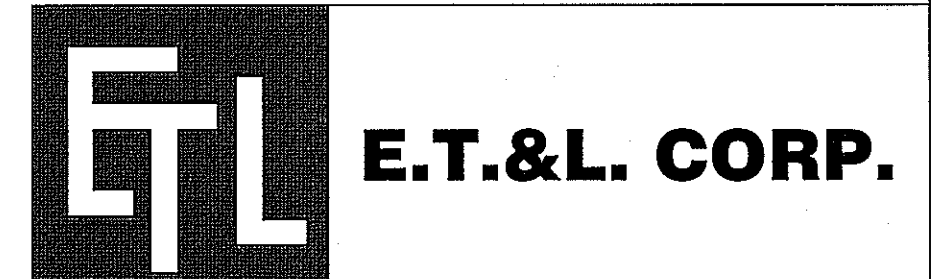
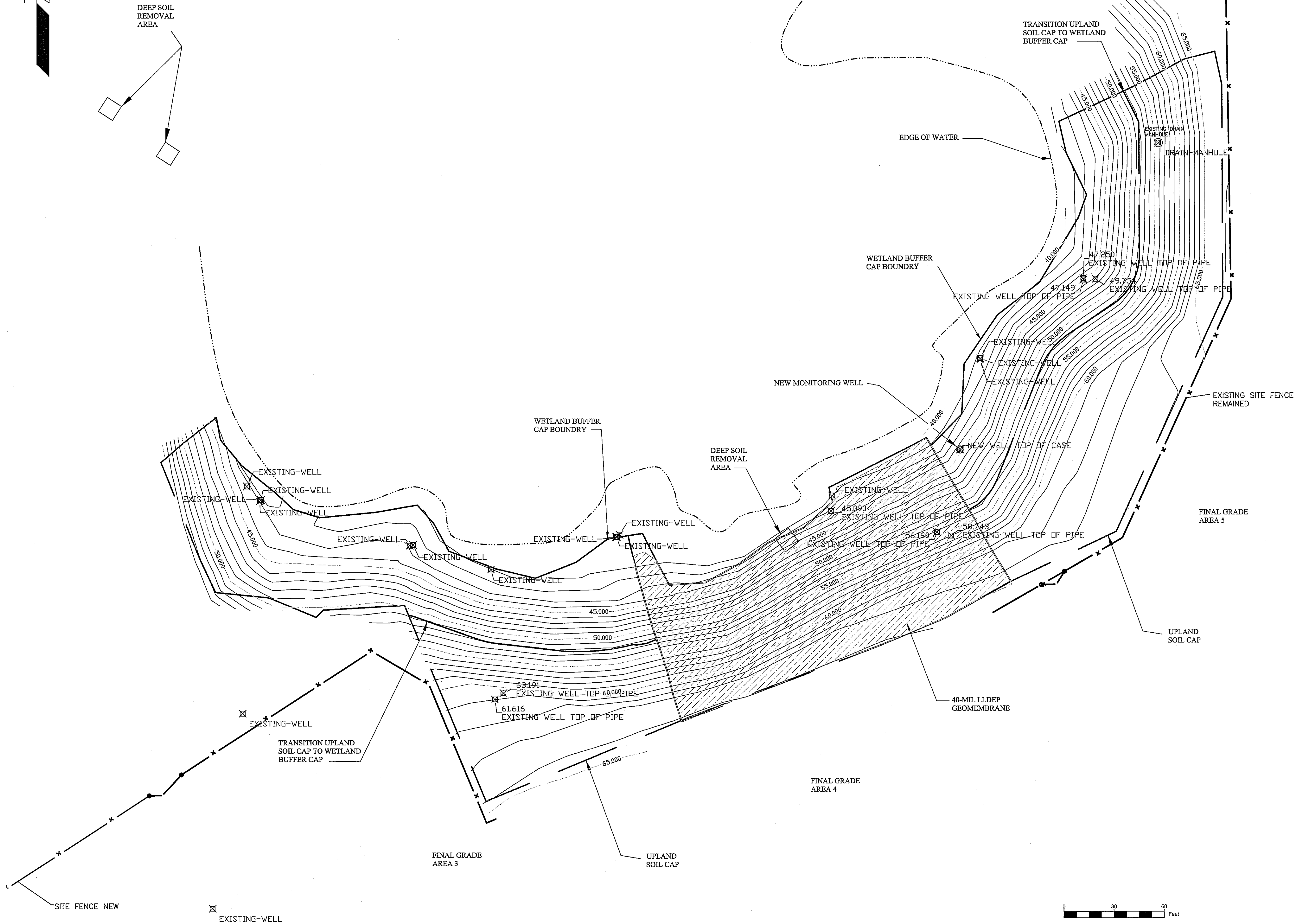
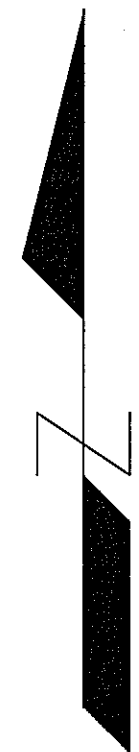




APPENDIX G
AS-BUILT DOCUMENTATION

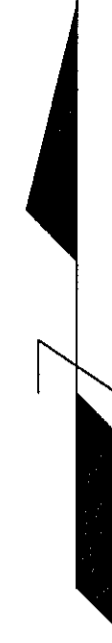


PARCEL C-1 PHASE 1 CAP
TEXTRON, INC.
FORMER GORHAM MANUFACTURING SITE
333 ADELAIDE AVENUE, PROVIDENCE RI

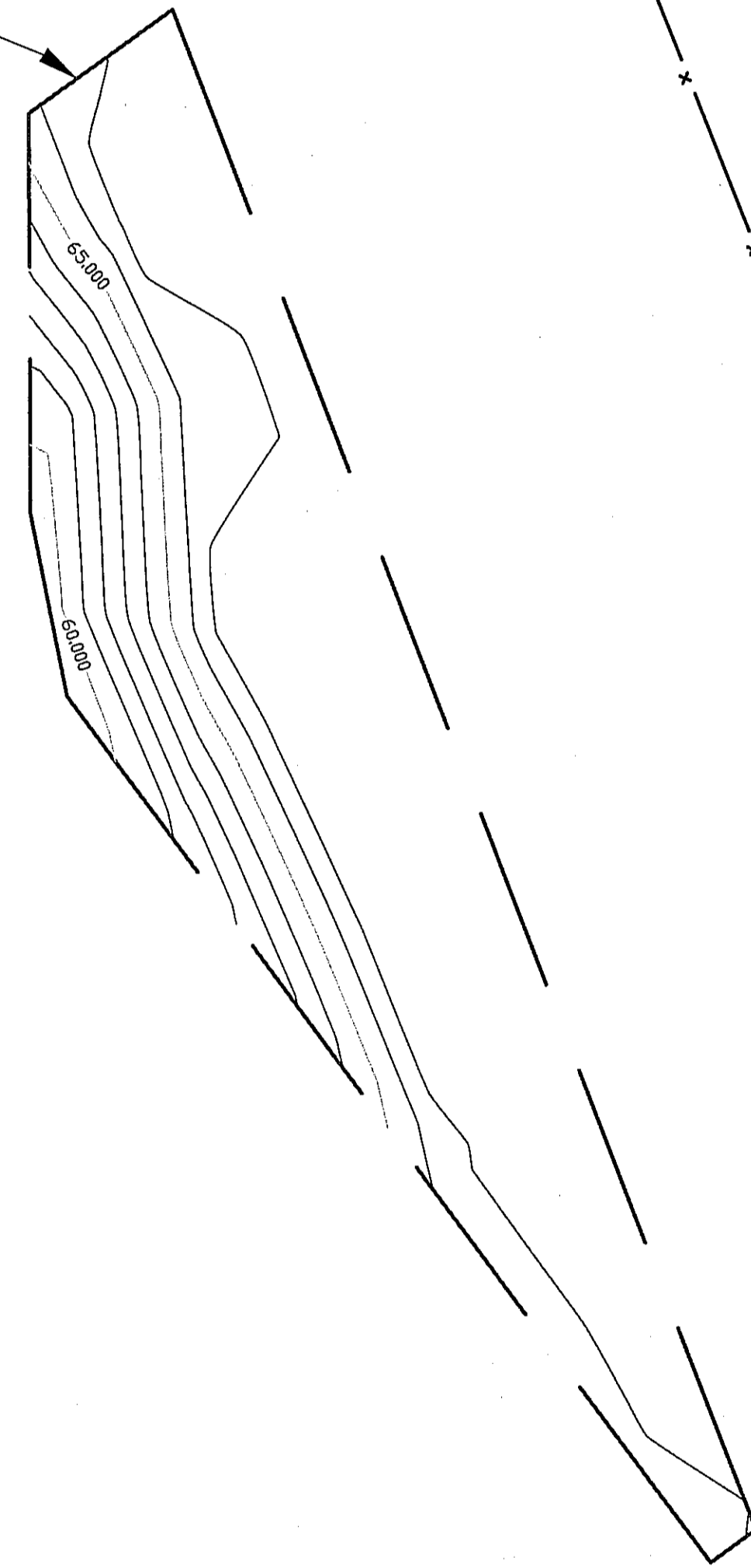
FINAL GRADE AS-BUILT	ET&L PROJ. #: 12-09	REV. 0
DATE: 01/8/2013	SCALE: 1" = 30'	



FINAL GRADE
AREA 2

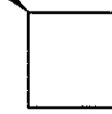


UPLAND
SOIL CAP



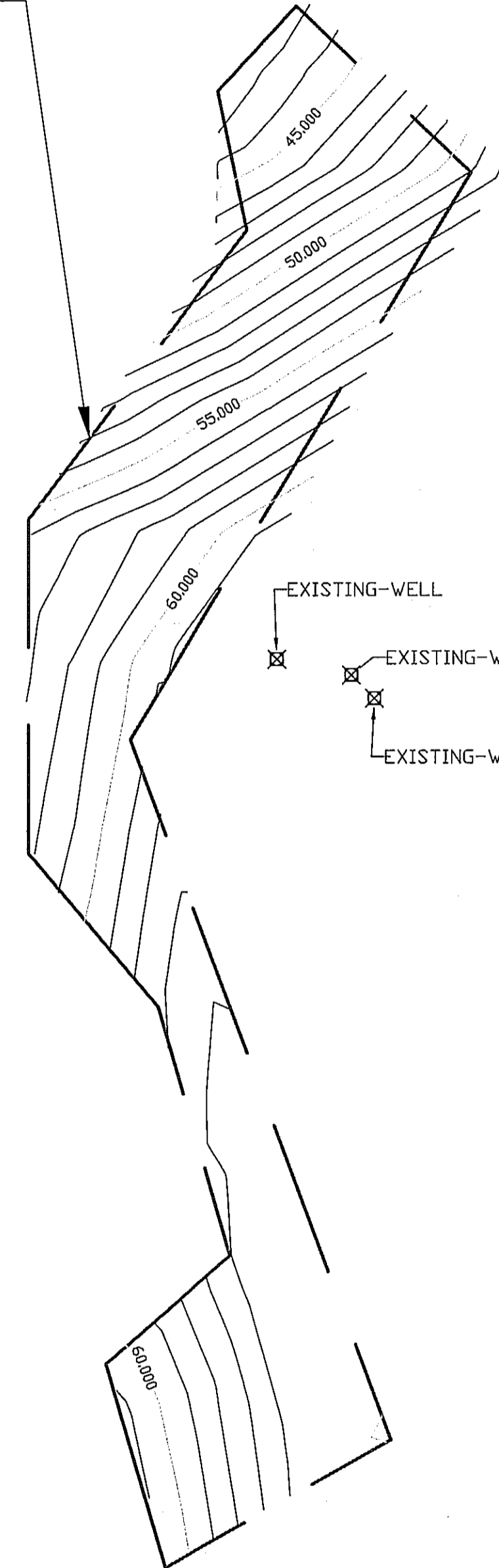
FINAL GRADE
AREA 1

DEEP SOIL
REMOVAL
AREA



EXISTING-WELL

UPLAND
SOIL CAP



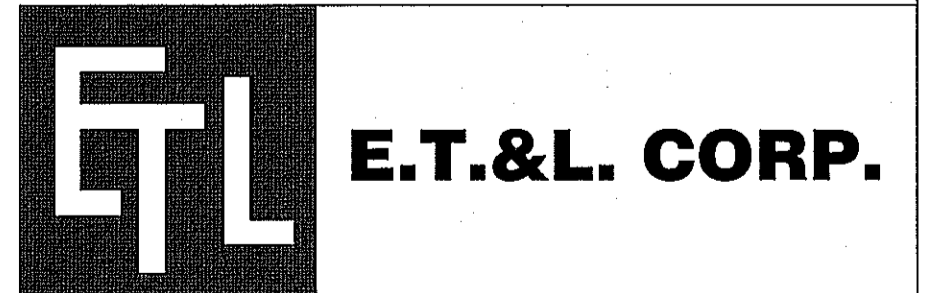
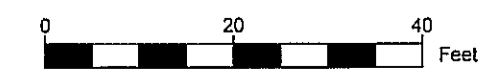
FINAL GRADE
AREA 2

EXISTING-WELL
EXISTING-WELL
EXISTING-WELL

SITE FENCE NEW

EXISTING-WELL

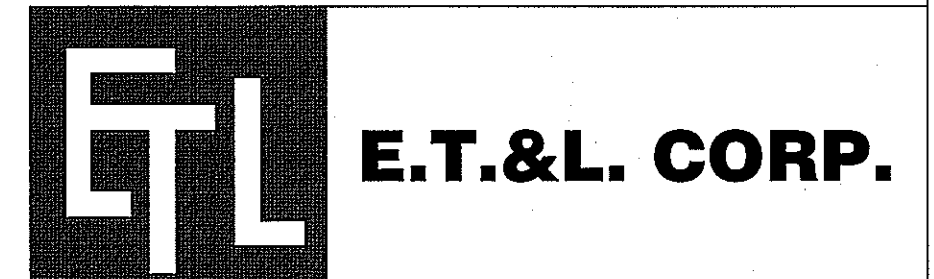
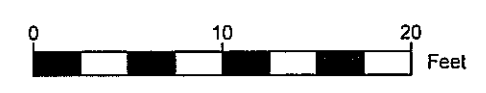
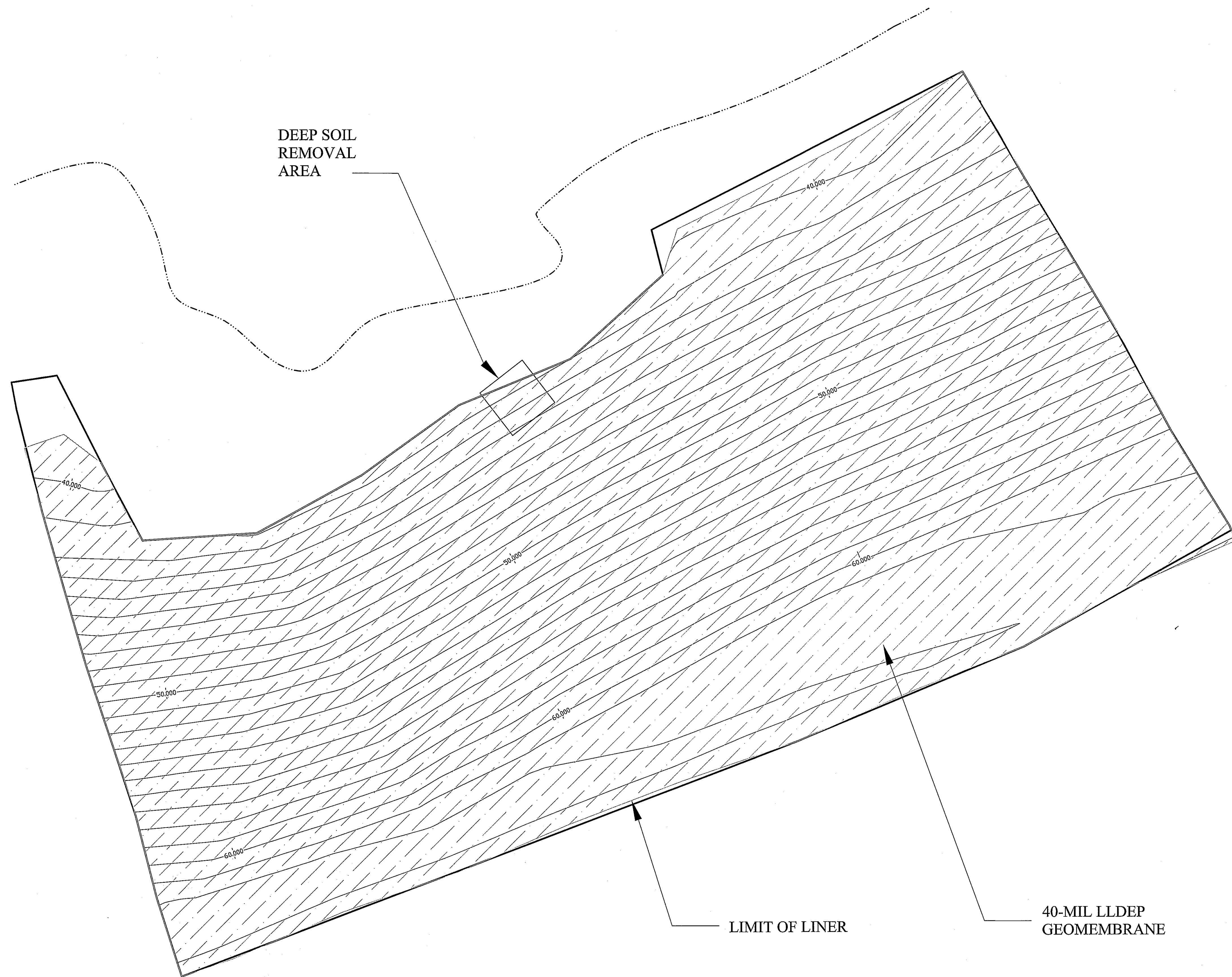
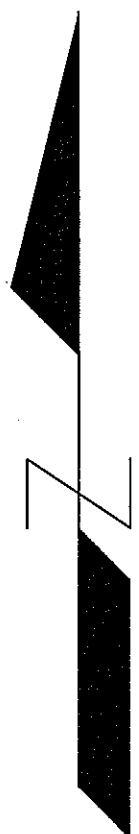
EXISTING



E.T.&L. CORP.

