	8	464		TS	
3	8 Q	1320	P	"	2x4	12	476 / 0	DX-4	TS	
4	8 T	1325	P	"	1x3	8	8		TS	
5	10 C	1350	P	"	2x4	12	20		TS	
6	8 X	1355	P	"	2x2	8	28		TS	
7	9 B	1410	P	"	3x3	12	40		TS	
8	10 B	1415	P	"	2x2	8	48		TS	
9	8 V	1420	P	"	2x4	12	60		TS	
10	8 W	1430	P	"	2x2	8	68		TS	
11	9 E	1455	P	"	1x2	6	74		TS	
12	9 F	1500	P	"	2x2	8	82		TS	
13	9 G	1505	P	"	2x3	10	92		TS	
14	7 X	1510	P	"	2x2	8	100		TS	
15	8 S	1525	P	"	2x4	12	112		TS	
16	10 F	1535	P	"	2x4	12	124		TS	
17	9 J	1540	P	"	1x1	4	128		TS	
18	10 E	1550	P[5]	"	(2x4)+(2x3)	22	150		TS	
19	9 I	1555	P	"	2x2	8	158		TS	
20	10 D	1620	P	"	2x2	8	166		TS	
21	10 I	1635	P	"	2x4	12	178		TS	
22	10 M	1655	P	"	2x2	8	186		TS	
23	10 G	1705	P	"	2x4	12	198		TS	
24	10 K	1715	P	"	2x2	8	206		TS	
25	9 D	1720	P	"	2x2	8	214		TS	
26	10 J	1725	P	"	2x3	10	224		TS	
27	9 M	1730	P	"	1x1	4	228		TS	
28	9 P	1735	P	"	1x1	4	232		TS	
29										
30										

DAILY TOTAL FOR WELDED SEAM: 516 total pages (1 & 2)

DESTRUCTIVE LENGTH CARRY - OVER: 232

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-14-07

REVIEWED BY: [illegible]

SHEET NUMBER: 1 of 2

MACHINE NUMBER: G# 1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 232'

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	9W	0850	C	KC	2x5	14	246	DX 2B	TS	3I
2	9X	0855	C	"	4x7	22	268	DX 2A	TS	4I & 3R
3	10N	0915	P	"	2x4	12	280		TS	
4	9V	0920	P	"	1x1	4	284		TS	
5	10P	1000	P	"	2x4	12	296		TS	
6	10Q	1010	P	"	2x4	12	308		TS	
7	9S	1120	P	"	3x8	22	330		TS	
8	9R	1125	P	"	2x4	12	342		TS	
9	9Q	1130	P	"	2x5	14	356		TS	
10	9N	1400	P	"	2x7	18	374		TS	
11	9K	1405	P	"	3x6	18	392		TS	
12	9H	1410	P	"	2x7	18	410		TS	
13	10X	1415	P	"	2x2	8	418		TS	
14	11B	1430	P	"	3x7	20	438		TS	Covers 9T
15	11C	1435	P	"	2x2	8	446		TS	
16	11D	1440	P	"	2x3	10	456		TS	
17	11E	1445	P	"	2x2	8	464		TS	Covers 11I
18	11G	1450	P	"	2x8	20	484/0	DX-5	TS	
19	11H	1455	P	"	2x3	10	10		TS	
20	12B	1515	P	"	2x4	12	22		TS	
21	12D	1525	P	"	2x3	10	32		TS	
22	12E	1530	P	"	2x4	12	44		TS	
23	12F	1535	P	"	2x2	8	52		TS	
24	11A	1545	P	"	2x4	12	64		TS	
25	10R	1555	P	"	1x2	6	70		TS	
26	10S	1600	P	"	2x2	8	78		TS	
27	10T	1605	P	"	2x4	12	90		TS	
28	12G	1610	P	"	1x2	6	96		TS	
29	12H	1615	P	"	2x2	8	104		TS	
30	12I	1630	P	"	(3x3)+(1x2)	18	122		TS	

DAILY TOTAL FOR WELDED SEAM: 374 Carry over to page '2'

DESTRUCTIVE LENGTH CARRY - OVER: 122 Carry over to page '2'

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-14-07

REVIEWED BY: [illegible]

SHEET NUMBER: 2 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 122

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	12 J	16 35	P	KC	2x2	8	130		TS	
2	12 N	16 40	P	"	2x2	8	138		TS	
3	12 M	16 45	P	"	1x2	6	144		TS	
4	10 W	16 55	P	"	2x5	14	158		TS	
5	12 P	17 00	P	"	2x2	8	166		TS	
6	12 Q	17 10	P	"	1x2	6	172		TS	
7	10 V	17 20	P	"	2x4	12	184		TS	
8	12 R	17 25	P	"	2x2	8	192		TS	
9	12 S	17 30	P	"	1x2	6	198		TS	
10	12 T	17 35	P	"	1x2	6	204		TS	
11	12 V	17 40	P	"	1x2	6	210		TS	
12	12 W	17 50	P	"	1x2	6	216		TS	
13	12 X	18 00	P	"	(1x2)+(1x2)	12	228		TS	
14	13 A	18 10	P[5]	"	(1x2)+(1x2)	12	240		TS	
15	13 B	18 20	P	"	2x5	14	254		TS	
16	13 C	18 25	P	"	2x2	8	262		TS	
17	13 D	18 30	P	"	1x2	6	268		TS	
18	13 E	18 35	P	"	1x1	4	272		TS	
19	12 C	16 40	P[5]	"	(1x2)+(2x5)	20	292		TS	
20	10 H	16 45	P	"	2x2	8	300		TS	
21	11 J	16 50	P	"	2x3	10	310		TS	
22	11 I	16 55	P	"	1x2	6	316		TS	
23										
24										
25										
26										
27										
28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 568

Total for pages (1 & 2)

DESTRUCTIVE LENGTH CARRY - OVER: 316

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-15-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: ~~TD~~

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 1 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 316

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	CQA MONITOR INITIALS	REMARKS
1	12 K	0830	P	KC	2x4	12	328		TS	
2	11 T	0835	P	"	1x2	6	334		TS	
3	11 V	0840	P	"	2x2	8	342		TS	
4	11 S	0845	P	"	2x5	14	356		TS	
5	11 R	0850	P	"	2x2	8	364		TS	
6	11 Q	0855	P	"	2x2	8	372		TS	
7	11 P	0900	P	"	2x2	8	380		TS	
8	11 N	0905	P	"	2x2	8	388		TS	
9	11 M	0910	P	"	1x2	6	394		TS	
10	12 A	0915	P	"	2x4	12	406		TS	
11	13 Q	1145	P	"	2x2	8	414		TS	
12	11 X	1150	P	"	2x2	8	422		TS	
13	14 A	1155	P	"	2x3	10	432		TS	
14	14 B	1205	P	"	2x2	8	440		TS	
15	14 C	1210	P	"	2x2	8	448		TS	
16	14 D	1215	P	"	1x2	6	454		TS	
17	11 K	1425	P	"	2x2	8	462		TS	
18	11 W	1435	P	"	1x1	4	466		TS	
19	14 E	1440	P	"	1x1	4	470		TS	
20	14 J	1445	P	"	1x2	6	476		TS	
21	13 R	1500	P	"	2x4	12	488/0	DX-6	TS	
22	13 V	1510	P	"	2x4	12	12		TS	
23	13 G	1515	P	"	2x4	12	24		TS	
24	13 H	1520	P	"	2x3	10	34		TS	
25	13 J	1525	P	"	2x2	8	42		TS	
26	14 S	1600	P	"	2x2	8	50		TS	
27	14 T	1605	P	"	2x2	8	58		TS	
28	14 V	1610	P	"	2x3	10	68		TS	
29	14 W	1615	P	"	2x4	12	80		TS	
30	14 X	1620	P	"	1x2	6	86		TS	

DAILY TOTAL FOR WELDED SEAM: 258 Carry over to page two

DESTRUCTIVE LENGTH CARRY - OVER: 86

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-15-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: [signature]

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 2 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 86

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH'S INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	13I	1425	P	KC	2x2	8	94		TS	
2	14I	1630	P	"	2x2	8	102		TS	
3	14P	1635	P	"	2x3	10	112		TS	
4	14N	1645	P	"	2x4	12	124		TS	
5	14R	1655	P	"	1x1	4	128		TS	
6	14M	1700	P	"	2x2	8	136		TS	
7	14Q	1715	P	"	2x2	8	144		TS	
8	14H	1725	P	"	2x3	10	154		TS	
9	13P	1735	P	"	2x4	12	166		TS	
10	13N	1755	P	"	2x2	8	174		TS	
11	14G	1800	P	"	2x2	8	180		TS	
12	13T	1810	P	"	2x4	12	194		TS	
13	14F	1815	P	"	2x2	8	202		TS	
14	13K	1820	P	"	1x1	4	206		TS	
15	13M	1825	P	"	2x3	10	216		TS	
16	13F	1830	P	"	2x4	12	228		TS	
17	13S	1855	P/C	"	3x10	26	254		TS	
18	14K	1900	P	"	1x2	6	260		TS	
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 432 Total for pages 1 & 2

DESTRUCTIVE LENGTH CARRY - OVER: 260

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-17-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 760'

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	CQA MONITOR INITIALS	REMARKS
1	13W	1410	P/C	KC	3x3	12	272		TS	Capped 3M
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 12

DESTRUCTIVE LENGTH CARRY - OVER: 272

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-19-07

REVIEWED BY: ~~DB~~

SHEET NUMBER: 1 of 1

MACHINE NUMBER: 6# 1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 272

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	13X	1410	P/C	KC	3x5	16	288		TS	Capped 4H
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 16

DESTRUCTIVE LENGTH CARRY - OVER: 288

272
16

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: 1001.113 DATE OF REPAIR: 3-20-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: ~~DT~~

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 1 of 2

MACHINE NUMBER: G # 1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 288

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	15C	1110	P	KC	2x6	16	304		TS	
2	15E	1125	P	KC	2x4	12	316		TS	
3	15F	1135	P	"	2x2	8	324		TS	
4	15A	1155	P	"	2x3	10	334		TS	
5	15H	1200	P	"	2x2	8	342		TS	
6	15I	1340	P	"	(1x2)+(2x3)	16	358		TS	
7	15J	1350	P	"	(2x2)+(2x2)	16	374		TS	
8	15G	1405	P	"	2x5	14	388		TS	
9	15D	1420	P	"	2x3	10	398		TS	
10	15B	1425	P	"	2x2	8	406		TS	
11	16D	1430	P	"	2x2	8	414		TS	
12	16C	1435	P	"	1x2	6	420		TS	
13	16B	1445	P	"	2x4	12	432		TS	
14	16A	1500	P	"	2x3	10	442		TS	
15	15K	1505	P	"	2x4	12	454		TS	
16	15P	1510	P	"	3x3	12	466		TS	
17	15Q	1515	P	"	1x2	6	472		TS	
18	15R	1530	P	"	2x5	14	486/0	DX 7	TS	
19	16H	1535	P	"	1x2	6	6		TS	
20	15T	1540	P	"	2x4	12	18		TS	
21	16G	1555	P	"	2x3	10	28		TS	
22	15M	1600	P	"	1x1	4	32		TS	
23	16E	1605	P	"	1x1	4	36		TS	
24	16F	1610	P	"	1x1	4	40		TS	
25	15S	1620	P	"	2x4	12	52		TS	
26	15N	1625	P	"	(2x2)+(2x2)	16	68		TS	
27	16I	1630	P	"	2x2	8	76		TS	
28	16J	1635	P	"	2x2	8	84		TS	
29	17C	1640	P	"	1x1	4	88		TS	
30	16K	1645	P	"	1x2	6	94		TS	

DAILY TOTAL FOR WELDED SEAM: 292 Carry over to Sheet '2'

DESTRUCTIVE LENGTH CARRY - OVER: 94 Carry over to sheet '2'

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: 1001.113 DATE OF REPAIR: 3-20-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: [signature]

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 2 of 2

MACHINE NUMBER: GT #1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 94

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	CQA MONITOR INITIALS	REMARKS
1	17B	1655	P	KC	2x2	8	102		TS	
2	16S	1700	P	"	2x2	8	110		TS	
3	17A	1705	P	"	2x2	8	118		TS	
4	16T	1710	P	"	(2x2)+(2x4)	20	138		TS	
5	16M	1715	P	"	1x1	4	142		TS	
6	16P	1725	P	"	2x2	8	150		TS	
7	16R	1730	P	"	2x2	8	158		TS	
8	16Q	1735	P	"	1x2	6	164		TS	
9	16N	1740	P	"	2x2	8	172		TS	
10	15V	1758	P	"	2x4	12	184		TS	
11	16V	1805	P	"	2x3	10	194		TS	
12										
13										
14										
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DAILY TOTAL FOR WELDED SEAM: 392' total pages '1 & 2'

DESTRUCTIVE LENGTH CARRY - OVER: 194

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-21-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

MACHINE NUMBER: G #1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 194'

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	COA MONITOR INITIALS	REMARKS
1	17D	0740	P	KC	2x4	12	206		TS	
2	15W	0745	P	"	2x4	12	218		TS	
3	16W	0810	P	"	2x2	8	226		TS	
4	18A	0830	P	"	2x3	10	236		TS	
5	17E	0840	P	"	2x2	8	244		TS	
6										
7										
8										
9										
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30										

DAILY TOTAL FOR WELDED SEAM: 50'

DESTRUCTIVE LENGTH CARRY - OVER: 244'

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-22-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: [signature]

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 1 of 2

MACHINE NUMBER: G# 1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 244'

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	COA MONITOR INITIALS	REMARKS
1	15X	0910	P	KC	3x5	16	260		TS	
2	16X	1020	P	"	3x4	14	274		TS	
3	17F	1030	P	"	2x5	14	288		TS	
4	18B	1100	P	"	2x6	16	304		TS	
5	18C	1110	P	"	1x2	6	310		TS	
6	17I	1135	P	"	2x2	8	318		TS	
7	17G	1140	P	"	2x3	10	328		TS	
8	17H	1145	P	"	2x6	16	344		TS	
9	18D	1150	P	"	2x2	8	352		TS	
10	19K	1315	P	"	2x3	10	362		TS	
11	18E	1330	P	"	1x1	4	366		TS	
12	17N	1500	P	"	3x5	16	382		TS	
13	18J	1505	P	"	2x2	8	390		TS	
14	18M	1510	P	"	2x4	12	402		TS	
15	18K	1515	P	"	1x2	6	408		TS	
16	17R	1520	P	"	1x2	6	414		TS	
17	18I	1530	P	"	2x3	10	424		TS	
18	17P	1550	P	"	2x5	14	438		TS	
19	18N	1600	P	"	2x2	8	446		TS	
20	17W	1610	P	"	1x2	6	452		TS	
21	18P	1615	P	"	(1x1)+(2x2)	12	464		TS	
22	17X	1625	P	"	2x8	20	484		TS	
23	19A	1710	P	"	1x2	6	490		TS	
24	17Q	1715	P	"	2x4	12	490 / 12	DX-8	TS	
25	19B	1725	P	"	2x4	12	24		TS	
26	18G	1730	P	"	2x2	8	32		TS	
27	19E	1735	P	"	1x2	6	38		TS	
28	19F	1740	P	"	1x2	6	44		TS	
29	18F	1750	P	"	2x3	10	54		TS	
30	17J	1755	P	"	2x4	12	66		TS	

DAILY TOTAL FOR WELDED SEAM: 312 Carry over to page '2'

DESTRUCTIVE LENGTH CARRY - OVER: 66

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-22-07

REVIEWED BY: [illegible]