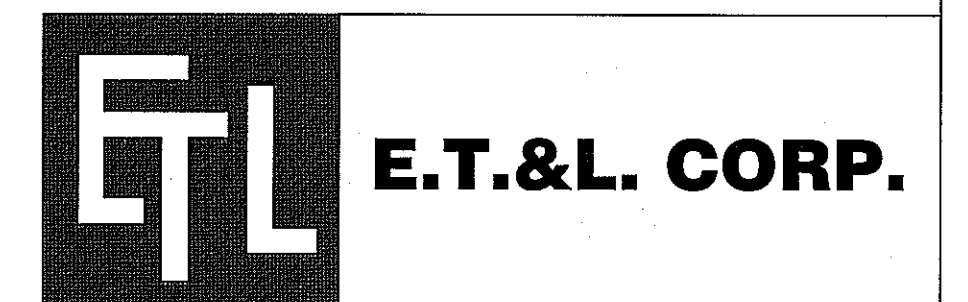
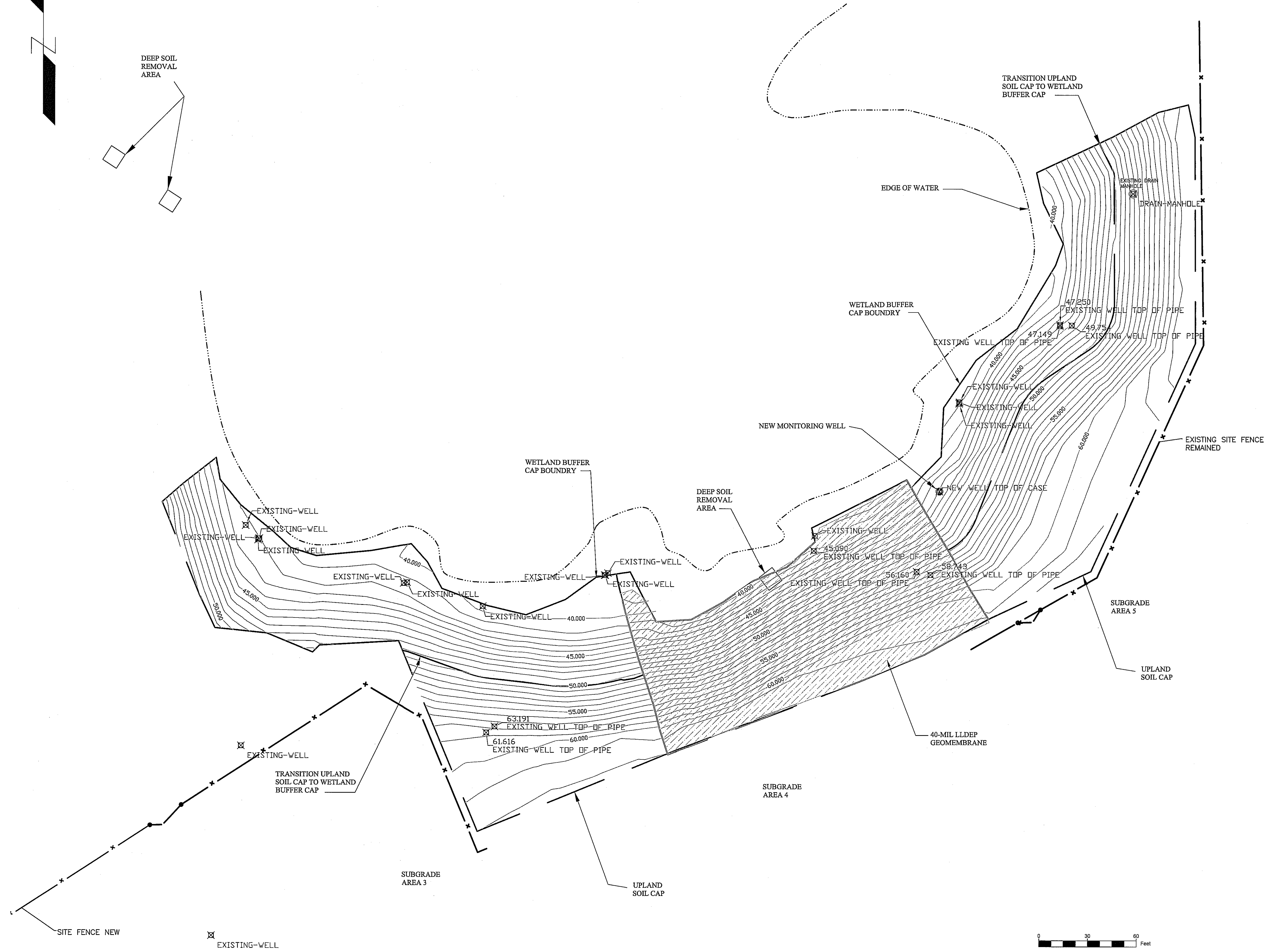
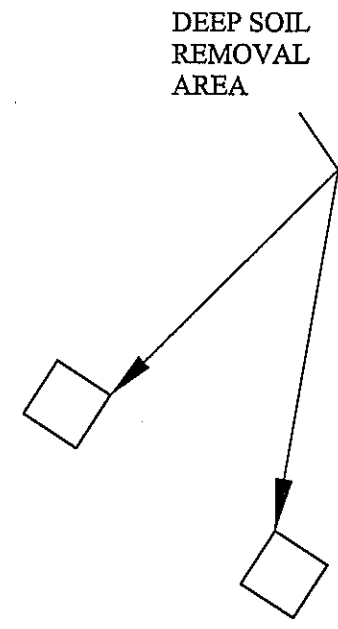
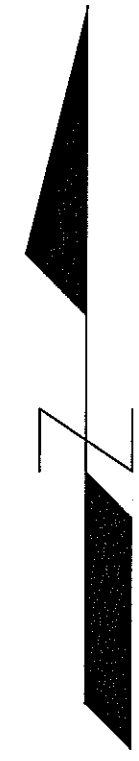
PARCEL C-1 PHASE 1 CAP
TEXTRON, INC.
FORMER GORHAM MANUFACTURING SITE
333 ADELAIDE AVENUE, PROVIDENCE RI

FINAL GRADE AS-BUILT	ET&L PROJ. #: 12-09	REV.
DATE: 01/8/2013	SCALE: 1" = 20'	0



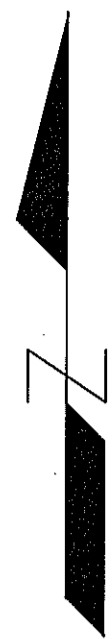
PARCEL C-1 PHASE 1 CAP
TEXTRON, INC.
FORMER GORHAM MANUFACTURING SITE
333 ADELAIDE AVENUE, PROVIDENCE RI

LINER AS-BUILT	ET&L PROJ. #: 12-09	REV.
DATE: 01/8/2013	SCALE: 1" = 10'	0



ET&L CORP.
PARCEL C-1 PHASE 1 CAP
TEXTRON, INC.
FORMER GORHAM MANUFACTURING SITE
333 ADELAIDE AVENUE, PROVIDENCE RI

SUBGRADE AS-BUILT	ET&L PROJ. #: 12-09
DATE: 01/8/2013	SCALE: 1" = 30' REV. 0



UPLAND SOIL CAP

SUBGRADE AREA 1

DEEP SOIL REMOVAL AREA

EXISTING-WELL

SUBGRADE AREA 2

UPLAND SOIL CAP

SUBGRADE AREA 2

EXISTING-WELL

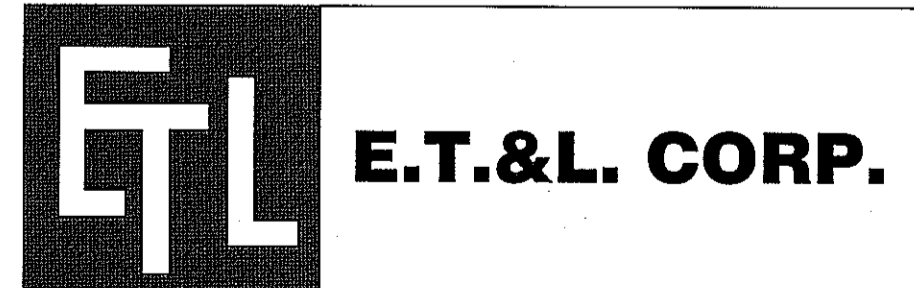
EXISTING-WELL

EXISTING-WELL

SITE FENCE NEW

EXISTING-WELL

EXISTING



PARCEL C-1 PHASE 1 CAP
TEXTRON, INC.
FORMER GORHAM MANUFACTURING SITE
333 ADELAIDE AVENUE, PROVIDENCE RI

SUBGRADE AS-BUILT	ET&L PROJ. #: 12-09
DATE: 01/8/2013	SCALE: 1" = 20'
	REV. 0



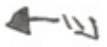
APPENDIX H

COMPACTION TEST RESULTS

Textron, Inc.
Remedial Action Closure Report – Parcel C-1 Phase I CAP
Former Gorham Manufacturing Facility, Providence, RI
April 2013

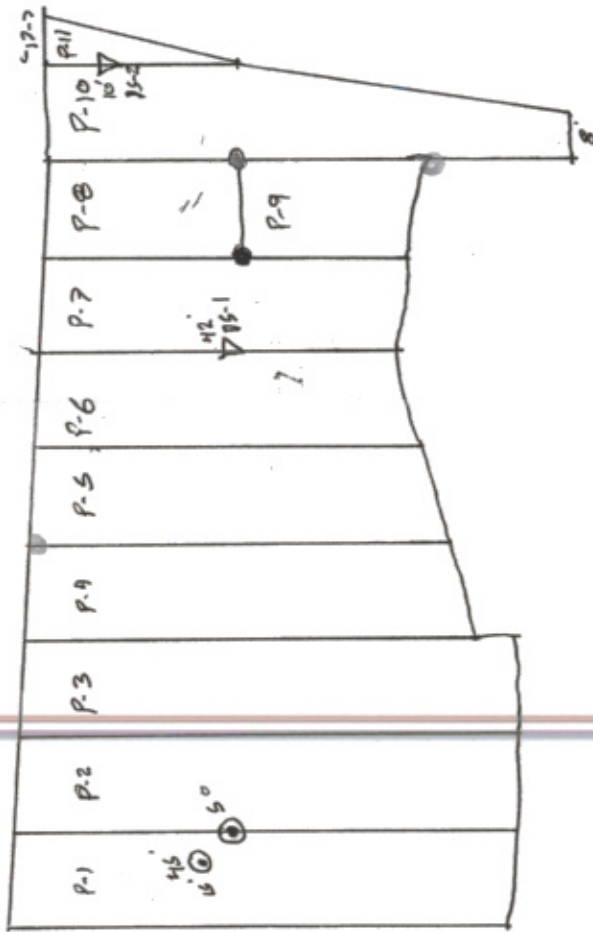


APPENDIX I
GEOMEMBRANE QC REPORT



Parcel C-1 Cap
Czocham

Providence, RI
10/23/12



New England Liner Systems, Inc.

TRIAL WELD DATA

PROJECT: Parcel C-1 Phase I cap PRODUCT: 40 mil LLDPF
Formex Gotham manufacturing site microspike
Providence, RI

DATE	MACH. NUMBER	SEAMER INITIALS	EXTRUSION WELDER		FUSION WELDER		TEST MODE	TEST RESULTS IN LBS / IN			PASS FAIL
			BARREL TEMP	PREHEAT SETTING	WEDGE TEMP	SPEED FT/MIN		SAMPLE NUMBER			
								1	2	3	
9:20							PEEL	86/78	78/83	86/86	P
10/23/12	23	J.M			800	7	SHEAR	110	108	103	P
9:20	405	I.T			800	7	PEEL	83/85	86/90	89/89	P
							SHEAR	103	104	108	P
	X61	R.B	400	250			PEEL	90	97	93	P
							SHEAR	111	94	100	P
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				
							PEEL				
							SHEAR				



APPENDIX J
GEOMEMBRANE SPECIFICATIONS, TESTING AND WARRANTY

AMEC Earth & Environmental, Inc.
Contractor Submittal Review Form



Project:	<u>Textron Parcel C-1 Phase I Cap</u>	Review's Name:	<u>Danielle Ahern</u>
Contractor:	<u>ET&L Corp</u>		
Date:	<u>4/17/2013</u>		
Submittal #:	<u>004</u>		
Reference #:	<u></u>		
Subject:	<u>Drainage Geocomposite</u>		

- A -- Approved as submitted
- B -- Approved, except as noted
- C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.
- D -- Will be returned by separate correspondence
- E -- Disapproved (See Below)
- F -- Receipt acknowledged
- FX -- Receipt acknowledged, does not comply as noted with contract requirements.
- G - Other (Specify)

Comments:

The following submittals have been approved for the drainage geocomposite:

1. material Physical Properties
2. description of tying or joining materials
3. manufacturer and installer documents
4. manufacturers certificate of compliance
5. installation procedures

Please note the following have not been supplied and therefore not approved:

1. panel layout
2. interface strength
3. transmissivity testing results
4. mill certificate or affidavit

AMEC Earth & Environmental, Inc.
Contractor Submittal Review Form



Project:	<u>Textron Parcel C-1 Phase I Cap</u>	Review's Name:	<u>Danielle Ahern</u>
Contractor:	<u>ET&L Corp</u>		
Date:	<u>4/17/2013</u>		
Submittal #:	<u>005</u>		
Reference #:	<u></u>		
Subject:	<u>6oz Nonwoven Geotextile</u>		

- A -- Approved as submitted
- B -- Approved, except as noted
- C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.
- D -- Will be returned by separate correspondence
- E -- Disapproved (See Below)
- F -- Receipt acknowledged
- FX -- Receipt acknowledged, does not comply as noted with contract requirements.
- G - Other (Specify)

Comments:

The 6oz Geotextile submitted does not meet the trapezoidal tear minimum value specified . However, the purpose of the fabric is to be a marker fabric for separation of impacted and clean soils. All other minimum values are met . Therefore the fabric as submitted is appropriate for the project.

AMEC Earth & Environmental, Inc.
Contractor Submittal Review Form



Project:	<u>Textron Parcel C-1 Phase I Cap</u>	Review's Name:	<u>Danielle Ahern</u>
Contractor:	<u>ET&L Corp</u>		
Date:	<u>4/17/2013</u>		
Submittal #:	<u>018</u>		
Reference #:	<u></u>		
Subject:	<u>Geosynthetics - Interface Friction Testing</u>		

- A -- Approved as submitted
- B -- Approved, except as noted
- C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.
- D -- Will be returned by separate correspondence
- E -- Disapproved (See Below)
- F -- Receipt acknowledged
- FX -- Receipt acknowledged, does not comply as noted with contract requirements.
- G - Other (Specify)

Comments:

The Geosynthetic submittals recieved on 10/22/2012 have been approved for the following:

- tear
- density
- carbon black
- dispersion
- thickness
- tensile strength and elongation
- asperity height
- interface shear for both the geomembrane/soil and geomembrane/geocomposite surfaces

June 2011

AEF STYLE 680HS
Minimum Average Roll Values

Properties	Units	Specified Values	Test Method
Mass per unit area	oz/yd ²	6	ASTM D5261
Grab Tensile	lbs	160	ASTM D4632
Elongation	%	50	ASTM D4632
Puncture	lbs	95	ASTM D4833
Mullen Burst	psi	250	ASTM D3786
Trapezoid Tear	lbs	60	ASTM D4533
AOS	US Sieve	80	ASTM D4751
Flow Rate	gpm/ft ²	110	ASTM D4491
Permittivity	Sec ⁻¹	1.63	ASTM D4491

American Engineered Fabrics, Inc.
1 Coffin Ave.
New Bedford, MA 02746



spec of 65

Linear Low Density Polyethylene Micro Spike® Liner



Product Data

Property	Test Method	Values			
Thickness, nominal, (mm)		40 (1.0)	60 (1.5)	80 (2.0)	100 (2.5)
Thickness (min. ave.), mil (mm)	ASTM D5994*	38 (.95)	57 (1.43)	76 (1.90)	95 (2.38)
Thickness (lowest indiv. for 8 of 10 spec.), mil (mm)	ASTM D5994*	36 (.90)	54 (1.35)	72 (1.80)	90 (2.25)
Thickness (lowest indiv. for 1 of 10 spec.), mil (mm)	ASTM D5994*	34 (.85)	51 (1.28)	68 (1.70)	85 (2.13)
*The thickness values may be changed due to project specifications (i.e., absolute minimum thickness)					
Asperity Height (min. ave.), mil (mm)	GRI GM12/ASTM D7466	16 (.41)	16 (.41)	16 (.41)	16 (.41)
Density, g/cc, maximum	ASTM D792, Method B	0.939	0.939	0.939	0.939
Tensile Properties (ave. both directions)	ASTM D6693, Type IV				
Strength @ Break (min. ave.), lb/in width (N/mm)	2 in/minute	112 (19.6)	168 (29.4)	224 (392)	280 (49.0)
Elongation @ Break (min. ave.), % (GL=2.0in)	5 specimens in each direction	400	400	400	400
Tear Resistance (min. ave.), lbs. (N)	ASTM D1004	25 (111)	36 (160)	50 (222)	60 (267)
Puncture Resistance (min. ave.), lbs. (N)	ASTM D4833	50 (222)	70 (310)	90 (400)	115 (512)
Carbon Black Content (range in %)	ASTM D4218	2 - 3	2 - 3	2 - 3	2 - 3
Carbon Black Dispersion (Category)	ASTM D5596	Only near spherical agglomerates for 10 views: 9 views in Cat. 1 or 2, and 1 view in Cat. 3			
Oxidative Induction Time, minutes	ASTM D3895, 200°C, 1 atm O ₂	≥100	≥100	≥100	≥100
Melt Flow Index, g/10 minutes	ASTM D1238, 190°C, 2.16kg	≤1.0	≤1.0	≤1.0	≤1.0
Oven Aging	ASTM D5721	60	60	60	60
with HP OIT, (% retained after 90 days)	ASTM D5885, 150°C, 500psi O ₂				
UV Resistance	GRI GM11	20hr. Cycle @ 75°C/4 hr. dark condensation @ 60°C			
with HP OIT, (% retained after 1600 hours)	ASTM D5885, 150°C, 500psi O ₂	35	35	35	35
2% Secant Modulus (max.), lb/in. (N/mm)	ASTM D5323	2400 (420)	3600 (630)	4800 (840)	6000 (1050)
Axi-Symmetric Break Resistance Strain, % (min.)	ASTM D5617	30	30	30	30

These product specifications meet or exceed GRI's GM17

Supply Information (Standard Roll Dimensions)

Thickness		Width		Length		Area (approx.)		Weight (average)*	
mil	mm	ft	m	ft	m	ft ²	m ²	lbs	kg
40	1.0	23	7	710	283.47	16,330	1,514.87	3,900	1,770
60	1.5	23	7	505	216.41	11,615	1,078	3,900	1,770
80	2.0	23	7	385	117.35	8,855	821	3,900	1,770
100	2.5	23	7	310	94.49	7,130	661	3,900	1,770

Notes:

All rolls are supplied with two slings. All rolls are wound on a 6 inch core. Special lengths are available on request. All roll lengths and widths have a tolerance of ±1%
*The weight values may change due to project specifications (i.e. absolute minimum thickness or special roll lengths) or shipping requirements (i.e. international containerized shipments).

All information, recommendations and suggestions appearing in this literature concerning the use of our products are based upon tests and data believed to be reliable; however, it is the users responsibility to determine the suitability for their own use of the products described herein. Since the actual use by others is beyond our control, no guarantee or warranty of any kind, expressed or implied, is made by Agru/America as to the effects of such use or the results to be obtained, nor does Agru/America assume any liability in connection herewith. Any statement made herein may not be absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations. Nothing herein is to be construed as permission or as a recommendation to infringe any patent.

ENGINEERING SUBMITTAL APPROVAL SHEET

Project Name: Providence, RI _____

Date: August 20, 2012

Product Name: Tenflow 770-2

This approval sheet identifies SYNTEC product specification/MQC Plan. The approval sheet along with the attached submittal is for your review and approval. Your timely response is greatly appreciated. Syntec will not enter production prior to the approval of the submittal.

- 1) Please note there is a variance between the attached specification and the project specification as it relates to the Puncture test ASTM D 4833 (Pin Puncture). Syntec certifies geotextile Puncture per ASTM D 6241 (CBR Puncture) which has replaced ASTM D 4833 by the ASTM Geosynthetic committee. (see Technical note in Section 1a on Pin Puncture ASTM D 4833.)
- 2) Please note that SYNTEC MQC will test the geonet density according to ASTM D 792, as this is the testing method that SYNTEC has GAI-LAP accreditation on this test. Both ASTM D 792 and ASTM D 1505 measure the density of polymers, but the ASTM D 792 test is a much more efficient test to setup and run (see Section 1b).
- 3) Please note that SYNTEC MQC will test geonet tensile strength according to ASTM D 7179 "Standard Test Method for Determining Geonet Breaking Force." ASTM D 7179 replaces the more obsolete testing method of ASTM D 4595 "Standard Test Method for Tensile Properties of Geotextile to be Wide-Width Method.". See Technical note in Section 1c on Geonet Tensile Strength.

Note: In cases where there exists a CQA requirement, product will not be released for shipment prior to approval.

.....

This engineering submittal is:

- 1. APPROVED
- 2. APPROVED AS NOTED/ RESUBMIT
- 3. NOT APPROVED AS NOTED/ RESUBMIT
- 4. REJECTED/ DO NOT RESUBMIT

Comments:

.....
.....
.....

By: _____
Company: _____
Date: _____

Please sign and return to:
Jessica Martin at Fax 410-327-1078 or
jmartin@synteccorp.com

If you have any questions or comments, please feel free to contact Jessica Martin at (800) US-GRIDS or jmartin@synteccorp.com

SYNTEC

DATE: [August 20, 2012](#)

ENGINEERING SUBMITTALS

[Syntec Tri-Planar Tenflow 770-2](#)

For Project: Providence

Rhode Island

Submitted to:

TABLE OF CONTENTS

Specification Sheet1

Technical Note – Geotextile Testing.....1a

Technical Note – Density Testing1b

Technical Note – Geonet Tensile Testing1c

Manufacturing QC / QA Plan.....2

Installation Recommendation.....3

Case Histories/Manufacturer Experience4

Terms and Conditions5



SECTION 1

SYNTEC PRODUCT SPECIFICATION

SYNTEC, LLC

4800 Pulaski Highway
 Baltimore, Maryland 21224 • USA
 Phone: 410-327-1070 • Toll Free: 1-800-874-7437 Fax: 410-327-1078
 www.synteccorp.com



TENFLOW 770-2

Providence, RI

Incorporates a tri-planar geonet manufactured by extruding three sets of HDPE strands forming a three dimensional structure to provide planar water flow. Tenflow 770-2 is capable of providing high transmissivity in a soil environment and will have properties conforming to the values and test methods listed below.

PROPERTY	TEST METHODS	UNITS	VALUE	QUALIFIER	FREQUENCY
TRI-PLANAR GEONET¹					
Thickness	ASTM D 5199	mil (mm)	350 (8.9)	MAV	100,000 sf
Density	ASTM D 792	g/cm ³	0.94	MAV	100,000 sf
Tensile Strength	ASTM D 7179	lb/ft	450	MAV	100,000 sf
Melt Flow Index	ASTM D 1238	g/10 min	1.0	MAX	100,000 sf
Carbon Black	ASTM D 4218	%	2-3	Range	100,000 sf
Thickness Retained From 10,000 hour creep test under 2,000 psf, and 20°C temperature	GRI-GC8	%	92	-	-
Creep Reduction Factor From 10,000 hour creep test under 2,000 psf, and 20°C temperature	GRI-GC8	-	1.05	-	-
GEOTEXTILE¹					
U.V. Resistance (500 hrs)	ASTM D 4355	%	70	MARV	Per formula
Grab Tensile	ASTM D 4632	lbs (N)	160 (710)	MARV	100,000 sf
Tear Strength	ASTM D 4533	lbs (N)	60 (266)	MARV	100,000 sf
CBR Puncture	ASTM D 6241	lbs (N)	400 (1,776)	MARV	100,000 sf
AOS	ASTM D 4751	US Std Sieve(mm)	70 (0.212)	MaxARV	500,000 sf
Permittivity	ASTM D 4491	sec ⁻¹	1.4	MARV	500,000 sf
Water Flow Rate	ASTM D 4491	gpm/ft ² (l/min/m ²)	110 (4481)	MARV	500,000 sf
GEOCOMPOSITE					
Bond Strength (Ply Adhesion) -MD					
Peak	ASTM D 7005	lbs/in	1.0	MAV	100,000 sf
Average			0.5		
Transmissivity² – MD					
Plate/Ottawa Sand/Geocomposite/ Geomembrane/Plate, Gradient = 0.1 @ 1,000 psf 100 hour seating period	ASTM D 4716	m ² /sec	7.0*10 ⁻³	MAV	500,000 sf
Plate/Ottawa Sand/Geocomposite/ Geomembrane/Plate, Gradient = 0.3 @ 1,000 psf 100 hour seating period			4.0*10 ⁻³		
DIMENSIONS AND DELIVERY					
The geocomposite shall be delivered to the jobsite in roll form with each roll identified and nominally measuring 12.5 feet (3.81 meters) in width and 200 feet (61 meters) in length.					

Qualifiers: MARV=Minimum Average Roll Value (MARV), MAV=Minimum Average Value, MAX=Maximum Value, MaxARV=Maximum average roll value, MD= Machine Direction.

NOTES: 1. Geotextile and geonet properties listed are prior to lamination. 2. The Tenflow geonet has a circular aperture side and a cusped side, The side with circular apertures should be placed against the soil while the cusped side should be placed against the geomembrane as indicated with "Top"/"Bottom" labels on the rolls.

SECTION 1a

Geotextile Testing Methods:

Mullen Burst ASTM D 3786 and Puncture Strength ASTM D 4833

This technical note addresses several changes for testing geotextile products: ASTM D 3786 Standard Test Method for Bursting Strength of Geotextile Fabrics-Diaphragm Bursting Strength Tester Method and ASTM D 4833 Standard Test Method for Index Puncture Resistance of Geomembrane and Related Products. Since 2010 these testing methods are no longer recognized by ASTM D35 committee or AASHTO M288. Over the years the geosynthetic industry realized these two index tests did not provide actual prediction of infield performance. It was also noted that minor changes to the geotextile components such as thickness resulted in dramatic variation in index testing values; which was found to be irrelevant in actual field testing.

Therefore to eliminate the high degree of variability ASTM D 3786 and the geotextile puncture test portion of ASTM D 4833 has been removed; this testing method is currently for only testing geomembranes. It was found that ASTM D 6241 Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products using a 50-mm Probe is a more repeatable test method for determining “puncture” of geotextiles.

Conclusion

ASTM D 3786 and ASTM D 4833 are testing standards that are no longer relevant for geotextile. ASTM 6241 is the standard Manufacture Quality Control (MQC) test method for determining CBR Puncture Strength of geotextile’s used by Syntec.

SECTION 1b

SYNTEC, LLC

4800 Pulaski Highway

Baltimore, Maryland 21224 • USA

Phone: 410-327-1070 • Toll Free: 1-800-874-7437 Fax: 410-327-1078

www.synteccorp.com



SYNTEC
GEOSYNTHETICS EVOLVED

Determining the Density of Polymers used in Geonets

This technical note addresses two testing methods for one property: density of polymers used in geosynthetics. The American Society for Testing Materials (ASTM) has two methods for determining density of polymers that are currently active: ASTM D792 and ASTM D1505. Both methods are developed and approved by the ASTM Plastics Committee D20.

Test Method ASTM D792 is the “Standard Test Method for Density and Specific Gravity (Relative Density) for Plastics by Displacement.” This test method describes the determination of the specific gravity and density of solid plastics in forms such as sheets, rods, tube, or molded items. Two test methods are described as follows: Test Method A- for testing solids plastics in water, and Test Method B- for testing solid plastic in liquids other than water (i.e. alcohol).

Test Method ASTM D1505 is the “Standard Test Method for Density of Plastics by the Density-Gradient Technique.” This test method covers the determination of density of solid plastics by observing the level to which a test specimen sinks in a liquid column exhibiting a density gradient, in comparison with standards of known density. Three test methods are described as follows: Test Method A- stepwise addition: using two liquids that will give a desired density range, Test Method B- continuous filling with liquid entering gradient tube becoming progressively less dense: using two suitable liquids which have been deaerated by heating or an applied vacuum, and Test Method C- continuous filling with liquid entering gradient tube becoming progressively more dens.

Conclusion

Both ASTM D792 and D1505 measure the same property “density of polymers” through different testing procedures. ASTM D792 is the more efficient test method to setup and run compared to ASTM D1505. With testing results of ASTM D792 accurate to the thousands place, it is the standard Manufacture Quality Control (MQC) test method for determining density of geonet by SynTec.

SECTION 1c

SECTION 2

SYNTEC

***Quality Manual:
Policies and Procedures***

2011

Copy n° _____

1 Scope

1.1 General

Syntec LLC is committed to excellence in plastics. Syntec's quality scope is to produce the highest standard of quality when manufacturing its products. In accordance with Syntec's policy, employees are required to comply with published quality control standards at all times.

1.2 Application

The procedures outlined in this manual are used in the Syntec Materials Testing Laboratory, and throughout the entire Syntec Quality Control Department.

Syntec maintains a Quality Control and Research Laboratory capable of performing procedures, in accordance with ASTM and GRI, to assure control over all products. This laboratory is also capable of supporting manufacturing, product development and research needs.

The Syntec management team consists of president, vice president, plant manager, and quality control manager. Syntec relies on input from the entire company to implement and enforce its procedures. Syntec Quality Control Department makes sure that the product is produced, packaged and shipped according to the expectations of its customers.

2 Quality Management System

2.1 General Requirements

SYNTEC has implemented a Quality Management System that is continuously maintained for effectiveness and process improvements, consistent with the requirements of ISO 9001:2000

2.2 Documentation Requirements

2.2.1 General

The Quality System Documentation consists of five levels; the Company Policy (level one), the Quality Policies Manual (level two), Quality Procedures (level three), Work Instructions (level four) and Records (level five). Supplemental to these documents are the Inspection and Test Plans and Master Lists.

LEVEL I Company Policy – A documented Policy Statement

LEVEL II Quality Policies Manual – The Quality Policies Manual establishes requirements and guidelines for the overall Quality System objectives. These

requirements and guidelines are applicable to the operations at **SYNTEC**.

LEVEL III Quality Procedures – The Quality Procedures Manual is a collection of Standard Operating Procedures (SOP's), which are documented in conformance with, and support of the Quality Policies Manual's requirements and guidelines. The Quality Procedures Manual details the implementation of requirements and guidelines for the operation. (Quality Procedures are placed as hard copies at relevant workstations).

LEVEL IV Work Instructions – Work Instructions are documented as necessary to support each applicable Quality Procedure. They detail **specific** quality or inspection information and **specific instructions** for performance of individual tasks.

LEVEL V Records – Completed Forms provide the objective evidence of compliance.

2.2.2 Quality Manual

The Management team is responsible for the preparation, distribution and the maintenance of the Quality Policies Manual.

Assigned holders of the Quality Policies Manual are responsible for maintaining controlled copies and for the communication/training required by the most recent revisions.

Review/Approval of Revisions – Revisions to the Quality Policies Manual are subject to the same review and approval process as the original.

Revisions are subject to the following:

- Manual revisions are controlled by page and only revised pages of a section have a revision level, (i.e. Rev.: 2R).
- Revision levels are assigned in numeric order, starting with “1” for the original issue and increasing by one with each revision.
- Section: 0.1, (Index) is also revised to incorporate identification of the changed section/page and to document the revision status of the manual.
- Change Identification – Where practical, revision to sections is indicated by using an *italic font*. If changes are extensive, the section is rewritten completely and designated by the addition of an “R” to the revision number on the page and in the index, (i.e. 2R). Grammatical changes are not designated.
- Record of Changes – The Quality Assurance Department maintains a history of revisions and a file of superseded documents.

Controlled/Uncontrolled Copies:

- Controlled copies are assigned according to the Quality Manual Distribution List. Serial numbers of copies downgraded from controlled to uncontrolled are not reused.
- Only controlled copies of the Quality Policies Manual are distributed and used by SYNTEC personnel.
- Uncontrolled copies are not maintained with subsequent revisions and are not issued to personnel.

Revision Distribution:

- The Management Team revises all copies of the Quality Policies Manual and distributes them as required.
- The Quality Control Laboratory maintains a record for all controlled copies of the Quality Policies Manual.
- Manuals are either controlled or uncontrolled issues. SYNTEC's personnel use only controlled copies unless otherwise authorized.

2.2.3 Control of Documents

SYNTEC establishes, implements, and maintains documented procedures to control all documentation and data that relate to Quality System requirements, to include documents of external origin such as standards and customer drawings.

Documents and data are reviewed and approved for adequacy by the Management Team these controls ensure that:

- All documents, instructions and procedures are adequate for their intended purpose.
- Correct documents, instructions and procedures are available at effected work locations and/or accessible to appropriate personnel.
- Obsolete documents are promptly removed from all points of issue or use
- Revision levels of documents can be readily identified.

Document Revisions are subject to:

- Approval – Revisions to documents are reviewed and approved by the same approval process and/or authority as the original.
- Revision Identification – Revised documents reflect the nature of revisions, where practical.
- Record of Revisions – Records of revisions are maintained by the issuing function where appropriate.

2.2.4 Control of Records

SYNTEC establishes implements and maintains documented procedures for the identification, collection, indexing, filing, storage, maintenance and disposition of quality records. The documents shall be maintained for 5 years

3 Management Responsibility

3.1 Management Commitment

SYNTEC has implemented a Quality Management System that is continuously maintained for effectiveness and process improvements consistent with the requirements of ISO 9001:2000 and all other statutory or regulatory requirements as appropriate. Continual improvement the Quality Management Systems' effectiveness is paramount. Obtaining and maintaining our high standards of quality is the goal of every individual and is a cornerstone of Syntec. The Quality Management System is internally audited on a frequent basis, minimum once a year for continuing suitability of the quality management system.

3.2 Customer Focus

- SYNTEC establishes implements and maintains documented procedures for contract review and for the coordination of related activities.
- Customer quotations, inquiries, orders and contracts are reviewed to ensure customer requirements are adequately defined and documented.
- Any changes or amendments to the contract are reviewed according to the procedures established by Sales, Engineering and Customer Service functions.

3.3 Quality Policy

SYNTEC defines and documents its Policy for Quality, which provides the overall objectives for an effective Quality Management System. The Company Policy is relevant to the company's goals and the expectations of its customers.

SYNTEC is a provider of professional services and products with sales in various markets around the world. Our Company Policy is:

'SYNTEC is committed to providing its customers with the highest quality products by maintaining a culture of continuous improvement, focus on innovation and a world class manufacturing environment.'

SYNTEC's employees and management are committed to assuring that this policy is implemented, understood and maintained at all levels of the organization.

Syntec management team will check at the end of each year the level of service provided by Syntec Corporation. In particular he will analyze:

- Customer complaints related to quality problems
- Non conformity reports
- Corrective actions and preventive actions

3.4 Management Review

The Management Team reviews the Quality Management System regularly, to ensure the continuing suitability, adequacy, and effectiveness. Typically this review assesses opportunities for improvement and required changes, including changes in the quality policy or quality objective but not limited to those alone.

4 Resource Management

4.1 Human Resources

Each new Syntec Quality Control employee undergoes a comprehensive training program to educate and train them to properly perform their required duties. New personnel must demonstrate proficiency in the areas of test procedures, visual inspections and basic knowledge of plastic extrusion. A verbal evaluation and demonstration of how to perform the test procedures, will be given by the Quality Lab Manager, to determine their ability. Written tests may also be included in the evaluation process.