SHEET NUMBER: 2 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 66

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	COA MONITOR INITIALS	REMARKS
1	17 S	18 05	P	~~KxQ~~	2x4	12	78		TS	
2	18 H	18 10	P	KC	2x3	10	88		TS	
3	17 M	18 15	P	"	2x4	12	100		TS	
4	18 Q	18 20	P	"	2x3	10	110		TS	
5										
6										
7										
8										
9										
10										
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DAILY TOTAL FOR WELDED SEAM: 356

Total - pages 1 & 2' 110

DESTRUCTIVE LENGTH CARRY - OVER:

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-23-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY: [signature]

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 1 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 110'

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	18R	0855	P	KC	3x3	12	122		TS	
2	19G	0905	P	"	2x4	12	134		TS	
3	17T	0910	P	"	(1x1)+(1x1)	8	142		TS	
4	18S	0915	P	"	2x2	8	150		TS	
5	17V	0920	P	"	(1x1)+(1x1)	8	158		TS	
6	18T	0935	P	"	2x8	20	178		TS	
7	18X	0945	P	"	2x2	8	186		TS	
8	19C	0950	P	"	2x4	12	198		TS	
9	20A	0955	P	"	2x3	10	208		TS	
10	18V	1020	P	"	2x3	10	218		TS	
11	18W	1025	P	"	(2x2)+(1x2)	14	232		TS	
12	19J	1030	P	"	1x2	6	238		TS	
13	19I	1050	P	"	2x5	14	252		TS	
14	19H	1055	P	"	2x2	8	260		TS	
15	19D	1105	P	"	2x4	12	272		TS	
16	20C	1140	P	"	2x4	12	284		TS	
17	19K	1150	P	"	2x4	12	296		TS	
18	19M	1355	P	"	3x10	26	322		TS	Covers 20B
19	20D	1405	P	"	3x3	12	334		TS	
20	20E	1415	P	"	(1x1)+(1x2)	10	344		TS	
21	20F	1420	P	"	1x2	6	350		TS	
22	20G	1425	P	"	2x3	10	360		TS	
23	19P	1430	P	"	2x3	10	370		TS	
24	19N	1435	P	"	2x2	8	378		TS	
25	19Q	1445	P	"	2x5	14	392		TS	
26	20I	1455	P	"	2x2	8	400		TS	
27	20H	1500	P	"	2x2	8	408		TS	
28	19R	1520	P	"	2x4	12	420		TS	
29	19W	1730	P	"	2x3	10	430		TS	
30	19V	1745	P	"	2x2	8	438		TS	

DAILY TOTAL FOR WELDED SEAM: 328 Carry over to sheet '2'

DESTRUCTIVE LENGTH CARRY - OVER: 438

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: I001.113 DATE OF REPAIR: 3-23-07

PROJECT TITLE: CMS Landfill V Cell 2F REVIEWED BY:

PROJECT LOCATION: Charlotte, North Carolina SHEET NUMBER: 2 of 2

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 438

LINE NUMBER	DEFECT CODE	APPROX. TIME OF WELD	TYPE OF REPAIR	QC TECH. INITIALS	APPROX. DIMENSION OF WELD	APPROX. LINEAR FT. WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC. NUMBER	CQA MONITOR INITIALS	REMARKS
1	19T	1755	P	KC	2X3	10	448	1	TS	
2	21D	1800	P	"	1X2	6	454		TS	
3	21E	1805	P	"	2X2	8	462		TS	
4	20W	1810	P	"	2X4	12	474/0	DX-9	TS	
5	20V	1820	P	"	2X2	8	8		TS	
6	20S	1825	P	"	2X2	8	16		TS	
7	20T	1830	P	"	2X2	8	24		TS	
8	20X	1835	P	"	1X2	6	30		TS	
9	20R	1840	P	"	2X2	8	38		TS	
10	20Q	1845	P	"	2X2	8	46		TS	
11	20P	1850	P	"	2X3	10	56		TS	
12	21H	1851	P	"	1X2	6	62		TS	
13	20J	1858	P	"	1X1	4	66		TS	
14	20N	1905	P	"	2X5	14	80		TS	
15	20M	1910	P	"	2X5	14	94		TS	
16	20K	1913	P	"	2X2	8	102		TS	
17	21G	1918	P5	"	(2X2)+(2X2)+6	22	124		TS	
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 160

DESTRUCTIVE LENGTH CARRY - OVER: 124

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR LOG

PROJECT NUMBER: 1001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF REPAIR: 3-24-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

MACHINE NUMBER: G#1

DESTRUCTIVE CARRY - OVER FROM PREVIOUS LOG: 124'

LINE NUMBER	DEFECT CODE	APPROX TIME OF WELD	TYPE OF REPAIR	QC TECH INITIALS	APPROX DIMENSION OF WELD	APPROX LINEAR FT WELDED	LENGTH FROM PREVIOUS DESTRUCTIVE	DESTRUC NUMBER	COA MONITOR INITIALS	REMARKS
1	19S	0815	P	KC	2x4	12	136		TS	
2	21F	0830	P	"	2x4	12	148		TS	
3	19X	0845	P	"	2x4	12	160		TS	
4	21A	0900	P	"	2x4	12	172		TS	
5	21B	0910	P	"	2x7	18	190		TS	
6	21C	0915	P	"	3x3	12	202		TS	
7	21J	0945	P/RS	"	(1x1)+(1x1)+(1x1)+18	30	232		TS	
8	21I	1010	CAP	"	18	18	250/0	DX 10	TS	
9										
10										
11										
12										
13										
14										
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28										
29										
30										

DAILY TOTAL FOR WELDED SEAM: 126

DESTRUCTIVE LENGTH CARRY - OVER: 0

REPAIR TYPES : P = PATCH, C = CAP, G&W = GRIND & WELD, RS = RECONSTRUCTED SEAM

ATLANTIC COAST CONSULTING, INC

ACC of NORTH CAROLINA, LLC

APPENDIX O

Seam Pressure Test Logs

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-8-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH. INITIALS	DURATION		PRESSURE		RESULTS	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE	PASS OR FAIL	NO	YES		
1	P3	P4	WEOS	EEOS	SN	1115	1120	30	30	P		✓	TB	
2	P1	P2	WEOS	EEOS	SN	1125	1130	30	30	P		✓	WB	
3	P4	Tie-In	WEOS	EEOS	SN	1250	1255	30	30	P		✓	WB	
4	P1	Tie-In	EEOS	WEOS	SN	1251	1256	30	30	P		✓	WB	
5	P2	P3	SEOS	NEOS	SN	1305	1310	30	30	P		✓	WB	
6	P1	P3	NEOS	SEOS	SN	1313	1318	30	30	P		✓	WB	
7	P5	Tie-In	WEOS	EEOS	SN	1355	1400	30	30	P		✓	WB	
8	P5	P6	WEOS	EEOS	SN	1405	1410	30	30	P		✓	WB	
9	P1	P4	NEOS	SEOS	SN	1418	1423	30	30	P		✓	WB	
10	P4	P5	NEOS	SEOS	SN	1427	1432	30	30	P		✓	WB	
11	P4	P6	NEOS	SEOS	SN	1450	1455	30	30	P		✓	WB	
12	P3	P6	SEOS	NEOS	SN	1518	1523	30	30	P		✓	WB	
13	P7	P8	WEOS	EEOS	SN	1544	1549	30	30	P		✓	WB	
14	P6	P7	NEOS	II	SN	1545	1550	30	30	P	✓		WB	
15	P6	P7	SEOS	II	SN	1604	1609	30	30	P		✓	WB	
16	P8	Tie-In	EEOS	WEOS	SN	1615	1620	30	30	P		✓	WB	
17	P5	P8	NEOS	SEOS	SN	1621	1626	30	30	P		✓	WB	
18	P9	Tie-In	EEOS	WEOS	SN	1629	1634	30	30	P		✓	WB	
19	P9	P10	WEOS	EEOS	SN	1638	1643	30	30	P		✓	WB	
20	P7	P9	NEOS	SEOS	SN	1657	1702	30	30	P		✓	WB	
21	P7	P10	SEOS	NEOS	SN	1719	1724	30	30	P		✓	WB	
22	P8	P9	NEOS	SEOS	SN	1728	1733	30	30	P		✓	WB	
23	P11	P12	WEOS	EEOS	SN	1747	1752	30	29	P		✓	WB	
24	P10	P12	SEOS	NEOS	SN	1811	1816	30	30	P		✓	WB	
25	P10	P13	NEOS	SEOS	SN	1814	1819	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-8-07

REVIEWED BY: [signature]

SHEET NUMBER: 2 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P12	P13	WEOS	EEOS	SN	1830	1835	30	30	P		✓	WB	
2	P9	P12	NEOS	SEOS	SN	1839	1844	30	30	P		✓	WB	
3														
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-9-07

REVIEWED BY:

SHEET NUMBER: 1 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P9	P11	SEOS	NEOS	SN	0722	0727	30	30	P		✓	WB	
2	P12	P14	2A	NEOS	SN	0956	1001	30	30	P	✓		WB	
3	P12	P14	SEOS	2A	SN	1000	1005	30	30	P		✓	WB	
4	P16	Tie In W	WEOS	EEOS	SN	1015	1020	30	30	P		✓	WB	
5	P14	Tie-In E	2H	EEOS	SN	1016	1021	30	30	P	✓		WB	
6	P14	Tie-In W	WEOS	2H	SN	1018	1023	30	30	P		✓	WB	
7	P11	P14	NEOS	SEOS	SN	1021	1026	30	30	P		✓	WB	
8	P11	Tie-IN	2F	WEOS	SN	1026	1031	30	30	P		✓	WB	
9	P12	P15	NEOS	SEOS	SN	1035	1040	30	30	P		✓	WB	
10	P14	P15	WEOS	EEOS	SN	1036	1041	30	30	P		✓	WB	
11	P13	P15	NEOS	SEOS	SN	1043	1048	30	30	P		✓	WB	
12	P16	P17	WEOS	EEOS	SN	1056	1101	30	30	P		✓	WB	
13	P14	P17	SEOS	NEOS	SN	1107	1112	30	30	P		✓	WB	
14	P14	P16	NEOS	SEOS	SN	1121	1126	30	30	P		✓	WB	
15	P15	P17	SEOS	NEOS	SN	1139	1144	30	30	P		✓	WB	
16	P21	Tie-In E	WEOS	EEOS	SN	1409	1414	30	29	P		✓	WB	
17	P21	Tie-In W	WEOS	EEOS	SN	1412	1417	30	30	P		✓	WB	
18	P18	Tie-In E	WEOS	EEOS	SN	1414	1419	30	29	P		✓	WB	
19	P18	Tie In-W	WEOS	EEOS	SN	1420	1425	30	30	P		✓	WB	
20	P16	Tie In-E	EEOS	2K	SN	1421	1426	30	30	P		✓	WB	
21	P16	P19	NEOS	SEOS	SN	1426	1431	30	30	P		✓	WB	
22	P18	P19	WEOS	EEOS	SN	1432	1437	30	30	P		✓	WB	
23	P16	P18	SEOS	NEOS	SN	1436	1441	30	30	P		✓	WB	
24	P23	Tie In W	EEOS	EEOS	SN	1439	1444	30	28	P		✓	WB	
25	P23	Tie In E	WEOS	EEOS	SN	1447	1452	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-9-07

REVIEWED BY:

SHEET NUMBER: 2 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1 -	P17	P19	3A	NEOS	SN	1454	1459	30	30	P	✓		WB	
2 -	P17	P19	3A	SEOS	SN	1456	1501	30	30	P		✓	WB	
3 -	P21	P22	EEOS	WEOS	SN	1502	1507	30	30	P		✓	WB	
4 -	P17	P20	NEOS	SEOS	SN	1507	1512	30	30	P		✓	WB	
5 -	P19	P20	EEOS	WEOS	SN	1508	1513	30	30	P		✓	WB	
6 -	P19	P21	SEOS	NEOS	SN	1515	1520	30	30	P		✓	WB	
7 -	P18	P21	NEOS	SEOS	SN	1528	1533	30	30	P		✓	WB	
8 -	P23	P24	WEOS	EEOS	SN	1537	1542	30	30	P		✓	WB	
9 -	P22	P24	SEOS	NEOS	SN	1545	1550	30	30	P		✓	WB	
10 -	P24	P25	WEOS	EEOS	SN	1552	1557	30	29	P		✓	WB	
11 -	P19	P22	SEOS	NEOS	SN	1610	1615	30	30	P		✓	WB	
12 -	P20	P22	NEOS	3D	SN	1616	1621	30	30	P	✓		WB	
13 -	P20	P22	3D	SEOS	SN	1617	1622	30	30	P		✓	WB	
14 -	P22	P25	NEOS	3E	SN	1625	1630	30	30	P	✓		WB	
15 -	P22	P25	3E	3F	SN	1628	1633	30	30	P	✓		WB	
16 -	P22	P25	3F	SEOS	SN	1630	1635	30	30	P		✓	WB	
17 -	P21	P24	NEOS	SEOS	SN	1639	1644	30	30	P		✓	WB	
18 -	P19	P21	NEOS	SEOS	SN	1641	1646	30	30	P		✓	WB	
19 -	P21	P23	SEOS	NEOS	SN	1646	1651	30	30	P		✓	WB	
20 -	P26	TieIN	3J	EEOS	SN	1654	1659	30	30	P	✓		WB	
21 -	P26	TieIN	WEOS	3J	SN	1655	1700	30	30	P		✓	WB	
22 -	P26	P27	WEOS	EEOS	SN	1705	1710	30	30	P		✓	WB	
23 -	P23	P26	SEOS	NEOS	SN	1722	1727	30	30	P		✓	WB	
24 -	P24	P26	SEOS	NEOS	SN	1729	1734	30	30	P		✓	WB	
25 -	P28	P29	WEOS	EEOS	SN	1737	1742	30	28	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-9-07

REVIEWED BY: [signature]

SHEET NUMBER: 3 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION			DURATION		PRESSURE		RESULTS	SEAM COMPLETED		CQA	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT	QC TECH INITIALS	START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE	PASS OR FAIL	NO	YES	MONITOR INITIALS	REMARKS
1	P26	P28	SEOS	NEOS	SN	1742	1747	30	30	P		✓	WB	
2	P24	P27	SEOS	NEOS	SN	1803	1808	30	30	P		✓	WB	
3	P25	P27	SEOS	NEOS	SN	1812	1817	30	30	P		✓	WB	
4	P29	P30	WEOS	EEOS	SN	1819	1824	30	30	P		✓	WB	
5	P27	P30	NEOS	SEOS	SN	1822	1827	30	30	P		✓	WB	
6	P26	P29	SEOS	NEOS	SN	1828	1833	30	30	P		✓	WB	
7	P27	P29	SEOS	NEOS	SN	1833	1838	30	30	P		✓	WB	
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-10-07

REVIEWED BY:

SHEET NUMBER: 1 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P1	P32	NEOS	SEOS	SN	1000	1005	30	30	P		✓	WB	
2	P31	P32	EEOS	4P	SN	1011	1016	30	30	P	✓		WB	
3	P31	P32	WEOS	4P	SN	1012	1017	30	29	P		✓	WB	
4	P2	P32	NEOS	SEOS	SN	1015	1020	30	30	P		✓	WB	
5	P31	Tie-IN	3W	EEOS	SN	1030	1035	30	30	P	✓		WB	
6	P31	Tie-IN	WEOS	3W	SN	1039	1044	30	30	P		✓	WB	
7	P33	Tie IN	WEOS	EEOS	SN	1040	1045	30	29	P		✓	WB	
8	P1	P31	NEOS	SEOS	SN	1045	1050	30	30	P		✓	WB	
9	P32	P34	NEOS	SEOS	SN	1055	1100	30	30	P		✓	WB	
10	P33	P34	WEOS	EEOS	SN	1103	1108	30	29	P		✓	WB	
11	P31	P34	NEOS	SEOS	SN	1116	1121	30	30	P		✓	WB	
12	P31	P33	SEOS	NEOS	SN	1148	1153	30	30	P		✓	WB	
13	P34	P36	5D	SEOS	SN	1341	1346	30	30	P	✓		WB	
14	P34	P36	NEOS	5D	SN	1350	1355	30	30	P		✓	WB	
15	P35	Tie-IN	WEOS	EEOS	SN	1355	1400	30	30	P		✓	WB	
16	P37	Tie-IN	EEOS	WEOS	SN	1407	1412	30	30	P		✓	WB	
17	P33	P36	SEOS	NEOS	SN	1417	1422	30	30	P		✓	WB	
18	P36	P38	NEOS	SEOS	SN	1418	1423	30	30	P		✓	WB	
19	P37	P38	EEOS	WEOS	SN	1419	1424	30	30	P		✓	WB	
20	P35	P36	WEOS	EEOS	SN	1427	1432	30	29	P		✓	WB	
21	P33	P35	NEOS	SEOS	SN	1440	1445	30	30	P		✓	WB	
22	P35	P37	NEOS	SEOS	SN	1450	1455	30	30	P		✓	WB	
23	P36	P37	NEOS	SEOS	SN	1459	1504	30	30	P		✓	WB	
24	P39	Tie-IN	4V	EEOS	SN	1512	1517	30	30	P		✓	WB	
25	P39	P40	EEOS	WEOS	SN	1525	1530	30	30	P		✓	WB	

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-10-07

REVIEWED BY: [signature]

SHEET NUMBER: 2 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P37	P39	NEOS	SEOS	SN	1550	1555	30	30	P		✓	WB	
2	P39	P41	NEOS	SEOS	SN	1554	1559	30	30	P		✓	WB	
3	P38	P40	NEOS	SEOS	SN	1607	1612	30	30	P		✓	WB	
4	P37	P40	4W	SEOS	SN	1610	1615	30	30	P	✓		WB	
5	P39	P42	SEOS	NEOS	SN	1617	1622	30	30	P		✓	WB	
6	P41	P42	EEOS	WEOS	SN	1623	1628	30	30	P		✓	WB	
7	P37	P40	NEOS	4W	SN	1629	1634	30	30	P		✓	WB	
8	P40	P42	NEOS	SEOS	SN	1639	1644	30	30	P		✓	WB	
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-12-07

REVIEWED BY:

SHEET NUMBER: 1 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P28	P43	SEOS	NEOS	SN	0959	1004	30	30	P		✓	WB	
2	P43	P44	WEOS	EEOS	SN	1001	1006	30	30	P		✓	WB	
3	P43	P46	SEOS	NEOS	SN	1032	1037	30	30	P		✓	WB	
4	P46	P47	WEOS	EEOS	SN	1037	1042	30	30	P		✓	WB	
5	P44	P45	WEOS	EEOS	SN	1048	1053	30	30	P		✓	WB	
6	P29	P44	SEOS	NEOS	SN	1103	1108	30	30	P		✓	WB	
7	P29	P45	NEOS	SEOS	SN	1104	1109	30	30	P		✓	WB	
8	P30	P45	NEOS	SEOS	SN	1105	1110	30	30	P		✓	WB	
9	P49	P50	WEOS	EEOS	SN	1112	1117	30	30	P		✓	WB	
10	P44	P46	SEOS	NEOS	SN	1121	1126	30	30	P		✓	WB	
11	P48	P49	WEOS	EEOS	SN	1130	1135	30	30	P		✓	WB	
12	P45	P47	NEOS	SEOS	SN	1143	1148	30	30	P		✓	WB	
13	P44	P47	SEOS	NEOS	SN	1144	1149	30	30	P		✓	WB	
14	P47	P50	NEOS	SEOS	SN	1243	1248	30	30	P		✓	WB	
15	P47	P49	NEOS	SEOS	SN	1248	1253	30	30	P		✓	WB	
16	P46	P48	SEOS	NEOS	SN	1254	1259	30	30	P		✓	WB	
17	P28	Tie-In	6I	WEOS	SN	1303	1308	30	30	P	✓		WB	
18	P28	Tie-In	EEOS	6I	SN	1304	1309	30	30	P		✓	WB	
19	P43	Tie-In	6J	WEOS	SN	1305	1310	30	30	P	✓		WB	
20	P43	Tie-In	EEOS	6J	SN	1306	1311	30	30	P		✓	WB	
21	P46	Tie-In	6K	WEOS	SN	1315	1320	30	30	P	✓		WB	
22	P46	Tie-In	EEOS	6K	SN	1316	1321	30	30	P		✓	WB	
23	P48	Tie-In	6M	WEOS	SN	1323	1328	30	30	P	✓		WB	
24	P48	Tie-In	EEOS	6M	SN	1325	1330	30	30	P		✓	WB	
25	P51	Tie-In	7D	WEOS	SN	1327	1332	30	30		✓		WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-12-07

REVIEWED BY: [signature]

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P51	Tie-In	EEOS	7D	SN	1338	1340	30	30	P		✓	WB	
2	P53	Tie-In	7E	WEOS	SN	1340	1345	30	30	P	✓		WB	
3	P53	Tie-In	EEOS	7E	SN	1345	1350	30	30	P		✓	WB	
4	P48	P51	SEOS	NEOS	SN	1353	1358	30	30	P		✓	WB	
5	P46	P49	SEOS	NEOS	SN	1356	1401	30	30	P		✓	WB	
6	P51	P52	WEOS	EEOS	SN	1357	1402	30	30	P		✓	WB	
7	P51	P53	SEOS	NEOS	SN	1406	1411	30	30	P		✓	WB	
8	P53	P54	EEOS	WEOS	SN	1418	1423	30	30	P		✓	WB	
9	P49	P51	NEOS	SEOS	SN	1424	1429	30	30	P		✓	WB	
10	P52	P54	SEOS	NEOS	SN	1435	1440	30	30	P		✓	WB	
11	P54	P55	WEOS	EEOS	SN	1445	1450	30	30	P		✓	WB	
12	P49	P52	SEOS	NEOS	SN	1448	1453	30	30	P		✓	WB	
13	P50	P52	NEOS	7F	SN	1450	1455	30	30	P	✓		WB	
14	P50	P52	7F	SEOS	SN	1500	1505	30	29	P		✓	WB	
15	P52	P55	7G	NEOS	SN	1502	1507	30	30	P	✓		WB	
16	P52	P55	7G	SEOS	SN	1509	1514	30	30	P		✓	WB	
17	P51	P54	SEOS	NEOS	SN	1512	1517	30	29	P		✓	WB	
18	P53	P56	NEOS	7H	SN	1543	1548	30	30	P	✓		WB	
19	P56	Tie-In	EEOS	7I	SN	1546	1551	30	30	P	✓		WB	
20	P56	Tie-In	7I	WEOS	SN	1549	1554	30	30	P		✓	WB	
21	P53	P56	SEOS	7H	SN	1554	1559	30	30	P		✓	WB	
22	P56	P57	WEOS	EEOS	SN	1600	1605	30	30	P		✓	WB	
23	P58	Tie-In	7K	WEOS	SN	1614	1619	30	30	P	✓		WB	
24	P58	Tie-In	EEOS	7K	SN	1615	1620	30	30	P		✓	WB	
25	P54	P56	SEOS	NEOS	SN	1622	1627	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-12-07

REVIEWED BY:

SHEET NUMBER: 3 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P54	P57	SEOS	NEOS	SN	1628	1633	30	30	P		✓	WB	
2	P58	P59	WEOS	EEOS	SN	1648	1653	30	30	P		✓	WB	
3	P56	P58	SEOS	NEOS	SN	1651	1656	30	30	P		✓	WB	
4	P56	P59	7N	NEOS	SN	1659	1704	30	30	P	✓		WB	
5	P57	P59	7P	NEOS	SN	1701	1706	30	30	P	✓		WB	
6	P59	P60	EEOS	WEOS	SN	1703	1708	30	30	P		✓	WB	
7	P55	P57	NEOS	SEOS	SN	1707	1712	30	30	P		✓	WB	
8	P56	P59	7R	7N	SN	1718	1723	30	30	P	✓		WB	
9	P56	P59	SEOS	7R	SN	1726	1731	30	30	P		✓	WB	
10	P57	P59	7Q	7P	SN	1716	1721	30	30	P	✓		WB	
11	P57	P59	SEOS	7Q	SN	1729	1734	30	30	P		✓	WB	
12	P57	P60	NEOS	SEOS	SN	1739	1744	30	30	P		✓	WB	
13	P61	Tie-In	7S	WEOS	SN	1750	1755	30	30	P	✓		WB	
14	P61	Tie In	7S	EEOS	SN	1751	1756	30	30	P		✓	WB	
15	P58	P61	NEOS	SEOS	SN	1756	1801	30	29	P		✓	WB	
16	P61	P62	WEOS	EEOS	SN	1812	1817	30	30	P		✓	WB	
17	P59	P61	SEOS	NEOS	SN	1813	1818	30	30	P		✓	WB	
18	P60	P62	7W	NEOS	SN	1820	1825	30	30	P	✓		WB	
19	P60	P62	SEOS	7W	SN	1825	1830	30	30	P		✓	WB	
20	P62	P63	WEOS	EEOS	SN	1826	1831	30	29	P		✓	WB	
21	P60	P63	NEOS	SEOS	SN	1833	1838	30	28	P		✓	WB	
22	P59	P62	SEOS	NEOS	SN	1855	1900	30	30	P		✓	WB	
23	P28	P44	SEOS	NEOS	SN	1008	1013	30	30	P		✓	WB	
24														
25														

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-13-07

REVIEWED BY: [signature]

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P64	Tie-In	9A	WEOS	SN	1004	1009	30	29	P	✓		WB	
2	P64	Tie-In	EEOS	9A	SN	1006	1011	30	28	P		✓	WB	
3	P64	P65	WEOS	EEOS	SN	1017	1022	30	30	P		✓	WB	
4	P61	P64	SEOS	NEOS	SN	1030	1035	30	30	P		✓	WB	
5	P62	P64	SEOS	NEOS	SN	1041	1046	30	30	P		✓	WB	
6	P62	P65	SEOS	NEOS	SN	1105	1110	30	30	P		✓	WB	
7	P63	P65	NEOS	SEOS	SN	1117	1122	30	30	P		✓	WB	
8	P66	P67	WEOS	EEOS	SN	1132	1137	30	30	P		✓	WB	
9	P64	P66	NEOS	SEOS	SN	1134	1139	30	30	P		✓	WB	
10	P66	Tie-In	9C	WEOS	SN	1137	1142	30	30	P	✓		WB	
11	P66	Tie-In	EEOS	9C	SN	1139	1144	30	30	P		✓	WB	
12	P67	P68	WEOS	EEOS	SN	1148	1153	30	30	P		✓	WB	
13	P65	P67	SEOS	NEOS	SN	1149	1154	30	30	P		✓	WB	
14	P64	P67	SEOS	NEOS	SN	1312	1317	30	30	P		✓	WB	
15	P65	P68	7E	NEOS	SN	1320	1325	30	30	P	✓		WB	
16	P65	P68	7F	7E	SN	1321	1326	30	30	P	✓		WB	
17	P65	P68	7G	7F	SN	1322	1327	30	30	P	✓		WB	
18	P65	P68	SEOS	7G	SN	1329	1334	20	29	P		✓	WB	
19	P69	P70	WEOS	EEOS	SN	1344	1349	30	30	P		✓	WB	
20	P69	Tie-In	9H	WEOS	SN	1359	1404	30	30	P	✓		WB	
21	P69	Tie-In	WEOS	9H	SN	1410	1410	30	30	P		✓	WB	
22	P66	P69	SEOS	NEOS	SN	1415	1420	30	30	P		✓	WB	
23	P67	P69	SEOS	NEOS	SN	1417	1422	30	30	P		✓	WB	
24	P67	P70	9I	NEOS	SN	1425	1430	30	30	P	✓		WB	
25	P67	P70	10E	9I	SN	1440	1455	30	30	P	✓		WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-13-07

REVIEWED BY:

SHEET NUMBER: 1 of 1

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P67	P70	9J	10E	SN	1441	1446	30	30	P	✓		WB	
2	P67	P70	SEOS	9J	SN	1444	1449	30	30	P		✓	WB	
3	P68	P70	SEOS	NEOS	SN	1448	1453	30	30	P		✓	WB	
4	P71	Tie-In	WEOS	EEOS	SN	1503	1508	30	30	P		✓	WB	
5	P69	P71	NEOS	3EOS	SN	1514	1519	30	30	P		✓	WB	
6	P71	P72	WEOS	EEOS	SN	1517	1522	30	30	P		✓	WB	
7	P70	P72	NEOS	SEOS	SN	1553	1558	30	30	P		✓	WB	
8	P69	P72	SEOS	NEOS	SN	1555	1600	30	30	P		✓	WB	
9	P72	P73	WEOS	EEOS	SN	1615	1620	30	30	P		✓	WB	
10	P70	P73	NEOS	SEOS	SN	1616	1621	30	30	P		✓	WB	
11	P71	P74	NEOS	SEOS	SN	1625	1630	30	30	P		✓	WB	
12	P74	Tie-In	WEOS	EEOS	SN	1626	1631	30	30	P		✓	WB	
13	P72	P74	NEOS	SEOS	SN	1659	1704	30	30	P		✓	WB	
14	P75	Tie-In	EEOS	WEOS	SN	1704	1709	30	30	P		✓	WB	
15	P76	Tie-In	WEOS	EEOS	SN	1712	1717	30	30	P		✓	WB	
16	P77	Tie-In	EEOS	9T	SN	1746	1751	30	30	P	✓		WB	
17	P77	Tie-In	9T	WEOS	SN	1746	1751	30	30	P		✓	WB	
18	P76	P77	NEOS	SEOS	SN	1750	1755	30	30	P		✓	WB	
19	P74	P75	NEOS	9V	SN	1754	1759	30	30	P	✓		WB	
20	P75	P76	NEOS	SEOS	SN	1755	1800	30	30	P		✓	WB	
21	P74	P75	9V	SEOS	SN	1800	1805	30	30	P		✓	WB	
22														
23														
24														
25														

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-14-07

REVIEWED BY: [signature]

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P78	P79	WEOS	EEOS	SN	1047	1052	30	30	P		✓	WB	
2	P79	P80	WEOS	EEOS	SN	1052	1057	30	28	P		✓	WB	
3	P80	P81	WEOS	EEOS	SN	1056	1101	30	30	P		✓	WB	
4	P81	P83	WEOS	EEOS	SN	1105	1110	30	30	P		✓	WB	
5	P77	P82	SEOS	NEOS	SN	1114	1119	30	28	P		✓	WB	
6	P82	Tie In	11C	WEOS	SN	1117	1122	30	29	P	✓		WB	
7	P82	Tie In	EEOS	11C	SN	1118	1123	30	29	P		✓	WB	
8	P84	Tie In	11E	WEOS	SN	1132	1137	30	30		✓		WB	
9	P84	Tie In	11E	~~EEOS~~	SN	1133	1138	30	30	P		✓	WB	
10	P85	P86	WEOS	EEOS	SN	1148	1153	30	30	P		✓	WB	
11	P84	P85	SEOS	NEOS	SN	1257	1302	30	30	P		✓	WB	
12	P86	Tie In	EEOS	WEOS	SN	1144	1149	30	30	P		✓	WB	
13	P83	P85	WEOS	EEOS	SN	1256	1301	30	30	P		✓	WB	
14	P82	P83	SEOS	NEOS	SN	1306	1311	30	30	P		✓	WB	
15	P81	P82	SEOS	NEOS	SN	1307	1312	30	30	P		✓	WB	
16	P77	P80	SEOS	NEOS	SN	1318	1323	30	30	P		✓	WB	
17	P77	P79	SEOS	NEOS	SN	1323	1328	30	30	P		✓	WB	
18	P77	P78	WEOS	EEOS	SN	1328	1333	30	30	P		✓	WB	
19	P76	P78	SEOS	NEOS	SN	1329	1334	30	30	P		✓	WB	
20	P76	P87	SEOS	NEOS	SN	1330	1335	30	30	P		✓	WB	
21	P76	P88	SEOS	NEOS	SN	1331	1336	30	30	P		✓	WB	
22	P78	P87	WEOS	EEOS	SN	1342	1347	30	30	P		✓	WB	
23	P87	P88	WEOS	EEOS	SN	1343	1348	30	30	P		✓	WB	
24	P88	P89	WEOS	EEOS	SN	1344	1349	30	30	P		✓	WB	
25	P76	P89	WEOS	EEOS	SN	1345	1350	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-14-07