Ongoing **training** is part of Syntec's philosophy, and Quality Control personnel are recommended to use all sources available to keep up with current plastic extrusion test methodology. Production employees are encouraged to attend Quality Control meetings to obtain a clear understanding of the Syntec Quality Control procedures.

Training records are kept in the Plant Manager's office, and are available upon request.

4.2 Infrastructure

This fully functional laboratory adheres to the guidelines and procedures set forth by ASQC Q93/ISO 9003. Round robin and independent test comparisons are used to periodically verify our test results, besides the continually done Internal Reference Materials (IRM's). From these formal and informal laboratory comparisons we have a high level of confidence in our personnel and equipment. Syntec's Quality Control Laboratory is fully equipped to perform a wide range of conformance testing on fencing, geonet and geonet/geotextile composites. Samples are die cut with a hydraulic press to ensure uniformity.

All measuring and testing equipment is maintained in proper working order and regularly scheduled calibrations are performed to ensure accurate results. Syntec currently maintains a standing contract with an outside calibration agency to monitor the accuracy of each testing device once per year, or as needed.

The complete equipment list proving that all Calibrations and verifications of the cutting dies are done is kept in the representative Quality office, and is available upon request.

4.3 Work Environment

Syntec Corporation manages the work environment to assure conformity with the product specifications and requirements. In each of the rooms that testing is performed HVAC systems are controlling the air temperature.

It is the lab technician's responsibility to check that the samples and specimens are adequately conditioned every day, throughout the day. In case the temperature and relative humidity falls outside of the testing range, testing will be stopped. Testing will be resumed once the environmental conditions fall within the ASTM guidelines.

Computers present in the Baltimore laboratory are solely to be used by laboratory personnel. To assure this happens all the computers are equipped with password protection. In addition, all the data is stored on the main server, this data is backed up daily, the only persons access in the corporation to these directories are the MQC personnel and the computer administrator.

5 Product Realization

5.1 Planning of Product Realization

SYNTEC develops the processes needed for Product Realization in accordance with the requirements of other processes of the Quality Management System.

The following is determined with output in a form according to standard methods of operation:

- Quality objectives and requirements for the product
- The need to establish processes, documents, and provide resources specific to the product
- The required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for product acceptance
- Records needed to provide evidence that the realization processes and resulting product meet necessary requirements

5.2 Customer-Related processes

5.2.1 Review of Requirements Related to the Product

SYNTEC reviews the following:

- The requirements specified by the customer, including the requirements for delivery and post-delivery activities
- The requirements not stated by the customer but necessary for specified or intended use, where such is known
- Statutory and regulatory requirements related to the product
- Any additional requirements determined by the organization

5.2.2 Determination of Requirements Related to the Product

- Product requirements are defined
- Contract or order requirements differing from those previously expressed are resolved
- The defined requirements can be achieved

SYNTEC maintains records of the results of reviews and actions arising from the review.

SYNTEC confirms product requirements with the customer when no documented statement is provided and ensures that relevant documents are amended and relevant personnel are notified of any changes or modifications.

5.2.3 Customer Communication

SYNTEC develops and implements effective methods of communicating with customers in relation to product information, enquiries, contracts or order handling, amendments and customer feedback, including customer complaints.

Syntec manufacturing service objective is **to return a request for testing within a one-week window** (this assuring that seating times for potential conditioned specimen, allow this to be performed in such a time window).

Based on this objective, the quality department keeps track of all its data requests and subsequent certifications. To assure all customer needs are still serviced, a yearly survey is sent out to the Syntec sales staff. This survey scope will need to include timeliness, goals met for the quality group, etc. To validate this, Syntec internal surveys target a return rate of 90%. The Syntec Corporation servicing goal for 2010 will be having 90% of the customers completely satisfied of the product quality and certification quality.

5.3 Subcontracting and approved supplier listing

Syntec Corporation laboratory in Baltimore needs to ensure that the subcontractor (independent laboratories) can perform the testing required. Typically, Syntec's policy is as follows: subcontractors are selected based on their ability to supply the service in a timely manner, in accordance with the product specification, and at the most reasonable price.

5.3.1.1 Resin

The Plant Manager will write up a purchase order after negotiating price and delivery for a specific shipment of resin with a vendor. A copy of the purchase order will be given to the material manager. The Quality Control Department will independently receive order conformation/material certification directly from the vendor.

Every rail car, bulk truck, bag or box of resin is sampled upon delivery by material handling personnel and a small sample is given to MQC personnel. The resin is tested for density and the melt flow index once per resin lot. For railcars with multiple compartments, each compartment is tested to assure conformance to the specification. If the resin is not within specification it will not be unloaded into the silo. If the resin is within specification then the resin handler will make note of the time of arrival, PO#, resin type, grade or lot # and date onto an unloading log form. The unloading log form is then used to record the silo readings on a daily basis. Syntec's incoming resin is tested per the ASTM standards and frequencies in Section 6.

5.3.1.2 Geonet

The production of Syntec's geonet is monitored and measured on a continual basis (typically hourly); production personnel assure that geonet produced are within product specifications. Syntec's geonets are tested per the ASTM standards and frequencies in Section 6.

The QC Manager must certify to any geonet that is shipped to a customer or project site. This is done by sending either a letter of certification or by sending a certification packet. The customer will specify which is required. All test results are documented and maintained in Syntec's archives. Any rolls not meeting Syntec's specifications are considered nonconforming and will either be declassified or rejected. Rolls produced prior to and following the rejected or declassified roll are tested until passing rolls are found.

5.3.1.3 Geocomposite

The production of drainage geocomposites is monitored on a continual basis. Both surfaces of the Geocomposite are inspected for integrity and acceptable ply adhesion. Geocomposites are produced, by laminating a non-woven polypropylene geotextile to one or both sides of the Geonet core. Geocomposites are tested per the ASTM standards and frequencies in Section 6:

5.3.2 Validation of processes for production of drainage geocomposites (lamination)

- Please note that all thermoplastics are subject to temperature elongation and shrinkage (coefficient of thermal expansion (13×10^{-5} per 1°C), for HDPE this amounts to a potential of 0.52 ft difference with a temperature difference of 20 degrees Celsius. Un-laminated areas are characterized as being in either cross machine or machine direction.
- Approximately 10% of roll physical dimension remains un-laminated in the machine direction and is designed to account for installation overlap. Typically 3" to 6" remains un-laminated on either side of the roll. Syntec geonet tolerance on the wind-up of geocomposites allows for some movement of the geonet, resulting in at least 1 inch of geotextile extending over the geonet portion of the geocomposite.
- Approximately 1% of roll physical dimension may be un-laminated in cross machine direction as a result of machine start up and stopping operations. Lamination utilizes an open flame process.
- Geocomposite product is visually inspected; and visually apparent holes (typically greater than 2 mm) are repaired by using adhesives and geotextile repair patches (8 "x 8").
- Plant repairs are performed utilizing geotextile repair patches and adhesives and are visually apparent on deployed rolls.
- Only those rolls that have less than 1% of the entire surface area repaired in plant are released for use on the project.

- Please see Installation Recommendations in the Syntec Submittal for explicit guidelines for conducting repairs on product installed on site that may still have openings greater than 2mm.

Geonet structures *may* undergo changes from original geonet extrusion due to exposure to open flames and pressure during lamination. Observed changes of geonet may include slight melting of top and bottom strands, thin cross-strand structures or localized distortions in the machine direction. Nevertheless the geocomposite performance (transmissivity and peel strength) is required to meet the approved specification.

5.3.3 Roll identification:

- Each roll must be labeled with the roll and lot identification number, product type and grade, and physical dimensions. The label or tag shall be affixed or attached to the roll covering and within the roll core, if present.

5.3.4 Shipping, handling and storage:

- Drainage geonets and geocomposites rolls shall be shipped to the jobsite, and handled in a manner not to damage the rolls. The rolls shall be stored away from dirt, mud, and excessive heat. Refer to ASTM D4873 (Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples) for more detailed handling and storage of geosynthetics.

5.4 Control of monitoring and measuring devices

- All measuring and testing equipment are maintained in proper working order and regularly scheduled calibrations are performed to ensure accurate results. Syntec maintains equipment calibration schedule once per year, or as needed. Syntec uses its measured data in its laboratories as to demonstrate conformity to the product, and release of the product for shipment. Syntec has implemented a Internal Reference Material (IRM) check on all its testing apparatus available. This IRM will have statistical control limits determined, and this IRM test will be done at least on a weekly basis. Whenever a Non-conforming report is written, automatically the IRM tests for its representative test method will be performed to assure the testing apparatus function properly.
- All measuring devices can be identified, their calibration status easily determined, most devices can be adjusted or re-adjusted as necessary, protected from changes and safeguarded from damage to prevent invalid measurements being taken.

6 Measurement, Analysis and Improvement

6.1 General

- Syntec's laboratory personnel perform all conformance testing, and analysis of test data in accordance with the ASTM Standard Test Methods published on the product specification sheet for the submitted product. The information contained in 8.2 is for explanatory purposes only. No attempt has been made to set forth the

full test procedure in detail. A full, detailed procedure (work instruction or Standard operating procedure) for each test method is maintained in the laboratory and is available upon request. Please be advised that all Syntec standard operating procedures for conducting tests and obtaining values are the explicit bases for Syntec Material Certifications and Warranties and as such are essential components of all contract documents.

- Syntec uses its measured data in its laboratories to demonstrate conformity of the product, and hence releases the product for shipment accordingly.
- Syntec uses internal audits and sometimes-external audits to assure that the corporation conforms, implements and maintains its Quality Management System.

6.2 Measurement of Product Properties, Test Frequencies, and Test Methods

6.2.1 Testing Frequencies

6.2.1.1 RESIN TESTING

TEST	FREQUENCY	ASTM STANDARD
Density	Each Lot	ASTM D792
Melt Flow Index	Each Lot	ASTM D 1238

6.2.1.2 GEONET TESTING

TEST	FREQUENCY	ASTM STANDARD
Thickness	Every 50,000 sq.ft	ASTM D 5199
Tensile Properties	Every 50,000 sq/ft	ASTM D 4595 or 5035 or 7179
Transmissivity*	Every 200,000 sq.ft	ASTM D 4716
Mass per Unit Area	Every 50,000 sq.ft	ASTM D 3776
Carbon Black	Every 50,000 sq.ft	ASTM D 4218

* For geonet as the end product

6.2.1.3 GEOCOMPOSITE TESTING

TEST	FREQUENCY	ASTM STANDARD
Ply Adhesion	Every 100,000 sq.ft	ASTM D7005
Transmissivity	Every 200,000 sq.ft	ASTM D 4716

6.2.2 RESIN TEST PROCEDURES

Syntec's laboratory personnel perform all conformance testing in accordance with the ASTM Standard Test Methods published on the specification sheet for the submitted product.

The information contained herein is for explanatory purposes only. No attempt has been made to set forth the full test procedure in detail. A full, detailed procedure (work instruction or Standard operating procedure) for each test method is maintained in the laboratory and is available upon request. Please be advised that all Syntec standard operating procedures for conducting tests and obtaining values are the explicit bases for Syntec Material Certifications and Warranties and as such are essential components of all contract documents.

6.2.2.1 Density

- Density is determined in accordance with ASTM D792.
- Prepare a constant temperature density column by filling a graduated cylinder with distilled water and isopropanol such that a density gradient is achieved throughout the height of the cylinder.
- Prepare three specimens of material to be checked for density. The specimens can be of any shape and should be approximately 0.2 in (0.5 cm) across.
- Lower the specimens and glass standards into the density column.
- Observe the location of the specimens with respect to the standards using the graduations etched in the cylinder.
- Calculate density and report the results in units of grams per cubic centimeter.

6.2.2.2 Melt Flow Index

- Melt Flow Index is determined in accordance with ASTM D 1238 (condition E) for HDPE.
- Heat the plastometer to **190° C**.
- Add 3.7 grams of resin to the cylinder of the plastometer, compact the resin, add piston and place 2.16-kilogram weight onto the piston.
- Allow the plastometer to rest. At the conclusion of 8 minutes remove and discard all plastic that has been extruded through the 0.0825-inch diameter hole at the end of the cylinder opposite the piston.

- Allow plastometer to rest for an additional 10 minutes. At the conclusion of this test period, remove extruded plastic and allow it to cool at laboratory conditions.
- Weigh the extrudate and report the results in units of grams per 10 minutes.
- Melt Flow Index is determined in accordance with ASTM D 1238 (condition E) for PP.

6.2.3 GEONET TEST PROCEDURES

Syntec's laboratory personnel in accordance with the standard test methods detailed in the indicated ASTM section, unless otherwise noted, perform the following tests.

The information contained herein is for explanatory purposes only. No attempt has been made to set forth the full test procedure in detail. A full, detailed procedure (work instruction or Standard operating procedure) for each test method is maintained in the laboratory and is available upon request. Please be advised that all Syntec Standard Operating Procedures for conducting tests and obtaining values are the explicit bases for Syntec Material Certifications and Warranties and as such are essential components of all contract documents.

6.2.3.1 Melt Flow Index

Melt flow index test can also be performed on geonet if required by project specification, procedures are as indicated in the resin section 8.3.2.1

6.2.3.2 Carbon Black Content

- Carbon Black Content is determined in accordance with ASTM D 4218.
- Place a pre-weighed quantity of geonet in a 600° C muffle furnace.
- Allow the sample to remain in the furnace for 3 minutes. During this time everything except carbon black will be pyrolyzed
- Cool the carbon black for 3 minutes in a desiccator. Weigh.
- Calculate the amount of carbon black remaining as a percentage of sample weight.
- Report the results in units of percent.

6.2.3.3 Tensile Properties, Wide Width Method

- Tensile properties are determined in accordance with ASTM D 4595.
- Cut five 8 in x 8 in specimens.
- Set initial distance between 8-inch wide grips of the constant-rate-of-tension machine to 4 inches. Set test speed to 10% /min for geonet.
- Center test specimen in the grips. Start the tensile testing machine and continue running the test until the peak stress or yield point has clearly been passed.
- Calculate stress at yield and break. Report the results in units of pounds per foot or as specified by the project.

6.2.3.4 Tensile Properties, Strip Method

- Tensile properties are determined in accordance with ASTM D 5035
- Cut five 2 in x 6 in specimens.

- Set initial distance between grips of the constant-rate-of-tension machine to 3 inches. Set test speed to 12.0 in/min for geonet.
- Center test specimen in the grips. Start the tensile testing machine and continue running the test until the peak stress or yield point has clearly been passed.
- Calculate stress at yield and break. Report the results in units of pounds per foot or as specified by the project.

6.2.3.5 Tensile Properties, Breaking Force

- Tensile properties are determined in accordance with ASTM D 7179
- Cut five 4 in x 8 in specimens.
- Set initial distance between grips of the constant-rate-of-tension machine to 4 inches. Set test speed to 12.0 in/min for geonet.
- Center test specimen in the grips. Start the tensile testing machine and continue running the test until the peak load.
- Calculate the average and the standard deviation for breaking force. Report the results in units of kN (lb) or as specified by the project.

6.2.3.6 Thickness

- Thickness is determined in accordance with ASTM D 5199.
- Measure the thickness of ten 4 in x 4 in specimens across the width of the geonet using a dead weight micrometer exerting a pressure of 2.9 psi.
- Report the results in mils or as specified by the project.

6.2.3.7 Mass per Unit Area

- Mass per Unit Area is determined in accordance with ASTM D 3776.
- Weigh accurately ten 4 in x 4 in specimens across width of the geonet using an analytical balance.
- Calculate the mass per unit area by moving the decimal point over two places to the right.
- Report the results in grams per meter squared or as specified by the project.

6.2.3.8 Hydraulic Transmissivity

- Hydraulic Transmissivity is determined in accordance with ASTM D 4716
- Cut one 12 in x 14 in specimen with the length of the specimen parallel to the machine direction.
- Lay the specimen or profile in the base of the transmissivity devise making sure that it is free of wrinkles and folds. Place the platen on the specimen.
- Condition the specimen or profile by running water through the apparatus under a hydraulic head of approximately 1.0 and a compressive load for 15 minutes.
- Report the result in units of square meters per second or as specified by the project.

6.2.4 GEOCOMPOSITE TEST PROCEDURES

Syntec's laboratory personnel in accordance with the standard test methods detailed in the indicated ASTM section unless otherwise noted perform the following tests.

The information contained herein is for explanatory purposes only. No attempt has been made to set forth the full test procedure in detail. A full, detailed procedure (work instruction or Standard operating procedure) for each test method is maintained in the laboratory and is available upon request. Please be advised that all Syntec standard operating procedures for conducting tests and obtaining values are the explicit bases for Syntec Material Certifications and Warranties and as such are essential components of all contract documents.

6.2.4.1 Ply Adhesion

- Ply Adhesion is determined in accordance with ASTM D7005.
- Die cut five 4 inch by 8 inch specimens equally spread across the roll width, with the long dimension in the machine direction.
- Separate by hand enough material to permit the grips to be attached. Initial distance between the grips should be 1 inch.
- Start the machine so that the jaws separate at a speed of 12 in/min. Continue testing until the geotextile separates completely from the geonet.
- Record from the computer printout the average value for the individual specimens and average those specimen values for the final results per laminated side.
- Report the results in units of pounds per inch or as specified by the project.

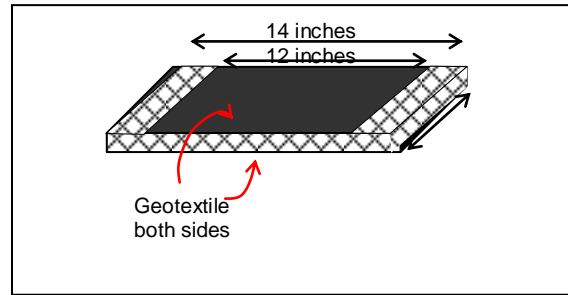
6.2.4.2 Hydraulic Transmissivity

Hydraulic Transmissivity is determined in accordance with ASTM D 4716.

Transmissivity is the most important property for drainage geocomposite. The following detailed procedures are used to increase reproducibility and repeatability:

6.2.4.2.1 Sample retrieval and cutting

1. Cut 3 feet by roll width sample from a geocomposite roll; avoid taking sample from areas that might have been damaged during handling and shipping.
2. Cut specimen at least 12 inches from the edge of the roll to avoid non-bonded areas. For the best consistency, cut the first specimen from the center of the roll.
3. Cut specimen using a die-template measuring 14 inches (MD) by 12 inches (CD), assure that the die cuts out at least one side being perfectly parallel with one of the main ribs (machine direction). In addition, Syntec geocomposite may have a top and bottom side, only the top/soil side should be tested against the soft boundary condition. Syntec places labels on each geocomposite roll indicating top and bottom sides for field installation.
4. Remove or peel off 1 inch of the upper and lower geotextile from both ends (MD) of the geocomposite (MD) as shown in below Figure to minimize head loss at the entrance and exit caused by die cutter.



6.2.4.2.2 Sample preparation, transmissivity setup and measurements

1. Soak the specimen in a water tub
2. Shake and tab the specimen while it is submerged until no air bubbles are observed to escape from the specimen.
3. Remove and immediately place the specimen into the testing unit. Maintain enough water in the unit to keep the geocomposite sample saturated at all times. Note that the specimen should be placed with the marked top side against the soft boundary condition.
4. Place the sand layer, or per the test boundary conditions required in the project specification.
 - Unless required otherwise, Syntec uses ASTM C778 20/30 Ottawa sands as the sand boundary layer.
5. Apply a small normal load (about 5 psi) and start the flow, until no more air bubbles are emanating from the transmissivity specimen. From this point forward, the specimen shall be kept saturated throughout the entire test.
6. Increase the pressure to the required normal load and also increase the gradient to about 1 to 1.1 to remove any air.
7. Adjust the gradient to the required lower gradient.
8. Allow to run for at least 15 minutes and begin first reading of
 - a. Flow quantity
 - b. Time
 - c. Temperature
9. Repeat readings at the specified time intervals.

6.2.4.2.3 Transmissivity test result disputes

If SYNTEC has reason to believe that failing tests may be the result of the Construction Quality Assurance (CQA) Laboratory incorrectly conducting the tests, SYNTEC will request that the test in question be retested by the CQA Laboratory with a technical representative of SYNTEC present during the testing. To minimize laboratory reproducibility limitation SYNTEC will have the sample retested at two different approved CQA Laboratories.

1. Firstly to make sure the test is conducted in accordance with the approved specification (The approved specification is included in the approved MQC

submittal). Testing conditions such as the load, gradients, boundary conditions (top and bottom), and the type of soils used to run the test should be the same in both laboratories as is clearly indicated in the transmissivity test standard ASTM D4716.

“5.2.1 In case of a dispute arising from differences in reported test results when using this test method for acceptance testing of commercial shipments, the purchaser and the supplier should first confirm that the tests were conducted using comparable test parameters including specimen conditioning, normal stress, seating period, hydraulic gradient, test water temperature, etc.,...”

2. Secondly two specimens shall be tested and the average value obtained shall be compared to the value in the approved specification, ASTM D4716:

*“7.5 TEST SPECIMENS-GEOCOMPOSITES- For acceptance testing, remove **TWO specimens** from each unit in the laboratory sample. Obtain the specimens with the longer dimension parallel to the geocomposite direction (for most cases that would be in the machine direction) to be tested. For performance testing, the number of specimens is selected by the user.”*

The definition for "a (Par 3.1.14) performance test, n-- a test that simulates in the laboratory as closely as practical selected conditions experience in the field and which can be used in design. (ASTM D4439)"

Syntec geocomposites for acceptance of shipments in case of a dispute shall be tested with **at least 2 specimens**, regardless of index test or performance tests.

3. Thirdly, in case of failing test results, blocking tests shall be performed to isolate the “out-of-specification” materials. Additional samples must be taken before and after the failing geocomposite roll as indicated in the traceability sheets in the MQC certification. If both additional tests pass, the “blocked-out” geocomposite rolls shall be eliminated from the project, while the remaining rolls in the batch shall be acceptable for use. If one blocking test fails, the blocking procedure will be repeated until passing results are obtained. If both blocking specimens fail again in the retest, the entire batch of geocomposites will be removed from the project.

6.3 Improvement

6.3.1 Continual improvement

This organization shall continually improve the effectiveness of its Quality Management System, through the use of its quality policy, quality objectives, audit results, analysis of the data, corrective and preventative action and management review.

6.3.2 Corrective and preventative action

Action is immediately taken to eliminate the cause of any non-conformance in order to prevent reoccurrence. A Corrective Action Report (CAR form) shall be filled, to address the non-conformance. In this CAR –procedure preventative action items will be included to prevent the potential non-conformance from reoccurring. The CAR procedure includes the following action items:

- Review the non-conformities or customer complaint
- Determine the cause of non-conformities or customer complaint
- Evaluate the need for action to prevent reoccurrence
- Determine and implement action needed
- Record on the CAR form all items above and the results of the action taken
- Review corrective and preventative actions taken.

SECTION 3

TENFLOW INSTALLATION GUIDE

SYNTEC, LLC

4800 Pulaski Highway
Baltimore, Maryland 21224 • USA
Phone: 410-327-1070 • Toll Free: 1-800-874-7437 Fax: 410-327-1078
www.synteccorp.com



Handling and Storage

Drainage geocomposite rolls shall be shipped to the jobsite in a manner not to damage the rolls. The rolls shall be stored away from dirt, mud, and excessive heat. Refer to ASTM D4873 (Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples) for more detailed handling and storage of geosynthetics.

Placement

1. The Contractor and the Installer shall handle all geocomposite materials in such a manner as to ensure it is not damaged in any way. Precautions shall also been taken to prevent damage to underlying layers during placement of the geonet/geocomposite.
2. The Tenflow geonet core consists of a circular aperture side and a cusped side. The side with the circular apertures should be placed against the soil, while the cusped side should be placed against the geomembrane.
3. The geocomposite roll should be installed down the slope, and precautions taken to minimize wrinkles. The Tenflow triplanar geocomposite directs flow predominately in the machine direction (along the roll length) and thus should be installed in the intended direction of flow. This is generally directly down slope unless the Engineer specifies an alternative drainage path.
4. In the presence of wind, all geocomposite materials shall be weighted with sandbags or the equivalent. Such sandbags shall be installed during placement and shall remain until replaced with specified overlying material.
5. If there are any obstructions (such as outlet pipes or monitoring wells) while deploying the geocomposite, the geocomposite shall be cut to fit around the obstruction. Care should be taken as to make sure there is no gap between the obstruction and the geocomposite, to prevent any soil particles from migrating into the geonet core.

Seams and Overlaps

The geonet and each component of the geocomposite (geonet & geotextile(s)) will be secured or seamed to the like component at overlaps.

Geonet:

Adjacent edges of geonet along the roll length of the geocomposite should be overlapped 3 inches, see Figure 1. These overlaps shall be joined by tying the geonet cores together with white or yellow cable ties (minimum tensile strength of 50 lbs) or use beads of white polyethylene (preferred color to differentiate with black colored geonet) extrudate “welding” into both geonet cores. These ties or beads shall be spaced every 5 feet along the roll length. The ties should be placed along the cross machine direction, i.e., tying the two layers across the longitudinal ribs. It should be noted that due to the structure of the geonet, a complete interlocking of the two overlapped geonet layers can occur.

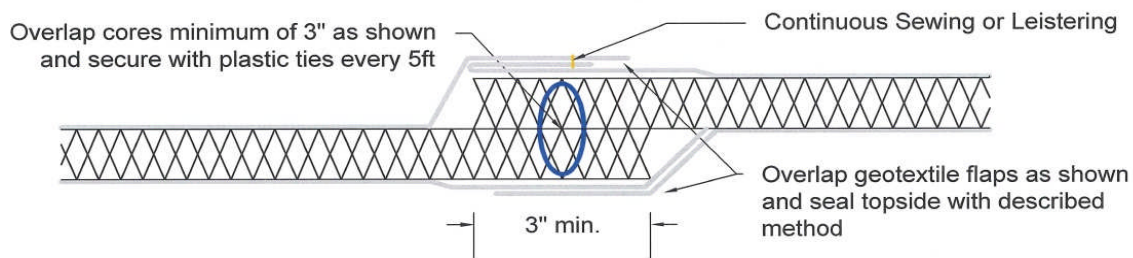


Figure 1. Overlap along roll length

Adjoining geocomposite rolls (end to end) along the roll width should have the geonet overlapped a minimum of 8 inches across the roll width, see Figure 2. Geonet should be tied every 12 inches across the roll width or as specified by the Engineer.

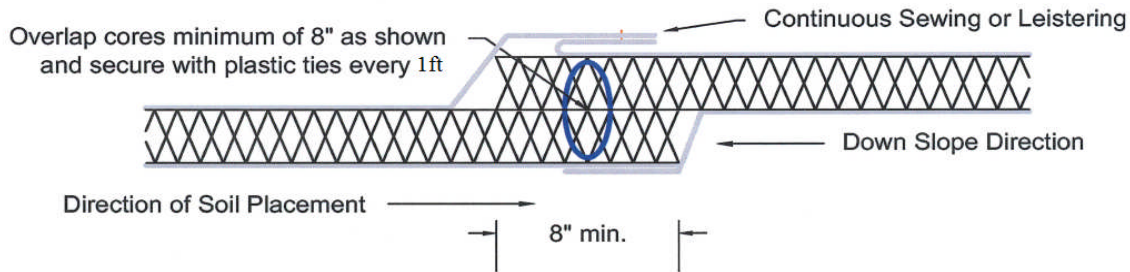


Figure 2. Overlap along roll width

Geotextile:

The bottom layer of geotextile (if any) shall be overlapped, or at the discretion of the Engineer may need to be sewn together. The top layers of geotextiles shall be sewn together, or at the discretion of the Engineer may be heat bonded or wedge weld. Geotextiles shall be overlapped a minimum of 1 inch prior to seaming or heat bonding, if heat bonding is to be used, care must be taken to avoid burn through of the geotextile. It is important that the geotextiles be joined continuously to the adjacent and adjoining rolls as to prevent any fugitive particle migration into the geonet core flow channels.

Repairs

Prior to covering the deployed geocomposite, each roll shall be inspected for damage. Potential repair techniques will be addressed separately for just geotextile damage and for geonet damage on the geocomposite.

Geotextile Damage:

Syntec recommends patching small holes with an 8" x 8" geotextile piece. Apply the spray adhesive (Note: 3M Hi-Strength 90 adhesive is the recommended adhesive.) to one side of the 8x8" textile patch. Center and apply the 8"x 8" textile patch over the small holes in the geotextile. Firmly press 8"x 8" textile patch over repair area. If the damaged area of the geotextile is greater than this patch size, a bigger patch is recommended instead of using a multitude of 8" x 8" patches. If the geotextile is damaged beyond 50 percent of the width of the roll, a full width piece of geotextile shall be cap-stripped over the damaged area as recommended above and seamed to the adjacent panels.

Geonet Damage:

Damage to the geonet portion of the deployed geocomposite shall be patched by placing a geonet or geocomposite patch extending 12 inches beyond the edges of the damaged area. The patch shall be secured to the original geonet by tying every 6 inches with approved tying devices. If the damage on the geonet portion of the deployed geocomposite is more than 50 percent of the width of the roll, this entire full width section shall be cut out, and the two portions of the geonet (end to end) shall be joined as explained above.

Cover Soil Placement

1. Placement of the cover soil shall proceed immediately following the placement of the geocomposite and its consequent approval by the responsible party. Geocomposites usually shall be covered within 14 days.
2. No construction equipment shall operate directly on the geocomposite. The use of lightweight machinery (i.e. general low ground pressure machines such as ATV's to facilitate deployment) is allowed. The specified cover material shall be spread utilizing wide track equipment. The cover soil shall be placed on the geocomposite from the bottom of the slope proceeding upwards and in a manner which prevents instability of the cover soil, minimize wrinkles, or damage to the geocomposite.

SECTION 4

TRIPLANAR TENFLOW DRAINAGE GEOCOMPOSITE
PARTIAL CASE HISTORY LIST

No	Project Name	Project Location	Engineer	Contractor	Application	Year
1	Corrinth LF	Corrinth, MS	URS Greiner Woodward Clyde	Environmental Specialties, Inc.	Surface Drainage /Landfill Closure	1999
2	Parker Superfund	Lyndon, VT	Rust Environmental	Harding & Lawson	Surface Drainage / Landfill Closure	1999
3	ACF Misc. Project 2	VA	ACF		Surface Drainage / Landfill Closure	2001
4	Concord LF	MA	Littleton Environmental	New England Liner	Surface Drainage /Landfill Closure	2001
5	Diamond Alkali	Newark, NJ	Eckenfelder, Inc.	Sevenson Environmental Services	Surface Drainage /Landfill Closure	2001
6	Essex Cty	NY	C & S Engineer	Atlantic Lining	Surface Drainage / Landfill Closure	2001
7	Hercules	NY	Eckenfelder, Inc.	IT Corporation	Surface Drainage /Landfill Closure	2001
8	Home Depot CT	CT	Haley & Aldrich	New England Liner Systems	Surface Drainage /Landfill Closure	2001
9	Millage Ave LF - UGA Hazardous LF Cap	GA	Brown & Caldwell		Surface Drainage /Landfill Closure	2001
10	White Oak LF Cap	MD	Tetra Tech NUS, Inc	Hallaton, Inc.	Surface Drainage /Landfill Closure	2001
11	BASF Sludge Lagoon	VA	O'Brien & Gere Engineers, Inc.	Maximus	Surface Drainage	2002
12	Former Henry Woods Paint Factory	MA	Haley & Aldrich	New England Liner Systems	Surface Drainage /Landfill Closure	2002
13	Former Marblehead MGP	MA		New England Liner Systems	Surface Drainage /Landfill Closure	2002
14	Fort Sheridan Supurfund	IL	Parson Engineering	GSI	Surface Drainage	2002
15	Gould Facility	FL	Ardaman & Associates, Inc			2002
16	Rome LF	NY	SEA	Conti Enterprises	Surface Drainage /Landfill Closure	2002
17	Saltville Superfund LF	VA	Law Engineering & Env. Services, Inc.	Sevenson Environmental Services	Surface water drainage	2002
18	110 Sand Company	NY	Lockwood, Kessler & Bartlett	Atlantic Lining	Leachate collection layer	2002
19	Town of Brookhaven	NY	L.K. McLean Associates, P.C.	Atlantic Lining	Surface Drainage	2002
20	Tamworth LF	NH	H.E. Bergeron Engineers	Chenango	Surface Drainage /Landfill Closure	2003
21	GM Fisher Guide Plant	NY	O'Brien & Gere Engineers, Inc.	New England Liner	Surface Drainage /Landfill Closure	2003
22	Belchertown Rd. LF	MA	Camp Dresser & Mckee	Chenango	Surface Drainage	2003
23	Brevard Co.	FL	WCG	C.J. Langinselder	Surface Drainage	2003

TRIPLANAR TENFLOW DRAINAGE GEOCOMPOSITE
PARTIAL CASE HISTORY LIST

No	Project Name	Project Location	Engineer	Contractor	Application	Year
24	Central LF Area 5, 6, 7	RI	Pare Engineering	New England Liner System	Subsurface drainage	2003
25	Central RI Phase II & III Area I Cap	RI	Pare Engineering	New England Liner System	Subsurface drainage	2003
26	Coal Ash LF	NY	EA Engineering	Antanna	Surface Drainage /Landfill Closure	2003
27	Griffiss AFB	NY	EA Engineering	Chenango	Surface Drainage /Landfill Closure	2003
28	Holt Road LF	MA	Massachuset DEP	T Ford	Surface Drainage /Landfill Closure Repair	2003
29	Phafftown WWTP	NC	Black & Veatch	Pizzagelli		2003
30	Southpoint Project LF Cap	OH	Parsons Engineering Science		Subsurface drainage	2003
31	Niagara Mohawk	NY	O'Brien & Gere	Antanna	Surface Drainage /Landfill Closure	2003
32	Sandy Hill	MD	Earth Tech	Handex	Surface Drainage /Landfill Closure	2003
33	Ash Grove	NE	Brown & Caldwell	GSI	Surface Drainage /Landfill Closure	2003
34	Mt. Trashmore	VA	Malcolm Pirnie	R.M. Sodderquist	Surface Drainage /Landfill Closure	2003
35	Ottillo	NJ	L. Robert Kimble & Assoc.	Sam-leen	Surface Drainage /Landfill Closure	2003
36	Dobbins AFB	GA	URS Corp		Surface Drainage /Landfill Closure	2004
37	Indian River Coun ty	FL				2004
39	North Hempstead	NJ	Lockwood, Kessler & Bartlett	Atlantic Lining	Surface Drainage /Landfill Closure	2004
40	Pownal	VT	TRC Environmental	Sam-leen	Surface Drainage /Landfill Closure	2004
41	Sandy Hill	MD	Earth Tech	Handex	Surface Drainage /Landfill Closure	2004
42	Ft. Polk	LA	URS Corp	Texas Environmental Plastics, Inc.	Surface drainage and LFG Venting	2004
43	Millage Ave.	GA	URS Corp	ESI	Surface Drairage	2004
44	Alcoha	AL	KEY Environmental	Texas Environmental Plastics, Inc.	Surface Drairage / Landfill Closure	2004
45	Atkemix	KY				2005
46	Lewiston Gas Works	ME				2005