REVIEWED BY:

SHEET NUMBER: 2 of 4

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P76	P90	EEOS	WEOS	SN	1346	1351	30	30	P		✓	WB	
2	P89	P90	SEOS	NEOS	SN	1351	1356	30	30	P		✓	WB	
3	P89	P91	WEOS	EEOS	SN	1352	1357	30	30	P		✓	WB	
4	P90	P91	WEOS	EEOS	SN	1359	1404	30	30	P		✓	WB	
5	P75	P90	SEOS	NEOS	SN	1355	1400	30	30	P		✓	WB	
6	P75	P91	SEOS	NEOS	SN	1356	1401	30	30	P		✓	WB	
7	P91	P92	WEOS	EEOS	SN	1403	1408	30	30	P		✓	WB	
8	P92	P93	WEOS	EEOS	SN	1406	1411	30	30	P		✓	WB	
9	P75	P92	WEOS	EEOS	SN	1404	1409	30	30	P		✓	WB	
10	P74	P92	SEOS	NEOS	SN	1405	1410	30	30	P		✓	WB	
11	P93	P94	WEOS	EEOS	SN	1414	1419	30	30	P		✓	WB	
12	P74	P93	SEOS	NEOS	SN	1415	1420	30	30	P		✓	WB	
13	P74	P94	SEOS	NEOS	SN	1416	1421	30	30	P		✓	WB	
14	P94	P95	WEOS	EEOS	SN	1417	1422	30	30	P		✓	WB	
15	P95	P96	WEOS	EEOS	SN	1418	1423	30	30	P		✓	WB	
16	P74	P95	SEOS	NEOS	SN	1425	1430	30	29	P		✓	WB	
17	P74	P96	SEOS	NEOS	SN	1426	1431	30	29	P		✓	WB	
18	P96	P97	WEOS	EEOS	SN	1427	1432	30	30	P		✓	WB	
19	P74	P97	SEOS	NEOS	SN	1428	1433	30	30	P		✓	WB	
20	P97	P98	WEOS	EEOS	SN	1429	1434	30	30	P		✓	WB	
21	P74	P98	SEOS	NEOS	SN	1438	1443	30	30	P		✓	WB	
22	P98	P99	WEOS	EEOS	SN	1439	1444	30	30	P		✓	WB	
*23	P98	P100	SEOS	NEOS	SN	1440	1445	30	30	P		✓	WB	
24	P74	P100	EEOS	WEOS	SN	1442	1447	30	30	P		✓	WB	
25	P99	P100	EEOS	WEOS	SN	1441	1446	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-14-07

REVIEWED BY: [signature]

SHEET NUMBER: 3 of 4

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P99	P101	WEOS	EEOS	SN	1449	1454	30	30	P		✓	WB	
2	P101	P102	WEOS	EEOS	SN	1450	1455	30	30	P		✓	WB	
3	P102	P103	WEOS	EEOS	SN	1451	1456	30	30	P		✓	WB	
4	P103	P104	WEOS	EEOS	SN	1452	1457	30	30	P		✓	WB	
5	P72	P74	SEOS	NEOS	SN	1457	1502	30	28	P		✓	WB	
6	P72	P100	SEOS	NEOS	SN	1458	1503	30	30	P		✓	WB	
7	P72	P99	SEOS	NEOS	SN	1501	1506	30	30	P		✓	WB	
8	P72	P101	SEOS	NEOS	SN	1507	1512	30	30	P		✓	WB	
9	P72	P102	SEOS	NEOS	SN	1508	1513	30	30	P		✓	WB	
10	P72	P103	SEOS	NEOS	SN	1516	1521	30	29	P		✓	WB	
11	P72	P104	SEOS	NEOS	SN	1519	1524	30	30	P		✓	WB	
12	P73	P104	NEOS	SEOS	SN	1520	1525	30	30	P		✓	WB	
13	P70	P105	NEOS	SEOS	SN	1528	1533	30	30	P		✓	WB	
14	P73	P105	III	WEOS	SN	1543	1548	30	30	P	✓		WB	
15	P104	P107	WEOS	EEOS	SN	1547	1552	30	30	P		✓	WB	
16	P73	P105	EEOS	III	SN	1551	1556	30	28	P		✓	WB	
17	P73	P107	SEOS	NEOS	SN	1552	1557	30	30	P		✓	WB	
18	P105	P107	SEOS	NEOS	SN	1557	1558	30	29	P		✓	WB	
19	P107	P108	WEOS	EEOS	SN	1556	1601	30	30	P		✓	WB	
20	P105	P108	SEOS	NEOS	SN	1559	1604	30	30	P		✓	WB	
21	P105	P106	WEOS	EEOS	SN	1603	1608	30	30	P		✓	WB	
22	P70	P106	NEOS	SEOS	SN	1606	1611	30	30	P		✓	WB	
23	P108	P109	WEOS	EEOS	SN	1640	1645	30	30	P		✓	WB	
24	P109	P110	WEOS	EEOS	SN	1644	1649	30	30	P		✓	WB	
25	P110	P111	WEOS	EEOS	SN	1654	1659	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-14-07

REVIEWED BY:

SHEET NUMBER: 4 of 4

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P105	P109	SEOS	NEOS	SN	1705	1710	30	29	P		✓	WB	
2	P105	P110	SEOS	NEOS	SN	1707	1712	30	29	P		✓	WB	
3	P106	P111	SEOS	NEOS	SN	1711	1716	30	29	P		✓	WB	
4	P111	P112	WEOS	EEOS	SN	1712	1717	30	30	P		✓	WB	
5	P106	P112	SEOS	NEOS	SN	1718	1723	30	29	P		✓	WB	
6	P112	P113	WEOS	EEOS	SN	1719	1724	30	30	P		✓	WB	
7	P106	P113	NEOS	SEOS	SN	1721	1726	30	30	P		✓	WB	
8	P82	P84	SEOS	NEOS	SN	1305	1310	30	30	P		✓	WB	
9	P83	P84	SEOS	NEOS	SN	1304	1309	30	30	P		✓	WB	
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GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-15-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		QCA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P114	P115	EEOS	WEOS	SI	1005	1010	30	30	P		✓	WB	
2	P41	Tie In	11X	EEOS	SI	1030	1035	30	30	P	✓		WB	
3	P41	P114	NEOS	SEOS	SI	1034	1039	30	30	P		✓	WB	
4	P41	Tie In	11X	WEOS	SI	1035	1040	30	30	P		✓	WB	
5	P114	Tie In	14B	WEOS	SI	1045	1050	30	29	P	✓		WB	
6	P114	Tie In	14B	EEOS	SI	1018	1023	30	30	P		✓	WB	
7	P117	Tie In	EEOS	14D	SI	1050	1055	30	30	P	✓		WB	
8	P117	Tie In	14D	WEOS	SI	1056	1101	30	30	P		✓	WB	
9	P41	P115	SEOS	NEOS	SI	1101	1106	30	30	P		✓	WB	
10	P42	P115	NEOS	SEOS	SI	1103	1108	30	30	P		✓	WB	
11	P114	P117	SEOS	NEOS	SI	1106	1111	30	30	P		✓	WB	
12	P117	P118	EEOS	WEOS	SI	1115	1120	30	30	P		✓	WB	
13	P116	P118	EEOS	WEOS	SI	1125	1130	30	30	P		✓	WB	
14	P115	P116	NEOS	SEOS	SI	1130	1135	30	30	P		✓	WB	
15	P116	P120	NEOS	SEOS	SI	1135	1140	30	30	P		✓	WB	
16	P115	P118	NEOS	SEOS	SI	1144	1149	30	30	P		✓	WB	
17	P118	P120	NEOS	SEOS	SI	1145	1150	30	30	P		✓	WB	
18	P117	P120	NEOS	SEOS	SI	1159	1204	30	30	P		✓	WB	
19	P119	P120	EEOS	WEOS	SI	1205	1210	30	30	P		✓	WB	
20	P117	P119	NEOS	SEOS	SI	1320	1325	30	30	P		✓	WB	
21	P115	P117	14I	NEOS	SI	1315	1320	30	30	P	✓		WB	
22	P115	P117	14I	SEOS	SI	1316	1321	30	30	P		✓	WB	
23	P121	P122	WEOS	EEOS	SI	1400	1405	30	30	P		✓	WB	
24	P120	P122	NEOS	SEOS	SI	1355	1400	30	30	P		✓	WB	
25	P119	P122	NEOS	SEOS	SI	1405	1410	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-15-07

REVIEWED BY: [signature]

SHEET NUMBER: 2 of 2

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P121	P123	NEOS	SEOS	SN	1440	1445	30	30	P		✓	WB	
2	P119	P121	NEOS	SEOS	SN	1446	1451	30	30	P		✓	WB	
3	P122	P124	NEOS	SEOS	SN	1450	1455	30	30	P		✓	WB	
4	P121	P124	SEOS	NEOS	SN	1455	1500	30	29	P		✓	WB	
5	P123	P124	EEOS	WEOS	SN	1505	1510	30	29	P		✓	WB	
6	P119	Tie In	14T	WEOS	SN	1516	1521	30	30	P	✓		WB	
7	P119	Tie In	14T	EEOS	SN	1517	1522	30	30	P		✓	WB	
8	P121	Tie In	14W	EEOS	SN	1525	1530	30	30	P	✓		WB	
9	P121	Tie In	14W	WEOS	SN	1526	1531	30	30	P		✓	WB	
10	P123	Tie In	EEOS	15A	SN	1535	1540	30	30	P	✓		WB	
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-20-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 3

LINE NUMBER	SEAM NUMBER: FIRST PANEL	SEAM NUMBER: SECOND PANEL	SEAM SECTION: START POINT	SEAM SECTION: FINISH POINT	QC TECH INITIALS	DURATION: START TIME	DURATION: FINISH TIME	PRESSURE: INITIAL PRESSURE	PRESSURE: FINAL PRESSURE	RESULTS PASS OR FAIL	SEAM COMPLETED: NO	SEAM COMPLETED: YES	CQA MONITOR INITIALS	REMARKS
1	P125	P126	WEOS	EEOS	SN	1008	1013	30	30	P		✓	WB	
2	P123	P126	NEOS	SEOS	SN	1010	1015	30	30	P		✓	WB	
3	P124	P126	16A	SEOS	SN	1020	1025	30	30	P	✓		WB	
4	P124	P126	16A	16B	SN	1025	1030	30	30	P	✓		WB	
5	P127	P128	EEOS	WEOS	SN	1042	1047	30	30	P				
6	P125	P128	NEOS	SEOS	SN	1043	1048	30	30	P		✓	WB	
7	P123	P125	NEOS	SEOS	SN	1045	1050	30	30	P		✓	WB	
8	P125	P127	NEOS	SEOS	SN	1100	1105	30	30	P		✓	WB	
9	P125	Tie-IN	15I	WEOS	SN	1103	1108	30	30	P	✓		WB	
10	P125	Tie-IN	EEOS	15I	SN	1105	1110	30	30	P		✓	WB	
11	123	Tie-IN	WEOS	15A	SN	1107	1112	30	30	P		✓	WB	
12	P127	Tie-IN	15J	EEOS	SN	1117	1122	30	30	P	✓		WB	
13	P127	Tie-IN	15J	WEOS	SN	1123	1128	30	30	P		✓	WB	
14	P124	P126	16D	NEOS	SN	1132	1137	30	30	P	✓		WB	
15	P124	P126	16D	SEOS	SN	1133	1138	30	30	P		✓	WB	
16	P127	P129	NEOS	SEOS	SN	1145	1150	30	30	P		✓	WB	
17	P129	Tie IN	15N	EEOS	SN	1147	1152	30	30		✓		WB	
18	P129	Tie IN	15N	WEOS	SN	1150	1155	30	30	P		✓	WB	
19	P126	P128	NEOS	SEOS	SN	1258	1303	30	30	P		✓	WB	
20	P128	P129	NEOS	SEOS	SN	1300	1305	30	30	P		✓	WB	
21	P131	P132	EEOS	WEOS	SN	1357	1402	30	30	P		✓	WB	
22	P128	P130	NEOS	SEOS	SN	1350	1355	30	30	P		✓	WB	
23	P129	P130	EEOS	WEOS	SN	1351	1356	30	30	P		✓	WB	
24	P130	P132	NEOS	SEOS	SN	1403	1408	30	30	P		✓	WB	
25	P129	P132	NEOS	SEOS	SN	1413	1418	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-20-07

REVIEWED BY:

LINE NUMBER	SEAM NUMBER		SEAM SECTION			DURATION		PRESSURE		RESULTS	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT	QC TECH INITIALS	START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE	PASS OR FAIL	NO	YES		
1	P132	P134	NEOS	SEOS	SN	1433	1438	30	30	P		✓	WB	
2	P131	P134	SEOS	NEOS	SN	1440	1445	30	30	P		✓	WB	
3	P131	P133	SEOS	NEOS	SN	1450	1455	30	30	P		✓	WB	
4	P133	P134	EEOS	WEOS	SN	1451	1456	30	30	P		✓	WB	
5	P129	P131	SEOS	NEOS	SN	1453	1458	30	30	P		✓	WB	
6	P131	Tie In	16I	EEOS	SN	1500	1505	30	30	P	✓		WB	
7	P131	Tie In	WEOS	16I	SN	1501	1506	30	30	P		✓	WB	
8	P133	Tie In	16K	EEOS	SN	1502	1507	30	30	P	✓		WB	
9	P133	Tie In	WEOS	16K	SN	1503	1508	30	30	P		✓	WB	
10	P135	P136	EEOS	WEOS	SN	1544	1549	30	30	P		✓	WB	
11	P133	P136	NEOS	SEOS	SN	1545	1550	30	30	P		✓	WB	
12	P134	P136	NEOS	SEOS	SN	1553	1558	30	30	P		✓	WB	
13	P137	P138	EEOS	WEOS	SN	1604	1609	30	30	P		✓	WB	
14	P133	P135	SEOS	NEOS	SN	1610	1615	30	30	P		✓	WB	
15	P136	P138	NEOS	SEOS	SN	1620	1625	30	30	P		✓	WB	
16	P135	P137	SEOS	NEOS	SN	1624	1629	30	30	P		✓	WB	
17	P135	Tie In	16S	EEOS	SN	1630	1635	30	30	P	✓		WB	
18	P135	Tie In	16S	WEOS	SN	1631	1636	30	30	P		✓	WB	
19	P137	Tie In	16T	WEOS	SN	1633	1638	30	30	P	✓		WB	
20	P137	Tie In	16TE	16TW	SN	1634	1639	30	30	P		✓	WB	
21	P137	Tie In	EEOS	16T	SN	1637	1642	30	30	P		✓	WB	
22	P139	P140	EEOS	WEOS	SN	1710	1715	30	30	P		✓	WB	
23	P135	P138	NEOS	SEOS	SN	1716	1721	30	30	P		✓	WB	
24	P137	P140	NEOS	SEOS	SN	1717	1722	30	30	P		✓	WB	
25	P137	P139	SEOS	NEOS	SN	1723	1728	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-20-07