TRIPLANAR TENFLOW DRAINAGE GEOCOMPOSITE
PARTIAL CASE HISTORY LIST

No	Project Name	Project Location	Engineer	Contractor	Application	Year
47	Harrisburg LF	PA	Brinjac Engineering, Inc	Hallaton	Surface water drainage	2005
48	Central					2005
49	Indian Head	MD				2005
50	Indian River Coun ty	FL				2005
51	Bidwell Park	CA				2005
52	Whitehouse waste oil sits	FL	Camp Dresser & Mckee	ESI	Surface water drainage	2005
53	Lake Area Landfill	WI		Poly-Flex Construction	Surface water drainage	2005
54	South Kingston	RI	Louis Berger	New England Liner System	Surface water drainage	2005
55	Foxboro	MA		Mavick Construction	Surface water drainage	2005
56	Thunder Bay	Toronto, Canada	Golder Associates	Teffafix Environmental Technology	Surface water drainage	2005
57	Crescent City landfill	CA	Vector Engineering, Inc.	D&E Construction, Inc.	Surface water drainage	2005
58	Olsen Road Landfill	MD	Shaw Environmental		Surface water drainage	2005
59	GM Powertrain	IN	O'Brian & Gere	American Env. Group	Surface water drainage	2005
60	ELKS Landfill	MA	C&S	New England Liner Systems	Surface water drainage	2005
61	Galco Landfill	TX	Phoenix Environmental Engineers	Environmental Systems	Surface water drainage	2005
62	Dupont-Necco Park Closure	NY	URS Corp	Chenango Contracting	Surface water drainage	2005
63	New Hanover Landfill	NC	SCS	Hallaton, Inc.	Surface water drainage	2005
64	Pittfield	MA		Antana Linings, Inc.	Surface water drainage	2005
65	Southport Road LF	FL	HDR	GSI	Surface water drainage	2005
66	Village of Solvay LF	NY	C&S Engineers	Chenango Contracting	Surface water drainage	2006
67	Hernwood	MD	EA Engineering	Hallaton Inc.	Surface water drainage	2006
68	Uconn	CT			Landfill Surface Drainage	2006
69	Central LF Phase IV Cap	RI	Pare Engineering	New England Lining	Surface water drainage	2006

TRIPLANAR TENFLOW DRAINAGE GEOCOMPOSITE
PARTIAL CASE HISTORY LIST

No	Project Name	Project Location	Engineer	Contractor	Application	Year
70	Crow Lane LF	MA				2006
71	Daimler-Chrysler LF	OH				2006
72	Envirosafe	OH				2006
73	ETE Landfill	NY	Camp Dresser & Mckee	Chenango Contracting	Surface water drainage	2006
74	Rosehill Landfill	RI	Mactec and Consulting Eng.	New England Lining	Surface water drainage	2006
75	York	NE	Olsson Associates	GSI, Inc	Surface water drainage	2006
76	Rose Valley Landfill	NY	URS Corp	Chenango Contracting	Surface water drainage	2006
77	New Hanover Landfill	NC	SCS Engineers	Hallaton Inc.	Surface water drainage	2006
78	Medford Hamlet	NY	Nelson & Pope Engineers	Atlantic Lining Company	Surface water drainage	2006
79	Blue Hill Mining	ME	Sevee & Maher Engineers			2007
80	Badin	NC		Environmental Design & Construction		2007
81	GE Pittsfield	MA				2007
82	GE Lyman	MA				2007
83	Hartford Landfill	CT		TRC Environmental Corp.		2007
84	Danvers	MA		ACF		2007
85	Loyola	MD		Hallaton		2007
86	Santosh LF Cap	OR		ACF WEST	Landfill Surface Drainage	2008
87	Santosh LF Cap	OR		ACF WEST	Gas Venting	2008
88	Cuba Landfill	NY		Chenango	Gas venting layer	2008
89	Central Phase IV	RI		Digregorio		2008
90	Hartford Ash	CT		New England Liner		2008
91	Dominion Energy / Brayton Point	MA		New England Liner		2008

TRIPLANAR TENFLOW DRAINAGE GEOCOMPOSITE
PARTIAL CASE HISTORY LIST

No	Project Name	Project Location	Engineer	Contractor	Application	Year
92	South Dade Landfill Closure #3	FL		Ferguson	Drainage	2009
93	Cuba Landfill Closure	NY		Chenango	Drainage/Venting	2009
94	Hartford Landfill Closure	CT		New England Liner Systems	Drainage	2009
95	NRG Energy Indian River Generating Station	DE	Golder Associates; Eng. Veronica Foster	Hallaton		2009
96	Orange County CAP	FL	S2Li; Engineer: Bob Mackey	Comanco		2010
97	GE Pittsfield	MA		CETCO		2010
98	NRG Energy Indian River Generating Station	DE	Golder Associates; Eng. Veronica Foster	Hallaton		2010
99	Honeywell Semet Residual Ponds	NY		Chenango		2010
100	Westgate LF Cap, NAS South Weymouth	MA		New England Liner		2010
101	Ferry Point Golf Course	NY		CETCO		2010
102	Glen Falls Landfill	NY		CETCO		2010
103	Stauffer Chemical	FL		Comanco		2010
104	110 Sand Company	NY	110 Sand	Atlantic Lining Company		2010
105	Hopewell Township-Sportsfield	NJ		Engineered Sportsfield Solutions		2011
106	East Mesaba Landfill	MN	Connestoga Rovers	KGM Contractors	Capping	2011
107	NRG Indian River Landfill	DE		Hallaton	Capping	2011
108	Elizabeth Mines NTCRA Closure	VT	Nobis Engineering	Terrafix	Capping	2011
106	Honeywell Semet Residual Ponds	NY	O'Brian & Gere	Chenango	Capping	2011
107	US Steel Corporation - MIDC Site	PA	Mark Petschke, ENTACT	JH Waters	Capping	2011

SECTION 5

SYNTEC, LLC TERMS AND CONDITIONS OF SALE

1. **Merger of Prior Agreements.** The terms and conditions herein written shall supersede all previous communications, agreements or contracts, written or verbal, and no understanding, agreement, term, condition, or trade custom in conflict or inconsistent herewith shall be binding on Syntec LLC, its affiliates or subsidiaries ("Seller"). No waiver or modification of the terms and conditions hereof shall be effective unless in writing and signed by both parties. Any term contained in any purchase order or other document which is different from or in addition to Seller's terms and conditions shall be void and seller's terms and conditions shall control. Acceptance of goods, or tender of payment or any portion thereof for such goods, by the individual or entity purchasing goods ("Buyer") shall constitute acceptance of the terms and conditions hereunder."

2. **Credit and Terms of Payment.** Unless otherwise specified, terms of payment are net cash, 30 days after date of invoice. In the event any invoice is not paid within 30 days after the date thereof the Buyer shall pay a late payment fee on the unpaid amounts at the rate of one and one-half percent (1 1/2 %) per month. Buyer shall also pay all collection costs of Seller on any past due amounts including, but not limited to, court costs and attorneys' fees. Seller shall have the right at any time, in its sole and absolute discretion, to (a) limit the amount of credit which Seller may extend to Buyer for the purchase of goods hereunder, and delay manufacture or shipment of Buyer's orders based upon said limitations (b) require full or partial payment in advance, (c) ship goods to Buyer C.O.D., or require payment to be secured by letters of credit; (d) require written guarantees of payment satisfactory to Seller; or (e) cancel or refuse to accept or fulfill any order from Buyer then outstanding or thereafter placed.

3. **Security Interest.** Buyer hereby grants to Seller a security interest in all goods sold to Buyer hereunder to secure the payment of Seller's invoice for the purchase price of such goods. Buyer hereby authorizes Seller to execute on behalf of Buyer and to file one or more financing statements to evidence and perfect a security interest in any and all goods sold by Seller to Buyer with any governmental authority in any jurisdiction as Seller, in its sole and absolute discretion deems necessary or desirable to protect Seller's interests. Buyer agrees to execute at Seller's request any documents required by Seller to evidence and perfect such security interest, including individual or blanket financing statements, chattel mortgages, or similar instruments for filing in any such jurisdictions. Seller shall have all of the rights of a secured creditor under the Uniform Commercial Code or any similar law that may be applicable, including the right of repossession for non-payment.

4. **Price.** Seller's prices are subject to adjustment at any time prior to shipment.

5. **Taxes.** Prices do not include sales, use, excise or similar taxes applicable to the sale of goods hereunder, or their use by Buyer or Buyer's customers. If Seller should be required to pay the same, Buyer shall be liable to pay to and to reimburse Seller for any such taxes. If required by law, Seller may collect sales or use taxes on its invoices for goods sold to Buyer hereunder.

6.A. **Shipments; and Returns.** All shipments of goods hereunder shall be made at Buyer's sole expense and, unless otherwise provided herein, shall be made by Seller F.O.B. point of shipment. Title and risk of damage to or loss of goods shall pass to Buyer upon delivery by Seller to the carrier which shall occur at a place of Seller's choosing. Prices quoted are for furnishing and shipping the quantity or quantities listed for each item, in accordance with the specified delivery schedule, if any. Should shipping release dates or schedules be changed for any reason beyond Seller's control, Seller reserves the right to invoice according to quantities or parts shipped. Subject to acceptance by Seller, Buyer may return goods purchased from Seller provided such goods are current, undamaged and in their original packaging, and provided Buyer pays the cost of shipment. In the event Seller agrees to accept goods returned by Buyer, Buyer shall pay a restocking charge of 25% of the purchase price of the goods, calculated based on the price invoiced to Buyer.

6.B. **Order Cancellation and Quantity Reductions.** In the event the Buyer, for any reason, should decide to cancel the purchase order, or reduce the quantity of material purchased, the seller has the right to impose charges to recover costs incurred in preparation of servicing the order. Such charges will be assessed and under the following structures:

6.B.1. **For Standard Product:** (standard product is defined as specific product configurations as published on seller's website, www.synteccorp.com) if the purchase order is canceled or the purchased quantity is reduced; 1) prior to production of the materials, the buyer is subject to a charge of 5% applied to the purchase price of the canceled or reduced quantity of goods, calculated based on the price and quantities stated on the Seller's Order Confirmation to Buyer. or; 2) after the material is produced the buyer is subject to a charge of 20% applied to the purchase price of the canceled or reduced quantity of goods, calculated based on the price and quantities stated on the Seller's Order Confirmation to Buyer.

6.B.2. **For Custom Product:** (custom product is defined as any product configuration not published on the seller's website, www.synteccorp.com) Prepayment is required for all custom product. If the purchase order is canceled or the purchased quantity reduced prior to production of the materials, the buyer is subject to a charge of 50% of the canceled or reduced quantity of the purchase price of the goods, calculated based on the price invoiced to Buyer or; 2) upon production of the material seller will not refund any prepayment for product produced.

7. **Time of Shipment.** Customer orders shall be processed in order of their acceptance by Seller, and Seller shall use its reasonable efforts to ship goods specified in accepted customer orders in accordance with its manufacturing schedule. Shipment dates are acknowledged to be estimates only, and Seller shall not be liable for any failure to ship or for any delays in shipment, including failures or delays occasioned by contingencies set forth in Section 17 below.

8. **Allocation of Goods.** In the event of shortages in goods for any reason, Seller shall have the right to allocate available goods among its customers in such manner as Seller, in its sole and absolute discretion, may deem appropriate.

9. **Unloading and Demurrage.** All unloading shall be done by Buyer. All demurrage for delays in unloading and responsibility for damages to persons or property resulting from such unloading shall be borne by Buyer and shall be Buyer's responsibility.

10. **Examination of Material.** Prior to acceptance of goods from the carrier, Buyer shall examine the goods and shall advise the transportation company of any damage or shortage thereof and, except for any latent defects, shall advise Seller of any claim with respect to shortages or damages within ten (10) days after receipt. Buyer shall advise Seller of any claim with respect to latent defects within ten (10) days after discovery of such defects. Failure to so advise the transportation company and/or Seller, as the case may be, shall relieve Seller from any claim by Buyer for shortages or damages and shall constitute a waiver by Buyer of all claims with respect to said goods.

11. **Warranties to Buyer.**

11.1 Defects. Seller warrants to Buyer that all goods sold to Buyer hereunder shall be free from defects in material and workmanship for a period of one year from the date of shipment. This warranty shall not apply to any goods (i) which have been repaired or altered outside of Seller's factory, or in any way in Seller's judgment, to affect their stability, (ii) which have been subject to misuse, negligence, accident or improper storage or handling, (iii) which have been put to other than normal use and service or (iv) which have been exposed to conditions beyond the operating constraints specified by Seller. Seller is not responsible for the selection or suitability of the goods by or for the Buyer or its customers. Seller makes no representation or warranty as to the Buyer's success or prospects for success in marketing or selling the goods to Buyer's customers.

11.2 Remedy. Seller's sole obligation, and Buyer's sole remedy, under the warranties set forth above shall be the repair or, at Seller's sole option, the replacement of any goods which may be determined by Seller to be defective, provided that Buyer shall have notified Seller in writing of such defects within the warranty period set forth above and, provided further, that Buyer shall ship such goods to Seller's offices for repair or replacement, if necessary, in accordance with Section 11.3 below. Notwithstanding the foregoing, in no event shall Seller be liable to Buyer for any amount in excess of the purchase price for the goods paid by Buyer to Seller.

11.3 Cost. Buyer shall pay all freight, insurance, taxes and other costs incurred in the return of goods to Seller's plant for repair or replacement, and Seller shall pay all such costs incurred in the return shipment from Seller's office or plant to Buyer, provided that, if Seller determines, in its sole judgment, that the goods were not defective when returned or were not otherwise covered by the warranties contained herein, Buyer shall pay all such costs

12. **Limitation of Warranties.** THE WARRANTIES SET FORTH IN SECTION 11 OF THIS CONTRACT ARE THE SOLE AND EXCLUSIVE WARRANTIES OF SELLER WITH RESPECT TO THE GOODS SOLD HEREUNDER AND ARE MADE IN LIEU OF ALL OTHER WARRANTIES. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE FOR ANY PRODUCTS, SERVICES OR OTHER ITEMS SOLD OR FURNISHED UNDER THESE TERMS AND CONDITIONS, AND SELLER DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND WAIVES ANY AND ALL WARRANTIES TO THE EXTENT PERMISSIBLE UNDER APPLICABLE LAW.

13. **Limitation and Exculpation of Liability.** IN NO EVENT SHALL SELLER, ITS SUBSIDIARIES, AFFILIATES, AGENTS OR EMPLOYEES BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING OUT OF THE AGREEMENT AS TO WHICH THESE TERMS AND CONDITIONS ARE APPLICABLE, OR THE SALE OR FURNISHING OF ANY GOODS, SERVICES OR OTHER ITEMS HEREUNDER, OR ANY THIRD-PARTY'S OWNERSHIP, MAINTENANCE OR USE OF ANY GOODS, SERVICES OR OTHER ITEMS FURNISHED HEREUNDER INCLUDING, BUT NOT LIMITED TO, LOST PROFITS OR REVENUES, LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED GOODS, DAMAGE TO ASSOCIATED GOODS, COSTS OF CAPITAL, COSTS OF SUBSTITUTE GOODS, OR CLAIMS OF CUSTOMERS FOR SUCH DAMAGES. IN NO EVENT SHALL SELLER, ITS SUBSIDIARIES, AFFILIATES, AGENTS OR EMPLOYEES BE LIABLE FOR THE NEGLIGENCE, GROSS NEGLIGENCE, OR OTHER INTENTIONAL MISCONDUCT OF ANY THIRD-PARTY NOR SHALL SELLER BE LIABLE FOR ITS OWN NEGLIGENCE, BUT SELLER SHALL ONLY BE LIABLE FOR ITS GROSS NEGLIGENCE, OR INTENTIONAL MISCONDUCT. BUYER'S SOLE REMEDY FOR ANY LIABILITY OF SELLER OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, GROSS NEGLIGENCE, FRAUD, OR INTENTIONAL MISCONDUCT, WITH RESPECT TO ANY PRODUCT, SERVICE OR OTHER ITEM OR SERVICE FURNISHED TO BUYER UNDER THE AGREEMENT AS TO WHICH THESE TERMS AND CONDITIONS ARE APPLICABLE OR OTHERWISE, SHALL BE LIMITED TO THE REMEDY SET FORTH IN SECTION 11.2 OF THESE TERMS AND CONDITIONS. SELLER WILL NOT BE RESPONSIBLE FOR MEETING ANY FEDERAL, STATE, LOCAL OR MUNICIPAL CODE OR SPECIFICATION (WHETHER STATUTORY, REGULATORY OR CONTRACTUAL), INCLUDING SPECIAL BUILDING OR CONSTRUCTION CODES, UNLESS BUYER SO SPECIFIES IN WRITING AT THE TIME OF ORDER AND AN AUTHORIZED EMPLOYEE OF SELLER AGREES THERETO IN WRITING.

14. **Use of Names and Marks.** Buyer represents, warrants and covenants that it shall not use, make reference to, publish, copy or otherwise designate, either orally or in writing, any logo, trademark, service mark or trade name of Seller ("Mark(s)") without prior written consent of Seller. Whenever Buyer may be permitted to use any Mark in any form of printed material, Buyer shall place an asterisk immediately after and slightly above the first use of the Mark which shall correspond to a footnote reading "Trademark of Syntec LLC." Upon the termination of the Agreement as to which these terms and conditions are applicable and at the written direction of Seller, Buyer shall discontinue the use of all Marks of the Seller and all legends adopted in accordance with this Section 14. Buyer further agrees to leave in place all designations of Marks placed on the goods by Seller.

15. **Proprietary Information and Confidentiality.** Buyer shall hold in confidence and shall not disclose, divulge or publish to any person, or use or copy any trade secret, process, record, plan, projection, or other information pertaining to Seller or customers or prospective customers of Seller including financial information, marketing strategies or any other confidential or proprietary information (including these terms and conditions, any other contract as to which these terms and conditions form a part, or any other agreement between Buyer and Seller) acquired hereunder or in connection herewith, or disclosed or

transmitted by Seller or any of its agents, employees or affiliates to Buyer, except as authorized in writing by Seller. Buyer shall keep, and shall require its officers, directors, employees and agents to keep, all such information confidential, and shall store such information in a secure location, marked as confidential. Upon termination of the Agreement as to which these terms and conditions are applicable and at the written direction of Seller, Buyer shall surrender all written and descriptive matters including, but not limited to, descriptions, manuals or other papers or documents (and all copies thereof) which contain any confidential or proprietary information. The obligation to keep such information confidential shall continue in effect after the termination for any reason of the Agreement as to which these terms and conditions are applicable.