REVIEWED BY: [signature]

SHEET NUMBER: 3 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P141	P142	WEOS	EEOS	SN	1733	1738	30	30	P		✓	WB	
2	P139	Tie In	WEOS	EEOS	SN	1740	1745	30	30	P		✓	WB	
3	P139	P142	SEOS	NEOS	SN	1746	1751	30	30	P		✓	WB	
4	P138	P140	NEOS	SEOS	SN	1752	1757	30	30	P		✓	WB	
5	P139	P141	NEOS	SEOS	SN	1802	1807	30	30	P		✓	WB	
6	P140	P142	NEOS	SEOS	SN	1809	1814	30	30	P		✓	WB	
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-22-07

REVIEWED BY:

SHEET NUMBER: 1 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION			DURATION		PRESSURE		RESULTS	SEAM COMPLETED		COA	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT	QC TECH INITIALS	START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE	PASS OR FAIL	NO	YES	MONITOR INITIALS	
1	P141	P143	NEOS	SEOS	SN	0945	0950	30	30	P		✓	WB	
2	P143	TieIN	EEOS	WEOS	SN	0959	1004	30	30	P		✓	WB	
3	P141	TieIN	EEOS	WEOS	SN	1000	1005	30	30	P		✓	WB	
4	P145	TieIN	EEOS	18C	SN	1007	1012	30	30	P	✓		WB	
5	P145	TieIN	18C	WEOS	SN	1010	1015	30	30	P		✓	WB	
6	P143	P144	WEOS	EEOS	SN	1016	1021	30	30	P		✓	WB	
7	P143	P146	NEOS	SEOS	SN	1017	1022	30	30	P		✓	WB	
8	P145	P146	EEOS	WEOS	SN	1019	1024	30	30	P		✓	WB	
9	P143	P145	SEOS	NEOS	SN	1022	1027	30	30	P		✓	WB	
10	P142	P144	NEOS	SEOS	SN	1026	1031	30	30	P		✓	WB	
11	P141	P144	NEOS	SEOS	SN	1027	1032	30	30	P		✓	WB	
12	P146	P147	NEOS	SEOS	SN	1105	1110	30	30	P		✓	WB	
13	P147	P148	EEOS	WEOS	SN	1116	1121	30	30	P		✓	WB	
14	P144	P146	NEOS	SEOS	SN	1124	1129	30	30	P		✓	WB	
15	P145	P148	NEOS	SEOS	SN	1133	1138	30	30	P		✓	WB	
16	P146	P148	NEOS	SEOS	SN	1248	1253	30	30	P		✓	WB	
17	P148	P150	SEOS	NEOS	SN	1345	1350	30	30	P		✓	WB	
18	P149	P153	EEOS	WEOS	SN	1352	1357	30	30	P		✓	WB	
19	P147	P149	NEOS	SEOS	SN	1353	1358	30	30	P		✓	WB	
20	P147	P153	SEOS	NEOS	SN	1354	1359	30	29	P		✓	WB	
21	P148	P153	SEOS	NEOS	SN	1357	1402	30	30	P		✓	WB	
22	P152	P153	EEOS	WEOS	SN	1404	1409	30	30	P		✓	WB	
23	P148	P152	NEOS	SEOS	SN	1412	1417	30	30	P		✓	WB	
24	P150	P151	NEOS	SEOS	SN	1415	1420	30	30	P		✓	WB	
25	P150	TieIN	18J	EEOS	SN	1425	1430	30	30	P	✓		WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-22-07

REVIEWED BY: [signature]

LINE NUMBER	SEAM NUMBER: FIRST PANEL	SEAM NUMBER: SECOND PANEL	SEAM SECTION: START POINT	SEAM SECTION: FINISH POINT	QC TECH INITIALS	DURATION: START TIME	DURATION: FINISH TIME	PRESSURE: INITIAL PRESSURE	PRESSURE: FINAL PRESSURE	RESULTS PASS OR FAIL	SEAM COMPLETED: NO	SEAM COMPLETED: YES	CQA MONITOR INITIALS	REMARKS
1	P150	Tie In	WEOS	18J	SN	1426	1431	30	30	P		✓	WB	
2	P151	Tie In	18K	EEOS	SN	1427	1432	30	30	P	✓		WB	
3	P151	Tie In	WEOS	18K	SN	1428	1433	30	30	P		✓	WB	
4	P151A	Tie In	EEOS	WEOS	SN	1429	1434	30	30	P		✓	WB	
5	P151	P151A	EEOS	WEOS	SN	1433	1438	30	30	P		✓	WB	
6	P151	P154	EEOS	WEOS	SN	1439	1444	30	30	P		✓	WB	
7	P150	P152	WEOS	EEOS	SN	1440	1445	30	30	P		✓	WB	
8	P153	P154	SEOS	NEOS	SN	1447	1452	30	30	P		✓	WB	
9	P154	P155	EEOS	WEOS	SN	1448	1453	30	30	P		✓	WB	
10	P153	P155	NEOS	SEOS	SN	1449	1454	30	30	P		✓	WB	
11	P149	P155	NEOS	SEOS	SN	1452	1457	30	30	P		✓	WB	
12	P152	P154	NEOS	SEOS	SN	1518	1523	30	30	P		✓	WB	
13	P156	P157	EEOS	WEOS	SN	1528	1533	30	30	P		✓	WB	
14	P154	P157	NEOS	SEOS	SN	1538	1545	30	30	P		✓	WB	
15	P151	P156	NEOS	SEOS	SN	1552	1557	30	30	P		✓	WB	
16	P151A	P156	NEOS	SEOS	SN	1553	1558	30	30	P		✓	WB	
17	P156	Tie In	18P	EEOS	SN	1554	1559	30	30	P	✓		WB	
18	P156	Tie In	WEOS	18P	SN	1555	1600	30	30	P		✓	WB	
19	P156	P158	NEOS	SEOS	SN	1557	1602	30	30	P		✓	WB	
20	P155	P159	NEOS	SEOS	SN	1605	1610	30	30	P		✓	WB	
21	P158	P161	NEOS	SEOS	SN	1639	1634	30	30	P		✓	WB	
22	P160	P161	EEOS	WEOS	SN	1633	1638	30	30	P		✓	WB	
23	P154	P159	NEOS	SEOS	SN	1638	1643	30	30	P		✓	WB	
24	P157	P159	EEOS	WEOS	SN	1639	1644	30	30	P		✓	WB	
25	P158	P162	NEOS	SEOS	SN	1647	1652	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-22-07

REVIEWED BY: [signature]

SHEET NUMBER: 3 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION			DURATION		PRESSURE		RESULTS	SEAM COMPLETED		CQA	
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT	QC TECH INITIALS	START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE	PASS OR FAIL	NO	YES	MONITOR INITIALS	REMARKS
1	P158	P163	EEOS	WEOS	SN	1655	1700	30	30	P		✓	WB	
2	P157	P163	NEOS	SEOS	SN	1656	1701	30	30	P		✓	WB	
3	P160	P165	EEOS	WEOS	SN	1724	1729	30	30	P		✓	WB	
4	P161	P164	EEOS	WEOS	SN	1725	1730	30	30	P		✓	WB	
5	P162	P164	EEOS	WEOS	SN	1731	1736	30	30	P		✓	WB	
6	P158	P164	NEOS	SEOS	SN	1735	1740	30	30	P		✓	WB	
7	P159	P163	NEOS	SEOS	SN	1742	1747	30	30	P		✓	WB	
8	P160	P166	EEOS	WEOS	SN	1751	1756	30	30	P		✓	WB	
9	P163	P167	NEOS	SEOS	SN	1759	1804	30	30	P		✓	WB	
10	P166	P167	EEOS	WEOS	SN	1800	1805	30	30	P		✓	WB	
11	P163	P166	NEOS	SEOS	SN	1825	1830	30	30	P		✓	WB	
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GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-23-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION		QC TECH INITIALS	DURATION		PRESSURE		RESULTS PASS OR FAIL	SEAM COMPLETED		CQA MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT		START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE		NO	YES		
1	P166	P168	NEOS	SEOS	SN	1037	1042	30	30	P		✓	WB	
2	P167	P168	NEOS	SEOS	SN	0953	0958	30	30	P		✓	WB	
3	P167	P169	NEOS	SEOS	SN	1012	1017	30	30	P		✓	WB	
4	P165	P171	WEOS	EEOS	SN	1048	1053	30	30	P		✓	WB	
5	P165	P172	WEOS	EEOS	SN	1055	1100	30	30	P		✓	WB	
6	P171	P173	WEOS	EEOS	SN	1056	1101	30	30	P		✓	WB	
7	P171	P172	WEOS	EEOS	SN	1100	1105	30	30	P		✓	WB	
8	P173	P174	WEOS	EEOS	SN	1105	1110	30	30	P		✓	WB	
9	P174	P175	WEOS	EEOS	SN	1115	1120	30	30	P		✓	WB	
10	P168	P170	NEOS	SEOS	SN	1107	1112	30	30	P		✓	WB	
11	P175	P176	EEOS	WEOS	SN	1125	1130	30	30	P		✓	WB	
12	P170	P174	NEOS	SEOS	SN	1126	1131	30	28	P		✓	WB	
13	P170	P173	NEOS	SEOS	SN	1133	1138	30	30	P		✓	WB	
14	P170	P171	NEOS	SEOS	SN	1139	1144	30	30	P		✓	WB	
15	P168	P171	NEOS	SEOS	SN	1141	1146	30	30	P		✓	WB	
16	P165	P168	EEOS	WEOS	SN	1144	1149	30	30	P		✓	WB	
17	P176	P177	EEOS	WEOS	SN	1150	1155	30	30	P		✓	WB	
18	P174	P178	EEOS	WEOS	SN	1323	1328	30	30	P		✓	WB	
19	P175	P178	NEOS	SEOS	SN	1327	1332	30	30	P		✓	WB	
20	P176	P179	NEOS	SEOS	SN	1336	1341	30	30	P		✓	WB	
21	P178	P179	NEOS	SEOS	SN	1337	1342	30	30	P		✓	WB	
22	P179	P180	EEOS	WEOS	SN	1343	1348	30	30	P		✓	WB	
23	P180	P181	EEOS	WEOS	SN	1350	1400	30	30	P		✓	WB	
24	P178	P180	SEOS	NEOS	SN	1405	1410	30	30	P		✓	WB	
25	P178	P181	NEOS	SEOS	SN	1415	1420	30	30	P		✓	WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-23-07

REVIEWED BY:

SHEET NUMBER: 2 of 3

LINE NUMBER	SEAM NUMBER: FIRST PANEL	SEAM NUMBER: SECOND PANEL	SEAM SECTION: START POINT	SEAM SECTION: FINISH POINT	QC TECH INITIALS	DURATION: START TIME	DURATION: FINISH TIME	PRESSURE: INITIAL PRESSURE	PRESSURE: FINAL PRESSURE	RESULTS: PASS OR FAIL	SEAM COMPLETED: NO	SEAM COMPLETED: YES	CQA MONITOR INITIALS	REMARKS
1	P178	P178	NEOS	SEOS	SN	1416	1421	30	30	P		✓	WB	
2	P168	P169	EEOS	WEOS	SN	1004	1009	30	30	P		✓	WB	
3	P169	P170	NEOS	SEOS	SN	1009	1014	30	30	P		✓	WB	
4	P180	P182	NEOS	SEOS	SN	1628	1633	30	30	P		✓	WB	
5	P177	P182	SEOS	NEOS	SN	1634	1639	30	30	P		✓	WB	
6	P179	P181	NEOS	SEOS	SN	1637	1642	30	30	P		✓	WB	
7	P181	P182	NEOS	SEOS	SN	1642	1647	30	30	P		✓	WB	
8	P184	P185	EEOS	WEOS	SN	1650	1655	30	30	P		✓	WB	
9	P183	P184	EEOS	WEOS	SN	1652	1657	30	30	P		✓	WB	
10	P185	P186	EEOS	WEOS	SN	1657	1702	30	30	P		✓	WB	
11	P182	P183	NEOS	SEOS	SN	1700	1705	30	30	P		✓	WB	
12	P182	P184	NEOS	SEOS	SN	1702	1707	30	30	P		✓	WB	
13	P186	P187	EEOS	WEOS	SN	1710	1715	30	30	P		✓	WB	
14	P182	P186	NEOS	SEOS	SN	1711	1716	30	30	P		✓	WB	
15	P188	P189	NEOS	SEOS	SN	1714	1719	30	30	P		✓	WB	
16	P182	P187	SEOS	NEOS	SN	1718	1723	30	30	P		✓	WB	
17	P187	P189	EEOS	WEOS	SN	1719	1724	30	30	P		✓	WB	
18	P188	P190	EEOS	WEOS	SN	1722	1727	30	30	P		✓	WB	
19	P189	P190	WEOS	EEOS	SN	1723	1728	30	30	P		✓	WB	
20	P182	P190	SEOS	NEOS	SN	1727	1732	30	30	P		✓	WB	
21	P190	P191	EEOS	WEOS	SN	1731	1736	30	30	P		✓	WB	
22	P190	P193	EEOS	WEOS	SN	1734	1739	30	30	P		✓	WB	
23	P191	P193	EEOS	WEOS	SN	1737	1742	30	30	P		✓	WB	
24	P182	P193	NEOS	SEOS	SN	1741	1746	30	30	P		✓	WB	
25	P182	P191	SEOS	JOI	SN	1744	1749	30	30	P	✓		WB	

GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF PRESSURE TEST: 3-23-07

REVIEWED BY: [signature]

SHEET NUMBER: 3 of 3

LINE NUMBER	SEAM NUMBER		SEAM SECTION			DURATION		PRESSURE		RESULTS	SEAM COMPLETED		QA/QC MONITOR INITIALS	REMARKS
	FIRST PANEL	SECOND PANEL	START POINT	FINISH POINT	QC TECH INITIALS	START TIME	FINISH TIME	INITIAL PRESSURE	FINAL PRESSURE	PASS OR FAIL	NO	YES		
1	P182	P191	20I	NEOS	SN	1747	1752	30	30	P		✓	WB	
* 2	P191	P192	EEOS	WEOS	SN	1748	1753	30	30	P		✓	WB	
3	P177	P194	EEOS	WEOS	SN	1756	1801	30	30	P		✓	WB	
4	P182	P194	NEOS	SEOS	SN	1802	1807	30	30	P		✓	WB	
5	P194	P195	EEOS	WEOS	SN	1803	1808	30	30	P		✓	WB	
6	P195	P196	EEOS	WEOS	SN	1809	1814	30	30	P		✓	WB	
7	P196	P197	EEOS	WEOS	SN	1813	1818	30	30	P		✓	WB	
8	P197	P198	EEOS	WEOS	SN	1818	1823	30	30	P		✓	WB	
9	P192	P198	EEOS	WEOS	SN	1819	1824	30	28	P		✓	WB	
10	P192	P197	EEOS	WEOS	SN	1834	1839	30	30	P		✓	WB	
11	P192	P196	EEOS	WEOS	SN	1835	1840	30	30	P		✓	WB	
12	P192	P195	WEOS	EEOS	SN	1842	1847	30	30	P		✓	WB	
13	P182	P192	NEOS	SEOS	SN	1837	1842	30	30	P		✓	WB	
14	P182	P189	SEOS	NEOS	SN	1721	1726	30	30	P		✓	WB	
15	P187	P188	EEOS	WEOS	SN	1719	1724	30	30	P		✓	WB	
16	P182	P185	EEOS	WEOS	SN	1708	1713	30	30	P		✓	WB	
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ACC of NORTH CAROLINA, LLC