16. **Infringement.** Seller shall have the right to defend and, at its sole option, settle any suit or proceeding brought against Buyer based upon a claim that any product manufactured or assembled by Seller infringes upon any United States patent. Buyer will promptly notify Seller of any such claim and shall provide Seller with all authority, information and prompt assistance necessary for the defense of the same. Seller shall indemnify and hold Buyer harmless from and against any final judgment that any goods sold hereunder infringes upon a United States patent, but only to the extent of the amount paid by Buyer for such goods. The foregoing states the entire liability of Seller to Buyer for infringement. In the event any such claim for infringement shall be made, Seller shall have the option to immediately terminate the Agreement as to which these terms and conditions are applicable with respect to any alleged infringing goods and to terminate any unfulfilled orders for the alleged infringing goods. IN NO EVENT SHALL SELLER BE LIABLE FOR THE INFRINGEMENT OF ANY PATENTS CAUSED BY THE USE OF ANY GOODS IN COMBINATION WITH OTHER ARTICLES OR MATERIALS OR FOR INFRINGEMENT OF ANY PROCESS.

17.A. **Excusable Delays.** The obligations of Seller are contingent upon acts of God, floods, fires, storms, strikes or similar occurrences, as well as governmental restrictions, prohibitions and regulations or other interferences beyond the parties' reasonable control, to the extent that the same prevent or delay the performance of the obligations herein contained.

17.B. **Force Majeure Clause.** A Force Majeure Event means any act or event, whether foreseen or unforeseen, in that (1) prevents Syntec in whole or in part, from performing its obligations to manufacture products ordered by the Buyer; or satisfying any conditions on shipping product to the Buyer; (2) is beyond the reasonable control of and not the fault of Syntec; or (3) Syntec has been unable to avoid or overcome by the exercise of due diligence.

17.B.1 **Suspension of Performance.** Subject to the provisions of this Force Majeure Clause, if a Force Majeure Event occurs, Syntec is excused from (1) whatever performance is prevented by the Force Majeure Event to the extent so prevented; and (2) satisfying whatever conditions precedent to the customer's obligations that cannot be satisfied to the extent they cannot be satisfied.

17.B.2 **Termination.** If the suspension of performance continues for a period of one week as a result of a Force Majeure Event, either party is entitled to terminate the purchase agreement by giving a notice to the other party in writing, which is the exclusive remedy available to both parties with respect to a Force Majeure Event.

17.B.3 **Shipments made at the Expense of Syntec (FOB Jobsite).** If Syntec's selected carriers refuse to deliver any products to Buyer due to a Force Majeure Event, the Buyer has the option of either arranging for shipment at its expense, receiving a credit from Syntec for the freight charges in the quotation as built into the unit price of the product, or terminating the transaction under the provisions of the Force Majeure Clause.

18. **Indemnification.** Buyer agrees to indemnify and hold harmless Seller and its affiliates, employees, officers, directors, agents, and attorneys from any and all damages, liabilities, losses, or expenses, including reasonable attorney's fees, and costs and expenses of litigation, arising in any manner from Buyer's performance of this agreement, including but not limited to, any and all claims, demands, causes of action, fines, penalties, proceedings or suits for bodily injury, illness, disease, death, property damage or loss, loss of use, maintenance, cure, or wages arising from or on account of the performance or non-performance of this Agreement by Buyer or its affiliates, employees, officers, directors, agents, or independent contractors,

the fault of Buyer, or which are caused in part or in whole by any act or omission whether passive or active, of Buyer.

19. **Testing.** Products manufactured by Seller will be tested during the manufacturing process, based upon customary random sampling techniques in accordance with Seller specifications. All material testing will be performed by Seller's laboratory, with record thereof maintained according to customary Syntec LLC Quality Control and Quality Assurance standards and policies ("QCQA"). Copies of the standard QCQA results are available to Buyer. Buyer may have goods tested by independent laboratories at Buyer sole cost and expense; however, all results are subject to confirmation by Seller. If the results reported by the independent laboratory do not meet Seller's specifications, Buyer and Seller agree that any dispute will be resolved by the method for settling disputes identified in the American Society of Testing Materials applicable standard. Buyer's sole remedy for failure to meet Seller's specifications shall be return and replacement of the product and in no event shall Seller be liable for costs of removal and reinstallation of product if product is accepted by Buyer, installed and later is proven not to meet Seller specifications.

20. **Assignment.** This contract shall be binding upon and inure to the benefit of the parties, their successors and assigns, provided that Buyer may not assign the agreement as to which these terms and conditions apply without prior written consent of Seller.

21. **Attorneys' Fees.** In the event that any legal action or other proceeding is brought for the enforcement of this contract or in connection with any provision contained herein, Seller shall be entitled to recover its reasonable attorneys' fees, court costs and expenses, even if not taxable court costs, including, but not limited to, those fees and costs incurred incidentally to arbitration, mediation, investigation, discovery, travel, appellate proceedings, bankruptcy, collection, retention of expert witnesses, and post judgment proceedings.

22. **WAIVER OF JURY TRIAL.** THE PARTIES KNOWINGLY AND WILLINGLY WAIVE ANY RIGHT THEY HAVE UNDER APPLICABLE LAW TO A TRIAL BY JURY IN ANY DISPUTE ARISING OUT OF OR IN ANY WAY RELATED TO THIS CONTRACT OR THE ISSUES RAISED BY THAT DISPUTE.

23. **Applicable Law.** With regard to any dispute relating in any manner to the performance this Agreement, Buyer agrees that the State of Maryland shall have jurisdiction over the Buyer, and that any dispute relating in any manner to this Agreement shall be brought in either the Circuit Court of Maryland for Baltimore City or the United States District Court for the District of Maryland. This Agreement shall be construed under the laws of the State of Maryland, without regard to conflicts of law principals.



4800 Pulaski Highway, Baltimore, MD 21224, USA
Phone 410.327.1070 800.874.7437
Fax 410.327.1078
www.synteccorp.com



Client:	New England Liner Systems		
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing		
Project Location:	Providence, RI		
GTX #:	12299	Tested By:	meo
Test Date:	10/09/12	Checked By:	jdt
Sample ID:	Geomembrane (10/04/12)		
Description:	Black, 40 mil LLDPE microspike		

**Initial Tear Resistance of Plastic Film and Sheeting
by ASTM D 1004
constant rate of extension (CRE) tensile testing machine**

Specimen Number	Machine Direction		Cross Machine Direction	
	Thickness, mil	Tear Resistance, lb	Thickness, mil	Tear Resistance, lb
1	51.5	43	45.3	37
2	51.0	38	46.3	36
3	40.8	37	47.0	33
4	45.6	40	49.0	39
5	44.3	40	48.5	39
6	43.1	41	46.4	45
7	47.8	39	47.4	39
8	46.7	42	45.7	41
9	49.7	42	42.2	34
10	44.6	41	46.8	35
Average	46.5	40	46.4	38
Standard Deviation	3.50	1.9	1.89	3.5

Comments: Roll # not provided

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.



Client:	New England Liner Systems
Project:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing
Project Location:	Providence, RI
GTX Project No.:	12299
Test Date:	10/09/12
Tested By:	meo
Checked By:	jdt

**Density of Plastics by the Density-Gradient Technique
by ASTM D 1505**

Sample ID	Spec. #	Density, g/cm ³
Geomembrane (10/04/12)	1	0.9327
Black, 40 mil LLDPE microspike	2	0.9330
	3	0.9330
	AVG.	0.9329

Notes: Temperature: 23°C
 Roll # not provided

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.



Client:	New England Liner Systems	
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing	
Project Location:	Providence, RI	
GTX #:	12299	Tested By: ad
Test Date:	10/09/12	Checked By: jdt

Carbon Black in Olefin Plastics by ASTM D 1603

Sample ID	Specimen Number	Carbon Black, %
Geomembrane (10/04/12)	1	2.42
Black, 40 mil LLDPE microspike	2	2.45
	Average	2.44

Comments: Roll # not provided

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.



Client:	New England Liner Systems	
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing	
Project Location:	Providence, RI	
GTX #:	12299	Tested By: meo
Test Date:	10/10/12	Checked By: jdt

Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics by ASTM D 5596

Sample ID	Specimen Number	Category Rating Random Field of View	
		R _f 1	R _f 2
Geomembrane (10/04/12) Black, 40 mil LLDPE microspike	1	1	1
	2	1	1
	3	1	1
	4	2	1
	5	1	1
	Average	1	1
	Lowest Quality Observed	2	1

Comments: Method of preparation: Microtome
 Roll # not provided

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.



Client:	New England Liner Systems		
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing		
Project Location:	Providence, RI		
GTX #:	12299	Tested By:	bfs
Test Date:	10/09/12	Checked By:	jdt
Sample ID:	Geomembrane (10/04/12)		
Sample Description:	Black, 40 mil LLDPE microspike		

Measurement of the Core Thickness of Textured Geomembranes by ASTM D 5994

Testing Machine:	Mitutoyo Digimatic Indicator, Model #: IDC-112E	Pressure:	2.0 oz
Presser Foot:	cone point	Loading Time:	5 seconds
Specimen Size:	2-inch-diameter		

Measurement Number	Thickness, mils
1	48.0
2	42.8
3	45.7
4	46.3
5	48.2
6	43.3
7	46.0
8	47.6
9	43.7
10	42.7
Average	45.4
Standard Deviation	2.04
Coefficient of Variation, %	4.50

Comments: Roll # not provided

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.



Client:	New England Liner Systems	
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing	
Project Location:	Providence, RI	
GTX #:	12299	Tested By: meo
Test Date:	10/09/12	Checked By: jdt
Sample ID:	Geomembrane (10/04/12)	
Description:	Black, 40 mil LLDPE microspike	

Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes by ASTM D 6693

Testing Machine: Instron 1123	Testing Speed: 20.0 in./min.
Grip Separation: 2.5 in.	Grips: ATS pneumatic
Temperature, °F: 66.2 - 73.4	Die Type: IV

Direction	Specimen Number	Thickness, mil	*YIELD			BREAK		
			Tensile Strength,		Elongation,	Tensile Strength,		Elongation,
			ppi	psi	%	ppi	psi	%
Machine	1	43.9	---	---	---	155	3523	444
	2	46.6	---	---	---	187	4007	446
	3	48.0	---	---	---	186	3879	461
	4	47.6	---	---	---	154	3243	494
	5	49.1	---	---	---	160	3250	436
	Average	47.0	---	---	---	168	3580	456
	Standard Deviation	1.97	---	---	---	16.6	352.9	23.0
Cross Machine	1	46.8	---	---	---	156	3331	604
	2	49.1	---	---	---	162	3299	620
	3	45.7	---	---	---	149	3263	589
	4	44.7	---	---	---	140	3129	558
	5	46.6	---	---	---	155	3326	587
	Average	46.6	---	---	---	152	3270	592
	Standard Deviation	1.65	---	---	---	8.39	83.06	23.0

Comments: yield gauge length = 1.3 in.
break gauge length = 2.0 in.
ppi = pounds per inch
psi = pounds per square inch

*Yield not typically reported for LLDPE materials
Roll # not provided

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.



Client:	New England Liner Systems		
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing		
Project Location:	Providence, RI		
GTX #:	12299	Tested By:	bfs
Test Date:	10/09/12	Checked By:	jdt
Sample ID:	Geomembrane (10/04/12)		
Sample Description:	Black, 40 mil LLDPE mirospike		

Asperity Height of Textured Geomembranes by ASTM D 7466

Testing Machine:	Mitutoyo Digimatic Indicator, Model #: IDC-112E
Contact Point:	0.05 in, tapered to point
Test Sample:	3 ft. x roll width

Measurement Number	Asperity Value, inches	
	Side A	Side B
1	0.038	0.039
2	0.036	0.038
3	0.038	0.041
4	0.038	0.039
5	0.036	0.042
6	0.039	0.041
7	0.039	0.039
8	0.037	0.042
9	0.039	0.041
10	0.037	0.035
Average	0.038	0.039
Standard Deviation	0.001	0.002
Coefficient of Variation, %	2.470	4.752

Comments: Side A - White
Side B -Black
Roll # not provided

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.



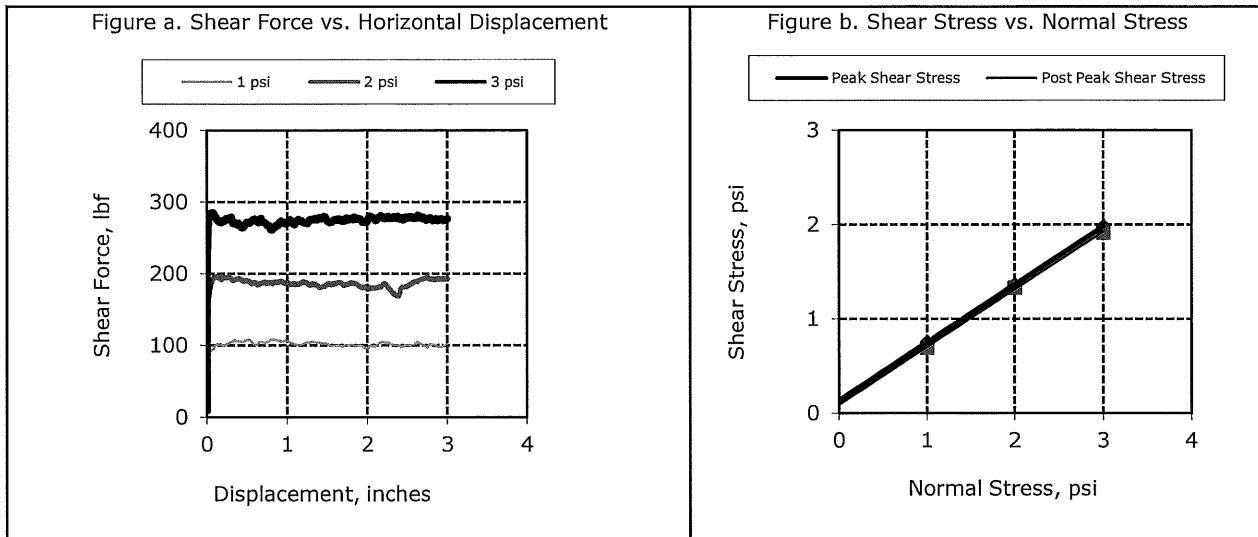
Client:	New England Liner Systems		
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing		
Project Location:	Providence, RI		
GTX #:	12299		
Start Date:	10/08/12	Tested By:	bfs
End Date:	10/10/12	Checked By:	jdt
Soil ID:	Subgrade		
Soil Description:	Moist, brownish gray sand		
Geosynthetic ID:	Geomembrane (10/04/12). Roll # not provided.		
Geosynthetic Description:	Black, 40 mil LLDPE microspike		

Interface Shear Test Series by ASTM D 5321

Test Series #:	1
Test Profile - Top to Bottom:	textured steel plate / SOIL / GEOMEMBRANE / steel plate
Soil Preparation:	Soil compacted to 90% of Maximum Dry Density at Optimum Moisture Content
Compaction Characteristics:	Maximum Dry Density 124.1 pcf Optimum Moisture Content 11.3 % Compaction Test Method ---
Geosynthetic Preparation:	Test set-up saturated at normal load for 15 minutes prior to shear.
Test Equipment:	Top box = 12 in x 12 in; Bottom box = 16 in x 12 in; Load cells and LVDTs connected to data acquisition system for shear force, normal load and horizontal displacement readings; Flat plate clamping device; surface area = 144 in ²
Horizontal Displacement, in/min:	0.2 Test Condition: inundated

Parameter	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Initial Moisture Content, %	10.9	10.6	12.0	---	---	---
Initial Dry Density, pcf	112	112	111	---	---	---
Percent Compaction, %	90.1	90.4	89.3	---	---	---
Final Moisture Content, %	16.8	15.7	15.6	---	---	---
Normal Compressive Stress, psi	1.0	2.0	3.0	---	---	---
Peak Shear Stress, psi	0.8	1.4	2.0	---	---	---
Post Peak Shear Stress, psi	0.7	1.3	1.9	---	---	---
Peak Secant Friction Angle, °	37.0	34.3	33.4	---	---	---
Post-Peak Secant Friction Angle, °	34.8	33.7	32.6	---	---	---
Pre-Test: Average Asperity, mils	39.3	39.5	38.6	---	---	---
Post-Test: Average Asperity, mils	39.3	39.3	38.3	---	---	---

NOTES: Asperity measurements taken on side of membrane involved in shear plane in general accordance with ASTM D 7466. Six measurements taken at the same locations before and after test.	Peak Friction Angle:	31.5	degrees
	Peak Adhesion:	0.1	psi
	Post Peak Friction Angle:	31.4	degrees
	Post Peak Adhesion:	0.1	psi



Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material. Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.