APPENDIX P

Vacuum Testing Logs

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-13-07

REVIEWED BY:

SHEET NUMBER: 1 of 4

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	1M	SP	N	Y	TS	
2	1W	"	N	Y	TS	
3	1H	"	N	Y	TS	
4	3T	"	N	Y	TS	
5	5K	"	N	Y	TS	
6	4Q	"	N	Y	TS	
7	5J	"	N	Y	TS	
8	5Q	"	N	Y	TS	
9	5H	"	N	Y	TS	
10	4T	"	N	Y	TS	
11	5G	"	N	Y	TS	
12	5C	"	N	Y	TS	
13	3V	"	N	Y	TS	
14	3W	"	N	Y	TS	
15	3X	"	N	Y	TS	
16	1C	"	N	Y	TS	
17	1F	"	N	Y	TS	
18	1S	"	N	Y	TS	
19	1N	"	N	Y	TS	
20	4S	"	N	Y	TS	
21	4R	"	N	Y	TS	
22	7A	"	N	Y	TS	
23	4V	"	N	Y	TS	
24	5F	"	N	Y	TS	
25	5I	"	N	Y	TS	

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26	4X	SP	N	Y	TS	
27	5A	"	N	Y	TS	
28	4P	"	N	Y	TS	
29	4M	"	N	Y	TS	
30	5P	"	N	Y	TS	
31	5N	"	N	Y	TS	
32	4W	"	N	Y	TS	
33	5R	"	N	Y	TS	
34	5E	"	N	Y	TS	
35	5M	"	N	Y	TS	
36	5D	"	N	Y	TS	
37	4N	"	N	Y	TS	
38	5B	"	N	Y	TS	
39	3S	"	N	Y	TS	
40	1B	"	N	Y	TS	
41	1D	"	N	Y	TS	
42	1I	"	N	Y	TS	
43	1G	"	N	Y	TS	
44	1A	"	N	Y	TS	
45	1E	"	N	Y	TS	
46	1K	"	N	Y	TS	
47	1X	"	N	Y	TS	
48	2B	"	N	Y	TS	
49	1P	"	N	Y	TS	
50	1Q	"	N	Y	TS	

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-13-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 4

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	2C	SP	N	Y	TS	
2	2F	"	N	Y	TS	
3	2H	"	N	Y	TS	
4	2G	"	N	Y	TS	
5	2K	"	N	Y	TS	
6	2V	"	N	Y	TS	
7	2T	"	N	Y	TS	
8	4F	"	N	Y	TS	
9	2S	"	N	Y	TS	
10	4G	"	N	Y	TS	
11	2R	"	N	Y	TS	
12	3K	"	N	Y	TS	
13	3J	"	N	Y	TS	
14	5S	"	N	Y	TS	
15	6I	"	N	Y	TS	
16	5T	"	N	Y	TS	
17	6J	"	N	Y	TS	
18	8A	"	N	Y	TS	
19	6K	"	N	Y	TS	
20	6M	"	N	Y	TS	
21	6X	"	N	Y	TS	
22	7G	"	N	Y	TS	
23	7F	"	N	Y	TS	
24	6H	"	N	Y	TS	
25	6E	"	N	Y	TS	
26	6D	SP	N	Y	TS	
27	6C	"	N	Y	TS	
28	5V	"	N	Y	TS	
29	3Q	"	N	Y	TS	
30	3F	"	N	Y	TS	
31	3N	"	N	Y	TS	
32	3P	"	N	Y	TS	
33	3E	"	N	Y	TS	
34	3D	"	N	Y	TS	
35	4A	"	N	Y	TS	
36	2Q	"	N	Y	TS	
37	2J	"	N	Y	TS	
38	2P	"	N	Y	TS	
39	2D	"	N	Y	TS	
40	1T	"	N	Y	TS	
41	1R	"	N	Y	TS	
42	1V	"	N	Y	TS	
43	2E	"	N	Y	TS	
44	2M	"	N	Y	TS	
45	3B	"	N	Y	TS	
46	4B	"	N	Y	TS	
47	4C	"	N	Y	TS	
48	4J	"	N	Y	TS	
49	4K	"	N	Y	TS	
50	7B	"	N	Y	TS	

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-13-07

REVIEWED BY: AJ

SHEET NUMBER: 3 of 4

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	5W	SP	N	Y	TS	
2	3M	"	N	Y	TS	
3	4H	"	N	Y	TS	
4	3I	"	N	Y	TS	
5	3H	"	N	Y	TS	
6	3C	"	N	Y	TS	
7	3G	"	N	Y	TS	
8	2W	"	N	Y	TS	
9	2X	"	N	Y	TS	
10	3A	"	N	Y	TS	
11	2N	"	N	Y	TS	
12	2I	"	N	Y	TS	
13	2A	"	N	Y	TS	
14	4D	"	N	Y	TS	
15	4E	"	N	Y	TS	
16	4I	"	N	Y	TS	
17	3R	"	N	Y	TS	
18	5X	"	N	Y	TS	
19	6A	"	N	Y	TS	6A
20	6N	"	N	Y	TS	
21	6P	"	N	Y	TS	
22	7I	"	N	Y	TS	
23	8C	"	N	Y	TS	
24	7H	"	N	Y	TS	
25	7M	"	N	Y	TS	

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26	8R	SP	N	Y	TS	
27	6T	"	N	Y	TS	
28	6Q	"	N	Y	TS	
29	6B	"	N	Y	TS	
30	6G	"	N	Y	TS	
31	6R	"	N	Y	TS	
32	6S	"	N	Y	TS	
33	6F	"	N	Y	TS	
34	7C	"	N	Y	TS	
35	6W	"	N	Y	TS	
36	8B	"	N	Y	TS	
37	8F	"	N	Y	TS	
38	7W	"	N	Y	TS	
39	8H	"	N	Y	TS	
40	8G	"	N	Y	TS	
41	8I	"	N	Y	TS	
42	7Q	"	N	Y	TS	
43	9B	"	N	Y	TS	
44	7P	"	N	Y	TS	
45	8J	"	N	Y	TS	
46	8K	"	N	Y	TS	
47	8D	"	N	Y	TS	
48	7R	"	N	Y	TS	
49	7D	"	N	Y	TS	
50	8E	"	N	Y	TS	

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-13-07

REVIEWED BY: [signature]

SHEET NUMBER: 4 of 4

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	7E	SP	N	Y	TS	
2	6V	"	N	Y	TS	
3	7I	"	N	Y	TS	
4	7J	"	N	Y	TS	
5	7K	"	N	Y	TS	
6	8N	"	N	Y	TS	
7	7V	"	N	Y	TS	
8	8X	"	N	Y	TS	
9	1J	"	N	Y	TS	
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LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26						
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-14-07

REVIEWED BY:

SHEET NUMBER: 1 of 1

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	10B	SP	N	Y	WB	
2	9I	SP	N	Y	WB	
3	8V	SP	N	Y	WB	
4	10D	SP	N	Y	WB	
5	10I	SP	N	Y	WB	
6	10G	SP	N	Y	WB	
7	10J	SP	N	Y	WB	
8	10K	SP	N	Y	WB	
9	9D	SP	N	Y	WB	
10	10A	SP	N	Y	WB	
11	9A	SP	N	Y	WB	
12	8P	SP	N	Y	WB	
13	7S	SP	N	Y	WB	
14	8Q	SP	N	Y	WB	
15	10C	SP	N	Y	WB	
16	8T	SP	N	Y	WB	
17	10M	SP	N	Y	WB	
18	9J	SP	N	Y	WB	
19	10F	SP	N	Y	WB	
20	8W	SP	N	Y	WB	
21	8S	SP	N	Y	WB	
22	7X	SP	N	Y	WB	
23	8M	SP	N	Y	WB	
24	9G	SP	N	Y	WB	
25	9F	SP	N	Y	WB	

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26	9E	SP	N	Y	WB	
27						
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: 1001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-15-07

REVIEWED BY:

SHEET NUMBER: 1 of 2

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	11K	SP	N	Y	WB	
2	10E	SP	N	Y	WB	
3	12C	SP	N	Y	WB	
4	13E	SP	N	Y	WB	
5	13D	SP	N	Y	WB	
6	13C	SP	N	Y	WB	
7	13A	SP	N	Y	WB	
8	13B	SP	N	Y	WB	
9	12X	SP	N	Y	WB	
10	12W	SP	N	Y	WB	
11	7N	SP	N	Y	WB	
12	9C	SP	N	Y	WB	
13	10N	SP	N	Y	WB	
14	9M	SP	N	Y	WB	
15	9P	SP	N	Y	WB	
16	9V	SP	N	Y	WB	
17	9X	SP	N	Y	WB	
18	9W	SP	N	Y	WB	
19	10X	SP	N	Y	WB	
20	9H	SP	N	Y	WB	
21	9K	SP	N	Y	WB	
22	9N	SP	N	Y	WB	
23	9Q	SP	N	Y	WB	
24	9R	SP	N	Y	WB	
25	9S	SP	N	Y	WB	
26	9T					Covered by 11B
27	11B	SP	N	Y	WB	
28	11C	SP	N	Y	WB	
29	11D	SP	N	Y	WB	
30	11E	SP	N	Y	WB	
31	11G	SP	N	Y	WB	Covers 11F
32	12B	SP	N	Y	WB	
33	11H	SP	N	Y	WB	
34	12D	SP	N	Y	WB	
35	12E	SP	N	Y	WB	
36	12F	SP	N	Y	WB	
37	11A	SP	N	Y	WB	
38	10R	SP	N	Y	WB	
39	10S	SP	N	Y	WB	
40	10T	SP	N	Y	WB	
41	12G	SP	N	Y	WB	
42	12H	SP	N	Y	WB	
43	12I	SP	N	Y	WB	
44	12M	SP	N	Y	WB	
45	12N	SP	N	Y	WB	
46	12J	SP	N	Y	WB	
47	10W	SP	N	Y	WB	
48	12P	SP	N	Y	WB	
49	12Q	SP	N	Y	WB	
50	10V	SP	N	Y	WB	

ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-15-07

REVIEWED BY:

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	12R	SP	N	Y	WB	
2	12S	SP	N	Y	WB	
3	12T	SP	N	Y	WB	
4	12V	SP	N	Y	WB	
5						
6						
7						
8						
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LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26						
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GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-17-07

REVIEWED BY: [illegible]

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	10 Q	SP	N	Y	TS	
2	10 P	"	N	Y	TS	
3	12 B	"	N	Y	TS	
4	12 A	"	N	Y	TS	
5	10 H	"	N	Y	TS	
6	11 J	"	N	Y	TS	
7	11 M	"	N	Y	TS	
8	11 I	"	N	Y	TS	
9	11 N	"	N	Y	TS	
10	11 P	"	N	Y	TS	
11	11 Q	"	N	Y	TS	
12	11 R	"	N	Y	TS	
13	11 S	"	N	Y	TS	
14	11 T	"	N	Y	TS	
15	12 K	"	N	Y	TS	
16	11 V	"	N	Y	TS	
17	13 I	"	N	Y	TS	
18	13 H	"	N	Y	TS	
19	13 J	"	N	Y	TS	
20	11 X	"	N	Y	TS	
21	14 A	"	N	Y	TS	
22	14 B	"	N	Y	TS	
23	14 C	"	N	Y	TS	
24	14 D	"	N	Y	TS	
25	14 S	"	N	Y	TS	

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26	14 T	SP	N	Y	TS	
27	14 V	"	N	Y	TS	
28	14 W	"	N	Y	TS	
29	14 X	"	N	Y	TS	
30	14 E	"	N	Y	TS	
31	14 J	"	N	Y	TS	
32	13 V	"	N	Y	TS	
33	13 R	"	N	Y	TS	
34	14 I	"	N	Y	TS	
35	14 P	"	N	Y	TS	
36	14 M	"	N	Y	TS	
37	14 R	"	N	Y	TS	
38	14 N	"	N	Y	TS	
39	14 Q	"	N	Y	TS	
40	14 H	"	N	Y	TS	
41	13 P	"	N	Y	TS	
42	13 N	"	N	Y	TS	
43	14 G	"	N	Y	TS	
44	13 F	"	N	Y	TS	
45	13 M	"	N	Y	TS	
46	14 F	"	N	Y	TS	
47	13 K	"	N	Y	TS	
48	11 W	"	N	Y	TS	
49	13 G	"	N	Y	TS	
50	13 Q	"	N	Y	TS	

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-17-07

REVIEWED BY:

SHEET NUMBER: 2 of 2

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	13-T	SP	N	Y	TS	
2	14 K	"	N	Y	TS	
3						
4						
5						
6						
7						
8						
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LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26						
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-20-07

REVIEWED BY: [signature]

SHEET NUMBER: 1 of 1

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	13 S	SP	N	Y	WB	
2	13 W	"	N	Y	WB	
3	13 X	"	N	Y	WB	
4						
5						
6						
7						
8						
9						
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17						
18						
19						
20						
21						
22						
23						
24						
25						

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26						
27						
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ATLANTIC COAST CONSULTING, INC

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-24-07

REVIEWED BY:

SHEET NUMBER: 1 of 3

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	15K	VM	N	Y	WB	
2	16A	VM	N	Y	WB	
3	16B	VM	N	Y	WB	
4	16C	VM	N	Y	WB	
5	16G	VM	N	Y	WB	
6	16H	VM	N	Y	WB	
7	15T	VM	N	Y	WB	
8	15Q	VM	N	Y	WB	
9	15B	VM	N	Y	WB	
10	15C	VM	N	Y	WB	
11	15D	VM	N	Y	WB	
12	15E	VM	N	Y	WB	
13	15F	VM	N	Y	WB	
14	15G	VM	N	Y	WB	
15	15A	VM	N	Y	WB	
16	15H	VM	N	Y	WB	
17	15I	VM	N	Y	WB	
18	15J	VM	N	Y	WB	
19	15N	VM	N	Y	WB	
20	16I	VM	N	Y	WB	
21	16J	VM	N	Y	WB	
22	17C	VM	N	Y	WB	
23	16K	VM	N	Y	WB	
24	15S	VM	N	Y	WB	
25	15M	VM	N	Y	WB	

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26	16E	VM	N	Y	WB	
27	17B	VM	N	Y	WB	
28	16S	VM	N	Y	WB	
29	17A	VM	N	Y	WB	
30	16T	VM	N	Y	WB	
31	15X	VM	N	Y	WB	
32	16X	VM	N	Y	WB	
33	17F	VM	N	Y	WB	
34	18B	VM	N	Y	WB	
35	18C	VM	N	Y	WB	
36	17N	VM	N	Y	WB	
37	18J	VM	N	Y	WB	
38	18M	VM	N	Y	WB	
39	18K	VM	N	Y	WB	
40	17R	VM	N	Y	WB	
41	17W	VM	N	Y	WB	
42	18P	VM	N	Y	WB	
43	17X	VM	N	Y	WB	
44	20A	VM	N	Y	WB	
45	18X	VM	N	Y	WB	
46	18T	VM	N	Y	WB	
47	17T	VM	N	Y	WB	
48	17V	VM	N	Y	WB	
49	18S	VM	N	Y	WB	
50	18N	VM	N	Y	WB	

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-24-07

REVIEWED BY:

SHEET NUMBER: 2 of 3

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	17P	VM	N	Y	WB	
2	18I	VM	N	Y	WB	
3	18E	VM	N	Y	WB	
4	17K	VM	N	Y	WB	
5	18D	VM	N	Y	WB	
6	17H	VM	N	Y	WB	
7	17G	VM	N	Y	WB	
8	17I	VM	N	Y	WB	
9	18A	VM	N	Y	WB	
10	16V	VM	N	Y	WB	
11	15V	VM	N	Y	WB	
12	17E	VM	N	Y	WB	
13	19M	VM	N	Y	WB	
14	20D	VM	N	Y	WB	
15	20E	VM	N	Y	WB	
16	20F	VM	N	Y	WB	
17	20C	VM	N	Y	WB	
18	20G	VM	N	Y	WB	
19	19P	VM	N	Y	WB	
20	19N	VM	N	Y	WB	
21	19Q	VM	N	Y	WB	
22	19W	VM	N	Y	WB	
23	20K	VM	N	Y	WB	
24	19X	VM	N	Y	WB	
25	20M	VM	N	Y		

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
26	21J	VM	N	Y	WB	
27	21G	VM	N	Y	WB	
28	21B	VM	N	Y	WB	
29	21C	EN	N	Y	WB	
30	21I	VM	N	Y	WB	
31	21A	VM	N	Y	WB	
32	21H	EN	N	Y	WB	
33	20N	VM	N	Y	WB	
34	20J	VM	N	Y	WB	
35	20P	VM	N	Y	WB	
36	20Q	VM	N	Y	WB	
37	20R	VM	N	Y	WB	
38	20X	VM	N	Y	WB	
39	20T	VM	N	Y	WB	
40	20S	VM	N	Y	WB	
41	20V	VM	N	Y	WB	
42	20W	VM	N	Y	WB	
43	21F	VM	N	Y	WB	
44	21E	VM	N	Y	WB	
45	21D	VM	N	Y	WB	
46	19R	VM	N	Y	WB	
47	19S	VM	N	Y	WB	
48	19T	VM	N	Y	WB	
49	20H	VM	N	Y	WB	
50	19V	VM	N	Y	WB	

GEOMEMBRANE REPAIR VACUUM TEST LOG

PROJECT NUMBER: I001.113

PROJECT TITLE: CMS Landfill V Cell 2F

PROJECT LOCATION: Charlotte, North Carolina

DATE OF VACUUM TEST: 3-24-07

REVIEWED BY: [illegible]

SHEET NUMBER: 3 of 3

LINE NUMBER	DEFECT CODE	QC TECH INITIALS	OBSERVED DEFECTS	REPAIR COMPLETED YES OR NO	CQA MONITOR INITIALS	REMARKS
1	19E	KC	N	Y	WB	
2	18G	KC	N	Y	WB	
3	17J	KC	N	Y	WB	
4	18F	KC	N	Y	WB	
5	19F	KC	N	Y	WB	
6	20I	VM	N	Y	WB	
7	19A	KC	N	Y	WB	
8	19H	VM	N	Y	WB	
9	19I	VM	N	Y	WB	
10	18W	VM	N	Y	WB	
11	19J	VM	N	Y	WB	
12	18H	KC	N	Y	WB	
13	18V	VM	N	Y	WB	
14	17M	KC	N	Y	WB	
15	17S	VM	N	Y	WB	
16	17Q	VM	N	Y	WB	
17	19B	VM	N	Y	WB	
18	15W	KC	N	Y	WB	
19	16W	VM	N	Y	WB	
20	16N	VM	N	Y	WB	
21	16R	VM	N	Y	WB	
22	16P	VM	N	Y	WB	
23	16Q	VM	N	Y	WB	
24	17D	KC	N	Y	WB	
25	15P	VM	N	Y	WB	
26	15R	VM	N	Y	WB	
27	16D	VM	N	Y	WB	
28	16F	VM	N	Y	WB	
29	16M	VM	N	Y	WB	
30	18Q	VM	N	Y	WB	
31	18R	VM	N	Y	WB	
32	19C	VM	N	Y	WB	
33	19D	VM	N	Y	WB	
34	19G	VM	N	Y	WB	
35	19K	VM	N	Y	WB	
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ATLANTIC COAST CONSULTING, INC

ACC of NORTH CAROLINA, LLC

APPENDIX Q

Destructive Seam Strength Testing

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-33-09

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID: **DS-1**						
	Weld: **Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	126	130	124	128	129	127
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	114	113	116	116	118	115
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	173	173	172	170	173	172
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
	Sample ID: **DS-2**						
	Weld: **Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	140	138	138	141	140	139
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	136	128	130	134	135	133
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	180	179	180	179	178	179
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

PASS

PASS

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TRI / Environmental, Inc.
A Texas Research International Company

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-33-09

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-3**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	141	146	147	153	145	146
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
							Peel B
Side B	Peel Strength (ppi)	132	120	119	124	118	123
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	175	175	175	175	173	175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-4**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	142	134	133	139	133	136
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
							Peel B
Side B	Peel Strength (ppi)	156	154	156	147	155	154
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	177	177	178	178	175	177
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-33-09

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-5**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	150	148	149	153	146	149
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
							Peel B
Side B	Peel Strength (ppi)	148	135	140	143	143	142
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	149	149	147	150	147	148
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-6**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	142	147	144	146	147	145
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
							Peel B
Side B	Peel Strength (ppi)	121	125	124	125	119	123
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	175	173	175	174	173	174
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-33-09

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-1**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		138	148	137	146	136	141
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		146	144	149	147	145	146
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-34-09

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-7**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	131	133	133	134	136	133
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	128	133	132	132	133	132
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	182	180	181	182	179	181
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-8**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	123	123	124	125	121	123
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	126	126	128	143	137	132
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	172	170	171	169	167	170
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-34-09

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-9**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	132	137	138	135	132	135
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	140	132	138	135	136	136
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	145	144	144	144	143	144
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-10**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	145	129	132	144	139	138
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	122	128	108	124	132	123
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	179	177	177	176	174	177
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

PASS

PASS

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Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-34-09

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-11**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	131	145	139	144	138	Peel A: 139
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	136	133	128	139	140	Peel B: 135
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	170	168	169	167	167	Shear: 168
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-12**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	137	125	137	145	136	Peel A: 136
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	141	121	121	137	125	Peel B: 129
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	170	168	167	168	167	Shear: 168
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

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Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-34-09

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-13**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	140	141	138	138	135	Peel A: 138
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	120	120	124	120	120	Peel B: 121
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	178	174	176	174	175	Shear: 175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-14**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	129	130	128	124	128	Peel A: 128
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	113	113	115	116	111	Peel B: 114
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	175	173	175	177	173	Shear: 175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-36-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID: **DS-15**						
	Weld: **Heat Fusion**						
Side A	Peel Strength (ppi)	138	136	137	140	140	Peel A: 138
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	Pass
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	125	127	128	142	138	Peel B: 132
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	174	173	173	174	174	Shear: 174
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
	Sample ID: **DS-16**						
	Weld: **Heat Fusion**						
Side A	Peel Strength (ppi)	137	146	145	138	134	Peel A: 140
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	Pass
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	121	118	117	116	118	Peel B: 118
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	166	164	166	168	164	Shear: 166
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-36-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-17**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	126	131	135	123	121	Peel A: 127
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	129	121	123	128	128	Peel B: 126
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	Pass
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	171	166	168	170	168	Shear: 169
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-18**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	131	131	136	143	142	Peel A: 137
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	Pass
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	110	113	111	112	125	Peel B: 114
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	171	169	171	171	169	Shear: 170
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-36-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-19**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	145	134	132	123	135	134
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	119	142	119	127	123	126
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	183	181	185	183	183	183
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-20**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	139	139	134	142	139	139
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	118	114	131	120	129	122
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	174	172	173	172	171	172
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-36-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-21**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	131	127	122	123	119	124
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	126	111	111	112	110	114
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	174	173	174	175	172	174
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DX-2**						
Weld:	**Single Extrusion**						
							Peel
	Peel Strength (ppi)	92	96	88	93	78	89
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	152	150	153	156	151	152
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Failed

See DX-2A & DX-2B4 for Retests

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-37-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID: **DS-22**						
	Weld: **Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	141	143	132	142	152	142
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	118	118	121	126	122	121
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	176	175	175	175	176	175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
	Sample ID: **DS-23**						
	Weld: **Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	152	154	150	151	151	152
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	122	125	119	122	121	122
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	171	171	170	172	168	170
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-37-01

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-24**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	125	133	139	135	134	Peel A: 133
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	138	137	132	132	133	Peel B: 134
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	140	136	138	136	137	Shear: 137
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-25**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	140	132	128	143	116	Peel A: 132
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	148	146	152	144	145	Peel B: 147
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	177	172	176	176	173	Shear: 175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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TRI / Environmental, Inc.
A Texas Research International Company

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-37-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-26**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	124	129	126	127	126	126
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	122	120	127	119	113	120
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	173	169	172	173	170	171
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-27**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	115	117	112	124	112	116
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	106	111	103	110	103	107
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	172	170	170	172	170	171
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-37-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID: DS-28						
	Weld: Heat Fusion						
Side A	Peel Strength (ppi)	141	142	145	140	144	Peel A: 142
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	147	146	145	147	148	Peel B: 147
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	151	148	146	149	149	Shear: 149
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
	Sample ID: DS-29						
	Weld: Heat Fusion						
Side A	Peel Strength (ppi)	138	143	131	134	139	Peel A: 137
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	116	115	116	114	116	Peel B: 115
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	169	169	167	169	168	Shear: 168
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-37-01

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-30**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	128	127	123	131	126	Peel A: 127
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	PASS
Side B	Peel Strength (ppi)	120	115	129	138	125	Peel B: 125
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	167	164	166	165	161	Shear: 165
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-31**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	135	134	136	137	133	Peel A: 135
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	PASS
Side B	Peel Strength (ppi)	128	128	129	128	133	Peel B: 129
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	172	175	174	177	173	Shear: 174
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-37-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-32**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	120	123	123	122	120	122
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	123	135	128	118	133	127
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	173	171	173	173	173	173
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-33**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	126	132	142	142	129	134
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	120	111	116	136	125	122
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	177	175	173	176	172	175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-37-01

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-3**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		97	108	133	99	96	107
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		148	153	154	150	151	151
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-38-01

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-34**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	141	142	142	143	144	Peel A: 142
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	Pass
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	139	136	133	136	138	Peel B: 136
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	188	183	183	186	181	Shear: 184
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-35**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	136	135	132	128	135	Peel A: 133
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	Pass
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	149	143	146	146	144	Peel B: 146
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	190	189	189	193	188	Shear: 190
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-38-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-36**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	133	132	134	134	126	132
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	113	112	116	116	115	114
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	170	171	172	174	170	171
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-37**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	127	122	121	125	122	123
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	120	116	117	111	113	115
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	183	180	183	183	178	181
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-38-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-38**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	143	150	146	148	132	144
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
							Peel B
Side B	Peel Strength (ppi)	151	150	145	140	135	144
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	173	174	171	175	174	173
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-39**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	134	149	144	149	146	144
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
							Peel B
Side B	Peel Strength (ppi)	123	125	124	122	120	123
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	184	184	184	188	184	185
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-38-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-40**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	153	152	155	154	154	Peel A: 154
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	118	111	113	112	112	Peel B: 113 (Pass)
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	179	176	180	181	177	Shear: 179
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-41**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	151	133	149	146	134	Peel A: 143 (Pass)
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	126	133	126	132	125	Peel B: 128
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	174	174	176	176	173	Shear: 175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-38-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-42**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	122	117	119	116	120	119
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	120	131	130	126	123	126
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	174	176	177	177	175	176
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DX-2A**						
Weld:	**Single Extrusion**						
							Peel
	Peel Strength (ppi)	104	118	129	142	100	119
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	153	154	152	151	152	152
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

Retest DX-2 in the shear direction

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-38-01

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-2B**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		75	86	108	84	105	92
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		153	152	153	154	151	153
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	
Sample ID:	**DX-4**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		117	123	125	103	113	116
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		148	149	150	149	150	149
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Failed
See DX-282
Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-39-02

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-2B2**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		95	100	95	128	73	98
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		143	142	144	142	141	142
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	
Sample ID:	**DX-5**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		147	150	151	151	147	149
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		149	146	145	145	142	145
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Failed
See DX-2B3

Pass

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TRI / Environmental, Inc.
A Texas Research International Company

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-40-04

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-2B3**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		75	72	94	110	85	87
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		157	154	153	154	149	153
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Failed

See DX-2B4

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-41-04

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-2B4**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		111	104	106	111	114	109
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		142	143	150	145	144	145
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Pass

Retest for DX-2 in the Backward direction.

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TRI / Environmental, Inc.
A Texas Research International Company

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-39-02

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-6**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		133	139	132	141	136	136
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		160	159	155	160	154	158
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-39-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-43**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	126	126	124	124	126	125
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	111	110	106	107	107	108
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	177	176	176	175	175	176
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-44**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	139	133	127	147	125	134
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	127	128	135	140	127	131
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	179	178	177	181	178	179
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-39-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-45**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	121	131	122	121	122	123
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	131	130	134	130	128	131
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	169	169	169	168	168	169
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-46**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	149	153	145	152	147	149
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	141	147	153	150	150	148
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	150	149	152	151	152	151
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

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Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-39-02

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-47**						
Weld:	**Heat Fusion**						
							Peel A
Side A Peel Strength (ppi)		124	140	124	142	123	131
Side A Peel Incursion (%)		<10	<10	<10	<10	<10	
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B Peel Strength (ppi)		138	127	138	127	135	133
Side B Peel Incursion (%)		<10	<10	<10	<10	<10	
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		173	171	172	174	172	172
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	
Sample ID:	**DS-48**						
Weld:	**Heat Fusion**						
							Peel A
Side A Peel Strength (ppi)		139	141	141	145	143	142
Side A Peel Incursion (%)		<10	<10	<10	<10	<10	
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B Peel Strength (ppi)		109	115	119	110	120	115
Side B Peel Incursion (%)		<10	<10	<10	<10	<10	
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		178	175	177	176	177	177
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-39-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-49**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	125	127	124	125	124	125
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	126	126	128	126	135	128
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	174	173	174	175	175	174
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-50**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	121	123	120	124	122	122
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	112	111	111	115	110	112
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	175	174	176	175	176	175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-39-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID: DS-51						
	Weld: Heat Fusion						
							Peel A
Side A	Peel Strength (ppi)	135	134	135	119	126	130
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	137	134	142	138	147	140
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	182	181	183	185	181	182
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
	Sample ID: DS-52						
	Weld: Heat Fusion						
							Peel A
Side A	Peel Strength (ppi)	150	143	146	153	143	147
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	130	115	119	118	121	121
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	170	170	170	172	172	171
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-42-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID: DS-53						
	Weld: Heat Fusion						
							Peel A
Side A	Peel Strength (ppi)	131	132	128	127	129	129
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	129	127	125	127	128	127
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	167	166	163	169	165	166
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
	Sample ID: DS-54						
	Weld: Heat Fusion						
							Peel A
Side A	Peel Strength (ppi)	128	129	129	137	128	130
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	132	140	144	141	132	138
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	167	165	166	166	170	167
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-42-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID: DS-55						
	Weld: Heat Fusion						
Side A	Peel Strength (ppi)	125	125	122	124	124	Peel A: 124
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	131	129	120	129	131	Peel B: 128
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	168	163	165	166	164	Shear: 165
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
	Sample ID: DS-56						
	Weld: Heat Fusion						
Side A	Peel Strength (ppi)	123	121	122	123	122	Peel A: 122
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	115	113	139	106	116	Peel B: 118
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	168	169	170	171	170	Shear: 170
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

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TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-42-02

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-57**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	132	138	141	137	139	Peel A: 137
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	121	119	124	116	125	Peel B: 121
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	178	173	175	176	175	Shear: 175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-58**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	142	125	128	126	125	Peel A: 129
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	140	133	123	142	147	Peel B: 137
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	170	170	169	170	170	Shear: 170
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-42-02

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-59**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	121	122	123	123	127	Peel A: 123
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	127	136	131	124	133	Peel B: 130 (Pass)
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	169	168	167	168	166	Shear: 168
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-60**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	139	142	139	141	141	Peel A: 140 (Pass)
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	118	118	117	119	117	Peel B: 118
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	166	165	164	164	162	Shear: 164
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-42-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-61**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	141	137	139	139	135	Peel A: 138
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	140	121	96	119	122	Peel B: 120
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	169	165	167	168	167	Shear: 167
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-62**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	148	146	145	143	145	Peel A: 145
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	115	112	114	112	108	Peel B: 112
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	169	167	166	167	166	Shear: 167
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-43-06

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-63**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	126	128	127	136	124	128
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	130	131	136	125	120	128
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	161	163	164	164	164	163
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-64**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	125	127	127	128	126	127
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	110	109	107	107	107	108
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	166	162	159	158	157	160
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-43-06

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID: DS-65						
	Weld: Heat Fusion						
Side A	Peel Strength (ppi)	123	115	127	124	126	Peel A: 123
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	140	128	134	134	144	Peel B: 136
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	164	163	163	163	161	Shear: 163
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
	Sample ID: DS-66						
	Weld: Heat Fusion						
Side A	Peel Strength (ppi)	124	108	128	124	121	Peel A: 121
Side A	Peel Incursion (%)	<10	<10	<10	25	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	AD-BRK	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	125	126	104	124	127	Peel B: 121
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	138	133	136	138	136	Shear: 136
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log #: E2277-43-06

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-67**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	121	117	117	115	119	118
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	117	105	124	102	119	113
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	176	174	175	177	175	175
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-68**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	131	133	133	134	136	133
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	120	114	113	120	119	117
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	168	165	164	166	166	166
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-43-06

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-69**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	128	127	131	132	129	Peel A: 129
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	140	139	131	127	132	Peel B: 134 (Pass)
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	170	165	167	169	168	Shear: 168
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-70**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	122	118	119	117	117	Peel A: 119
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	(Pass)
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	111	113	137	115	112	Peel B: 118
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	167	167	168	168	166	Shear: 167
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-42-02

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-7**						
Weld:	**Single Extrusion**						
							Peel
Peel Strength (ppi)		134	124	144	126	135	133
Peel Incursion (%)		<10	<10	<10	<10	<10	
Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
							Shear
Shear Strength (ppi)		152	150	154	151	151	152
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-43-06

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-71**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	144	127	132	126	125	131
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	134	135	135	127	142	135
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	166	165	165	166	164	165
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DX-8**						
Weld:	**Single Extrusion**						
							Peel
	Peel Strength (ppi)	118	97	118	104	98	107
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	139	138	137	138	139	138
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-44-10

		TEST REPLICATE NUMBER					
PARAMETER		**1**	**2**	**3**	**4**	**5**	**MEAN**
Sample ID:	**DS-72**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	126	131	131	129	133	130
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	104	108	110	114	109	109
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	172	170	167	171	165	169
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-73**						
Weld:	**Heat Fusion**						
							Peel A
Side A	Peel Strength (ppi)	141	134	134	134	135	136
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Peel B
Side B	Peel Strength (ppi)	137	135	138	130	141	136
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	147	147	146	148	146	147
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-44-10

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-74**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	127	129	133	132	143	Peel A: 133
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	129	141	122	124	117	Peel B: 127
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	161	160	161	161	161	Shear: 161
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-75**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	120	117	120	121	120	Peel A: 120
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side B	Peel Strength (ppi)	111	113	98	115	111	Peel B: 110
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	160	162	163	163	160	Shear: 162
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-44-10

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DS-76**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	147	145	139	130	136	Peel A: 139
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	124	121	119	125	122	Peel B: 122
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	167	165	166	169	163	Shear: 166
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DS-77**						
Weld:	**Heat Fusion**						
Side A	Peel Strength (ppi)	130	132	123	131	126	Peel A: 128
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	Pass
Side B	Peel Strength (ppi)	138	139	145	141	137	Peel B: 140
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
	Shear Strength (ppi)	167	165	165	167	165	Shear: 166
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-44-10

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
	Sample ID:	**DS-78**						
	Weld:	**Heat Fusion**						
								Peel A
Side A	Peel Strength (ppi)		127	129	129	130	128	129
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
								Peel B
Side B	Peel Strength (ppi)		112	112	116	114	114	114
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10	
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE	
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB	
								Shear
	Shear Strength (ppi)		137	136	137	138	138	137
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50	

Pass

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Atlantic Coast Consulting, Inc. (ACC)
Project: Charlotte Motor Speedway

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2277-44-10

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN
Sample ID:	**DX-9**						
Weld:	**Single Extrusion**						
							Peel
Side A	Peel Strength (ppi)	135	127	142	138	131	135
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10	
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	142	141	139	140	140	140
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID:	**DX-10**						
Weld:	**Single Extrusion**						
							Peel
	Peel Strength (ppi)	111	116	116	127	116	117
	Peel Incursion (%)	<10	<10	<10	<10	<10	
	Peel Locus of Failure Code	SE	SE	SE	SE	SE	
	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
							Shear
	Shear Strength (ppi)	152	150	153	151	153	152
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Pass

Pass

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ACC of NORTH CAROLINA, LLC

APPENDIX R
Protective Cover Laboratory Test Results

TIMELY ENGINEERING SOIL TESTS, LLC
1874 Forge Street Tucker, GA 30084
Phone: 770-938-8233 Fax: 770-923-8973
Cell: 678-612-6534
Web: www.test-llc.com

Summary of Soil Testing (PC-Samples)

Project Number: 688

Project Name: CMS Landfill - Cell 2F

T.E.S.T. Sample Number	Client Sample Number	USCS	UCS, psi	Moisture Content (%)	Grain Size Distribution			Atterberg Limits			Proctor		Hydraulic Conductivity		
					%Finer 3" Sieve	% Finer #4 Sieve	% Finer 0.005mm	L.L. %	P.L. %	P.I. %	Opt. M.C. %	Max.Dry. Density pcf	Initial M.C. %	Init.Dry Density pcf	Hydraulic Conduct. cm/sec
2437	PC-1	-	-	-	100.0	97.3	-	-	-	-	-	-	-	-	-
2438	PC-2	-	-	-	100.0	93.9	-	-	-	-	-	-	-	-	-
2439	PC-3	-	-	-	100.0	97.4	-	-	-	-	-	-	-	-	-
2440	PC-4	-	-	-	100.0	95.7	-	-	-	-	-	-	-	-	-
2441	PC-5	-	-	-	100.0	98.0	-	-	-	-	-	-	-	-	-
2442	PC-6	-	-	-	100.0	97.9	-	-	-	-	-	-	-	-	-

TIMELY ENGINEERING SOIL TESTS, LLC

1874 Forge Street Tucker, GA 30084
Phone: 770-938-8233
Fax: 770-923-8973
Web: www.test-llc.com

AASHTO R18

Tested By	RI
Date	03/27/07
Checked By	LA

ASTM C 136/D 6913 (D 422 old version)

Standard Test Method for Particle Size Analysis (Single Requested Sieve Size)

Client Pr. #	-	Lab. PR. #	688-07
Pr. Name	CMS LANDFILL.- CELL 2F	S. Type	BULK
Sample ID	2437/PC-1	Depth/Elev.	-
Location	-	Add. Info	-

AS-RECEIVED MOISTURE CONTENT

Mass of Wet Sample & Tare, g	449.0
Mass of Dry Sample & Tare, g	410.4
Mass of Tare, g	104.2
Moisture Content, %	12.6

REMARKS

REQUESTED SIEVE SIZE	#4

100% passing 6" sieve.

SIEVE ANALYSIS

Mass of wet sample used for sieve analysis & tare, g	17858.0
Mass of tare, g	0.0
Mass of dry sample used for sieve analysis, g	15862.0

Mass of Tare, g	0.0
Mass of sample retained on requested sieve and tare, g	432.3
Percent of sample retained on requested sieve	2.7
Percent of material finer than requested sieve, %	97.3

DESCRIPTION: NA

USCS (ASTM D2487; D2488): NA

AASHTO (M 145): NA

Requested sieve ID #	31
Balance ID #	1/6/7/79
Oven ID #	12/13/14

TIMELY ENGINEERING SOIL TESTS, LLC

1874 Forge Street Tucker, GA 30084
Phone: 770-938-8233
Fax: 770-923-8973
Web: www.test-llc.com

Tested By	RI
Date	03/27/07
Checked By	

ASTM C 136/D 6913 (D 422 old version)

Standard Test Method for Particle Size Analysis (Single Requested Sieve Size)

Client Pr. #	-	Lab. PR. #	688-07
Pr. Name	CMS LANDFILL - CELL 2F	S. Type	BULK
Sample ID	2438/PC-2	Depth/Elev.	-
Location	-	Add. Info	-

AS-RECEIVED MOISTURE CONTENT

Mass of Wet Sample & Tare, g	454.7
Mass of Dry Sample & Tare, g	417.4
Mass of Tare, g	89.3
Moisture Content, %	11.4

REMARKS

REQUESTED SIEVE SIZE	#4

100% passing 6" sieve.

SIEVE ANALYSIS

Mass of wet sample used for sieve analysis & tare, g	15648.0
Mass of tare, g	0.0
Mass of dry sample used for sieve analysis, g	14048.7

Mass of Tare, g	0.0
Mass of sample retained on requested sieve and tare, g	862.7
Percent of sample retained on requested sieve	6.1

Percent of material finer than requested sieve, %	93.9

DESCRIPTION: NA

USCS (ASTM D2487; D2488): NA

AASHTO (M 145): NA

Requested sieve ID #	31
Balance ID #	1/6/7/79
Oven ID #	12/13/14

TIMELY ENGINEERING SOIL TESTS, LLC

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Phone: 770-938-8233
Fax: 770-923-8973
Web: www.test-llc.com

AASHTO R18

Tested By	RI
Date	03/27/07
Checked By	

ASTM C 136/D 6913 (D 422 old version)

Standard Test Method for Particle Size Analysis (Single Requested Sieve Size)

Client Pr. #	-	Lab. PR. #	688-07
Pr. Name	CMS LANDFILL - CELL 2F	S. Type	BULK
Sample ID	2439/PC-3	Depth/Elev.	-
Location	-	Add. Info	-

AS-RECEIVED MOISTURE CONTENT

Mass of Wet Sample & Tare, g	669.1
Mass of Dry Sample & Tare, g	630.3
Mass of Tare, g	300.1
Moisture Content, %	11.7

REMARKS

REQUESTED SIEVE SIZE #4

100% passing 6" sieve.

SIEVE ANALYSIS

Mass of wet sample used for sieve analysis & tare, g	15500.0
Mass of tare, g	0.0
Mass of dry sample used for sieve analysis, g	13872.0

Mass of Tare, g	0.0
Mass of sample retained on requested sieve and tare, g	355.1
Percent of sample retained on requested sieve	2.6

Percent of material finer than requested sieve, % 97.4

DESCRIPTION: NA

USCS (ASTM D2487; D2488): NA

AASHTO (M 145): NA

Requested sieve ID #	31
Balance ID #	1/6/7/79
Oven ID #	12/13/14

TIMELY ENGINEERING SOIL TESTS, LLC

1874 Forge Street Tucker, GA 30084
Phone: 770-938-8233
Fax: 770-923-8973
Web: www.test-llc.com

AASHTO R18

Tested By	RI
Date	03/27/07
Checked By	

ASTM C 136/D 6913 (D 422 old version)

Standard Test Method for Particle Size Analysis (Single Requested Sieve Size)

Client Pr. #	-	Lab. PR. #	688-07
Pr. Name	CMS LANDFILL - CELL 2F	S. Type	BULK
Sample ID	2440/PC-4	Depth/Elev.	-
Location	-	Add. Info	-

AS-RECEIVED MOISTURE CONTENT

Mass of Wet Sample & Tare, g	662.5
Mass of Dry Sample & Tare, g	624.1
Mass of Tare, g	300.7
Moisture Content, %	11.9

REMARKS

REQUESTED SIEVE SIZE	#4

100% passing 6" sieve.

SIEVE ANALYSIS

Mass of wet sample used for sieve analysis & tare, g	19400.0
Mass of tare, g	0.0
Mass of dry sample used for sieve analysis, g	17339.9

Mass of Tare, g	0.0
Mass of sample retained on requested sieve and tare, g	749.4
Percent of sample retained on requested sieve	4.3

Percent of material finer than requested sieve, %	95.7

DESCRIPTION: NA

USCS (ASTM D2487; D2488): NA

AASHTO (M 145): NA

Requested sieve ID #	31
Balance ID #	1/6/7/79
Oven ID #	12/13/14

TIMELY ENGINEERING SOIL TESTS, LLC

1874 Forge Street Tucker, GA 30084
Phone: 770-938-8233
Fax: 770-923-8973
Web: www.test-llc.com

AASHTO R18

Tested By	RI
Date	03/27/07
Checked By	LB

ASTM C 136/D 6913 (D 422 old version)

Standard Test Method for Particle Size Analysis (Single Requested Sieve Size)

Client Pr. #	-	Lab. PR. #	688-07
Pr. Name	CMS LANDFILL - CELL 2F	S. Type	BULK
Sample ID	2441/PC-5	Depth/Elev.	-
Location	-	Add. Info	-

AS-RECEIVED MOISTURE CONTENT

Mass of Wet Sample & Tare, g	694.2
Mass of Dry Sample & Tare, g	652.5
Mass of Tare, g	301.1
Moisture Content, %	11.9

REMARKS

REQUESTED SIEVE SIZE #4

100% passing 6" sieve.

SIEVE ANALYSIS

Mass of wet sample used for sieve analysis & tare, g	16350.0
Mass of tare, g	0.0
Mass of dry sample used for sieve analysis, g	14612.2

Mass of Tare, g	0.0
Mass of sample retained on requested sieve and tare, g	285.9
Percent of sample retained on requested sieve	2.0

Percent of material finer than requested sieve, % 98.0

DESCRIPTION: NA

USCS (ASTM D2487; D2488): NA

AASHTO (M 145): NA

Requested sieve ID #	31
Balance ID #	1/6/7/79
Oven ID #	12/13/14

TIMELY ENGINEERING SOIL TESTS, LLC

1874 Forge Street Tucker, GA 30084
Phone: 770-938-8233
Fax: 770-923-8973
Web: www.test-llc.com

AASHTO R18

Tested By	RI
Date	03/27/07
Checked By	

ASTM C 136/D 6913 (D 422 old version)

Standard Test Method for Particle Size Analysis (Single Requested Sieve Size)

Client Pr. #	-	Lab. PR. #	688-07
Pr. Name	CMS LANDFILL - CELL 2F	S. Type	BULK
Sample ID	2442/PC-6	Depth/Elev.	-
Location	-	Add. Info	-

AS-RECEIVED MOISTURE CONTENT

Mass of Wet Sample & Tare, g	649.3
Mass of Dry Sample & Tare, g	610.5
Mass of Tare, g	301.0
Moisture Content, %	12.6

REMARKS

REQUESTED SIEVE SIZE #4

100% passing 6" sieve.

SIEVE ANALYSIS

Mass of wet sample used for sieve analysis & tare, g	15620.0
Mass of tare, g	0.0
Mass of dry sample used for sieve analysis, g	13877.4

Mass of Tare, g	0.0
Mass of sample retained on requested sieve and tare, g	291.2
Percent of sample retained on requested sieve	2.1

Percent of material finer than requested sieve, % 97.9

DESCRIPTION: NA

USCS (ASTM D2487; D2488): NA

AASHTO (M 145): NA

Requested sieve ID #	31
Balance ID #	1/6/7/79
Oven ID #	12/13/14