Client:	New England Liner Systems		
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing		
Project Location:	Providence, RI		
GTX #:	12299		
Start Date:	10/08/12	Tested By:	bfs
End Date:	10/10/12	Checked By:	jdt
Geosynthetic ID:	Geocomposite (10/04/12). Roll # not provided. Geomembrane (10/04/12). Roll # not provided.		
Geosynthetic Description:	Geocomposite: Black, double-sided nonwoven triplanar Geomembrane: Black, 40 mil LLDPE microspike		

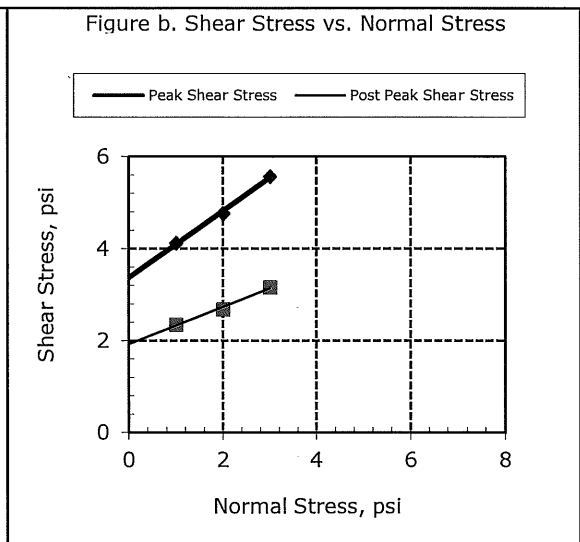
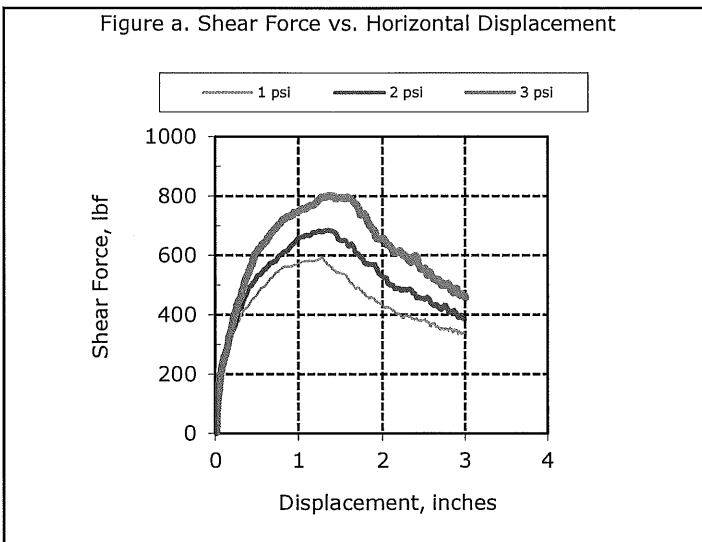
Interface Shear Test Series by ASTM D 5321

Test Series #:	2		
Test Profile - Top to Bottom:	textured steel plate / GEOCOMPOSITE / GEOMEMBRANE / textured steel plate		
Geosynthetic Preparation:	Test set-up saturated at normal load for 15 minutes prior to shear.		
Test Equipment:	Top box = 12 in x 12 in; Bottom box = 16 in x 12 in; Load cells and LVDTs connected to data acquisition system for shear force, normal load and horizontal displacement readings; Flat plate clamping device; surface area = 144 in ²		
Horizontal Displacement, in/min:	0.2	Test Condition:	inundated

Parameter	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Normal Compressive Stress, psi	1.0	2.0	3.0	---	---	---
Peak Shear Stress, psi	4.1	4.8	5.6	---	---	---
Post Peak Shear Stress, psi	2.4	2.7	3.2	---	---	---
Peak Secant Friction Angle, °	76.4	67.2	61.7	---	---	---
Post-Peak Secant Friction Angle, °	67.0	53.3	46.5	---	---	---
Pre-Test: Average Asperity, mils	38.0	37.9	37.8	---	---	---
Post-Test: Average Asperity, mils	37.8	37.7	37.6	---	---	---

NOTES: Asperity measurements taken on side of membrane involved in shear plane in general accordance with ASTM D 7466. Six measurements taken at the same locations before and after test.

Peak Friction Angle:	35.9	degrees
Peak Adhesion:	3.4	psi
Post Peak Friction Angle:	22.0	degrees
Post Peak Adhesion:	1.9	psi



Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material. Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.



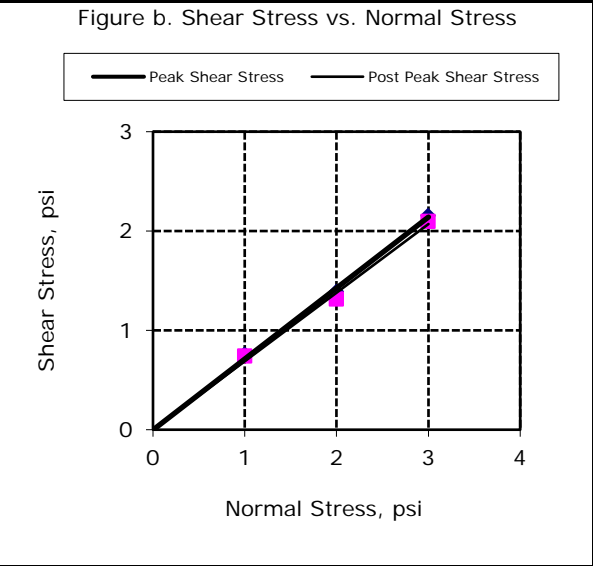
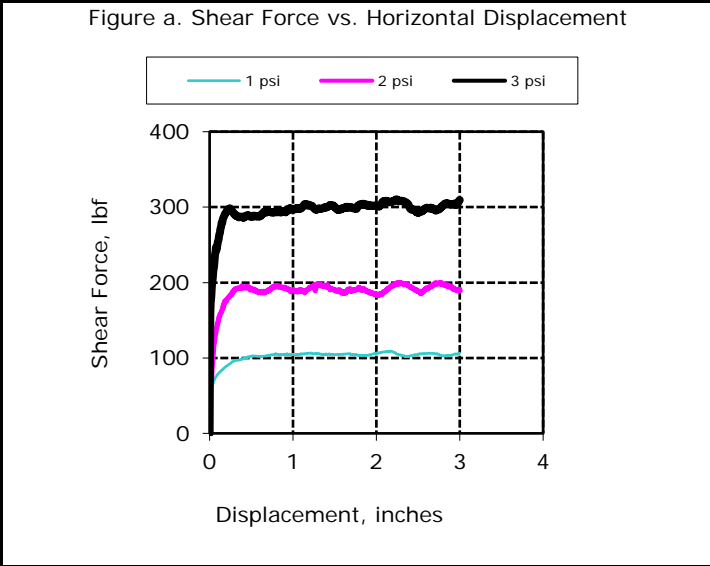
Client:	New England Liner Systems		
Project Name:	Parcel C-1 Phase 1 Cap, Former Gorham Manufacturing		
Project Location:	Providence, RI		
GTX #:	12299		
Start Date:	11/02/12	Tested By:	bfs
End Date:	11/07/12	Checked By:	jdt
Soil ID:	Protective Soil		
Soil Description:	Moist, dark brown sand with silt		
Geosynthetic ID:	Geocomposite: Roll # 10/4/12		
Geosynthetic Description:	Saturated at normal load for 30 minutes prior to shear		

Interface Shear Test Series by ASTM D 5321

Test Series #:	3		
Test Profile - Top to Bottom:	textured steel plate / SOIL / GEOCOMPOSITE / steel plate		
Soil Preparation:	Soil compacted to 90% of Maximum Dry Density at Optimum Moisture Content.		
Compaction Characteristics:	Maximum Dry Density	125.7 pcf	
	Optimum Moisture Content	10.9 %	
	Compaction Test Method	---	
Geosynthetic Preparation:	Saturated at normal load for 30 minutes prior to shear		
Test Equipment:	Top box = 12 in x 12 in; Bottom box = 16 in x 12 in; Load cells and LVDTs connected to data acquisition system for shear force, normal load and horizontal displacement readings; Flat plate clamping device; surface area = 144 in ²		
Horizontal Displacement, in/min:	0.02	Test Condition:	inundated

Parameter	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Initial Moisture Content, %	11.0	11.6	11.4	---	---	---
Initial Dry Density, pcf	113	112	112	---	---	---
Percent Compaction, %	89.7	89.3	89.4	---	---	---
Final Moisture Content, %	15.3	14.8	13.5	---	---	---
Normal Compressive Stress, psi	1.0	2.0	3.0	---	---	---
Peak Shear Stress, psi	0.8	1.4	2.2	---	---	---
Post Peak Shear Stress, psi	0.7	1.3	2.1	---	---	---
Peak Secant Friction Angle, °	37.2	34.8	35.7	---	---	---
Post-Peak Secant Friction Angle, °	36.5	33.3	35.0	---	---	---

NOTES:	Peak Friction Angle:	34.9	degrees
	Peak Adhesion:	0	psi
	Post Peak Friction Angle:	34.2	degrees
	Post Peak Adhesion:	0	psi



Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material. Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.



LIMITED MATERIAL WARRANTY

OWNER:	Textron Inc.
REQUESTED BY:	New England Liner Systems
PROJECT:	Parcel C-1, Phase 1 Cap
TYPE MATERIAL:	40 mil LLDPE DS Microspike®
LOCATION:	Providence, RI

The company, referred to herein as AGRU AMERICA, warrants that AGRU AMERICA liners will correspond to the specifications as indicated in AGRU AMERICA technical records, catalogs, guidelines and test certificates at the time when sold.

AGRU AMERICA warrants that the material is faultless and resistant for a period of Ten (10) Years, prorated, from the point of time sold, when properly installed, and used in a Landfill (Buried).

AGRU AMERICA's liability under this warranty is not applicable when damage is caused by:

- Natural phenomena such as thunderstorms, floods, earthquakes, act's of war or other acts of God;
- Chemicals which are not suitable for LLDPE liner materials according to chemical resistance guides or from experience.

Further, AGRU AMERICA is not liable for damages due to the misapplication, incorrect installation, and damages resulting from any kind of inadequate handling. In the event that any defects are noticed in the liner, AGRU AMERICA must be notified in writing within thirty (30) days.

AGRU AMERICA shall be given an opportunity to ascertain the cause of damages. AGRU AMERICA reserves the right to decide how damages will be settled.

Under no circumstances will AGRU AMERICA assume liability for consequential damages due to defective liner or incorrect installation. AGRU AMERICA will not be responsible for failures arising from incorrect welding of seams in the installation.

Further, AGRU AMERICA's warranty will be void in the event that the buyer performs repairs or makes alterations without the express approval of AGRU AMERICA in writing. AGRU AMERICA's maximum liability under this warranty will not exceed the purchase price of liner and will only be in force when payment has been made in full and further claims regardless of the legal suppositions are not applicable.

This warranty is only valid on condition that the generally approved technical standards and in particular the guidelines for the installation of the liner are followed and only after full bank funding.

For AGRU AMERICA, Inc.

A handwritten signature in black ink that reads "Paul Barker" followed by a stylized flourish or initials.

Authorized Official

(Date)

Paul W. Barker, Vice President
Date: October 30, 2012

NEW ENGLAND LINER SYSTEMS, INC

40 Westfield Drive, Plantsville, CT 06479

MEMBRANE LINER INSTALLATION WARRANTY

FOR

Parcel C-1 Phase-1 Cap – Former Gorham Manufacturing Site

Subject to the terms and conditions set forth below, New England Liner Systems Inc. warrants to Textron, Inc. pursuant to September 5, 2012 for liner installation at the above referenced project shall be free from defects in workmanship for a period of 1 Year from 10-30-12.

This warranty does not cover any damage or defects in the liner found to have been a result of misuse, abuse, faulty design, or conditions existing after installation including, malicious mischief; vandalism; sabotage; fire; acts of God; acts of the public enemy; acts of war or public rebellion; severe weather conditions of all types; damage due to ice or wind; damage due to subsidence; damage due to machinery, foreign objects, chemical attack or animals.

The warranty is subject to the following conditions:

1. The liner shall have been installed over a properly prepared subgrade, free from sharp objects or protrusions and foreign objects to a depth of 6 inches; and
2. If "fill " is used over the top of the liner it shall be free of all foreign or sharp objects.

In the event circumstances are found to exist which Textron, Inc. believe may give rise to a claim under this warranty, the following procedures shall be followed:

- a. Textron, Inc. shall give New England Liner Systems, Inc. written notice of the facts and circumstances of said claim within 10 days of becoming aware of said facts and circumstances. Notice shall be by registered or certified mail, return receipt requested, addressed to New England Liner Systems, Inc. 40 Westfield Drive, Plantsville, Connecticut 06479. The words "Warranty Claim" shall be clearly marked on the face of the envelope in the lower right hand corner. Said notice shall contain at a minimum the name and address of the owner, the location, name, address and date upon which the liner installation was completed. Claim shall include the facts known to Textron, Inc. upon which the claim is based. Failure to provide New England Liner Systems, Inc. with timely notice shall bar the Textron, Inc. from any remedy under this warranty.
- b. Within twenty days after receipt of the notice described in paragraph a, above, New England Liner Systems, Inc. shall inspect the alleged defect and determine whether there has been a violation of this warranty. Textron, Inc. shall pay the expenses incurred by New England Liner Systems, Inc. in making the inspection, including current per diem rates for personnel involved, in the event that New England Liner Systems, Inc. determines that the claim is not covered under this warranty.
- c. Textron, Inc. shall not repair, or attempt to repair, replace, remove, alter or disturb any liner, nor allow anyone else to repair, attempt to repair, replace, remove, alter or disturb any liner prior to such inspection provided, however, that Textron, Inc. may take emergency action necessary to prevent injury to persons, or damage to property or the environment. Failure to strictly comply with this paragraph shall bar Textron, Inc. from any remedy under this warranty.

d. If New England Liner Systems, Inc. determines that the alleged defects are covered by this warranty, New England Liner Systems, Inc. shall either repair or replace only so much of the liner as is defective. The remedies provided herein are the exclusive remedies available under this warranty. Any determination as to whether the liner has performed satisfactorily or whether a particular defect is covered under this warranty or what constitutes the appropriate remedy for a particular defect shall be made by New England Liner Systems, Inc. after consultation with Textron, Inc.

e. Textron, Inc. agree that they shall provide New England Liner Systems, Inc. with clean, dry and unobstructed access to the damaged or defective liner, in order for New England Liner Systems, Inc. to perform inspections and / or repairs which may be required under this warranty. New England Liner Systems, Inc. shall not be liable for any costs relating to providing clean, dry and unobstructed access to the liner.

The remedies provided to Textron, Inc. herein are the exclusive remedies available under this warranty and are intended for the sole benefit of Textron, Inc. Neither this warranty nor any rights hereunder shall be assignable without the express written consent of New England Liner Systems, Inc. New England Liner Systems, Inc. shall have no liability under this warranty to third parties or strangers to this agreement. The warranty set forth above is the only warranty applicable to the liner installation, and all other installation warranties, expressed or implied, including, but not limited to, any warranty of merchantability or fitness for a particular purpose are hereby disclaimed. In no event shall New England Liner Systems, Inc. be liable in contract or in tort (including negligence) for any direct, incidental, special or consequential damages resulting from the use of, or defects in the liner materials or installation thereof. Except for the warranties set forth above, no representation or warranty made by any sales or other representative of New England Liner Systems, Inc. or any other person, concerning the installation of the liner shall be binding upon New England Liner Systems, Inc.

This warranty shall not be effective unless full and timely payment has been made to New England Liner Systems, Inc. for materials and services provided in connection with the above referenced project.

Any waiver of the terms and conditions of this warranty shall be in writing, signed by New England Liner Systems, Inc. The failure to insist upon strict compliance with any of the terms and conditions contained herein shall not act as a waiver of strict compliance with all of the remaining terms and conditions of this warranty and shall not operate as a waiver of strict compliance with the terms and conditions of this warranty as to future claims.

New England Liner Systems, Inc.

By:  _____

Date: 2-7-13

David Welch President



APPENDIX K
SEED MIX CERTIFICATION

AMEC Earth & Environmental, Inc.
Contractor Submittal Review Form



Project:	<u>Textron Parcel C-1 Phase I Cap</u>	Review's Name:	<u>Danielle Ahern</u>
Contractor:	<u>ET&L Corp</u>		
Date:	<u>4/17/2013</u>		
Submittal #:	<u>015</u>		
Reference #:	<u></u>		
Subject:	<u>Wetland and Upland Seed Mix</u>		

- A -- Approved as submitted
- B -- Approved, except as noted
- C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.
- D -- Will be returned by separate correspondence
- E -- Disapproved (See Below)
- F -- Receipt acknowledged
- FX -- Receipt acknowledged, does not comply as noted with contract requirements.
- G - Other (Specify)

Comments:

Based on calculations, the percent Pure Live Seed does not meet specification.

Please provide testing date for the materials submitted.

Please provide net weight of the Upland Mix for application rate confirmation.

AMEC Earth & Environmental, Inc.
Contractor Submittal Review Form



Project:	<u>Textron Parcel C-1 Phase I Cap</u>	Review's Name:	<u>Danielle Ahern</u>
Contractor:	<u>ET&L Corp</u>		
Date:	<u>4/17/2013</u>		
Submittal #:	<u>019</u>		
Reference #:	<u></u>		
Subject:	<u>Wetland and Upland Seed Mix - REVISED</u>		

- A -- Approved as submitted
- B -- Approved, except as noted
- C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.
- D -- Will be returned by separate correspondence
- E -- Disapproved (See Below)
- F -- Receipt acknowledged
- FX -- Receipt acknowledged, does not comply as noted with contract requirements.
- G - Other (Specify)

Comments:

The resubmittal of wetland and upland seed mixes received on 10/23/2012 have been approved as provided.

PURITY	UPLAND SOIL CAP MIX SEED VARIETIES	GERM
74.55%	CREeping RED FESCUE	85%
14.68%	EMPIRE BIRDSFOOT TREFOIL	85%
4.80%	EXETER COLONIAL BENTGRASS	88%
4.74%	LA QUINTA PERENNIAL RYEGRASS	90%

0.99% INERT
TESTED: 10/2012

COARSE KIND: NONE CLAIMED
0.24% CROP
VALLEY GREEN INC CHARLTON, MA

0.00% WEED
508-987-0101

PURITY	WETLAND BUFFERCAP MIX SEED VARIETIES	GERM
32.61%	SWITCHGRASS	85%
24.55%	CREeping RED FESCUE	85%
17.58%	ANNUAL RYEGRASS	90%
15.49%	TIMOTHY CLIMAX	90%
4.73%	ALSIKE CLOVER	85%
2.75%	REDTOP	85%

1.73% INERT
TESTED: 10/2012

COARSE KIND: NONE CLAIMED
0.55% CROP
VALLEY GREEN INC CHARLTON, MA

0.01% WEED
508-987-0101



APPENDIX L
CONTRACTOR HEALTH AND SAFETY PLAN (HASP)

**SITE SPECIFIC
HEALTH & SAFETY PLAN**

Former Gorham Manufacturing Facility

Textron, Inc.

Providence, RI

Prepared by:

**E.T. & L. Corp.
Stow, Massachusetts**

E.T.& L. Project No. 12-09

August, 2012

TABLE OF CONTENTS

A.	Introduction	1
B.	Objective	1
C.	Applicability	1
D.	Site Description	1
E.	Emergency Telephone Numbers	2
F.	Directions To The Nearest Local Hospital	3
G.	Hazard Evaluation	3
H.	Site Control And Safety Compliance	4
I.	Safety Protocol	7
J.	Decontamination Protocol	10
K.	Environmental Monitoring	11
L.	Emergency Contingency Plan	11
M.	Signature Acknowledgements	13
N.	Site Safety Meeting/Daily Attendance Record	14

TABLE OF ATTACHMENTS

Attachment A	Map To Nearest Hospital
Attachment B	Textron Health and Safety Plan
Attachment C	MSDS
Attachment D	E.T. & L. Corp Employee Safety and Health Handbook

Project Name: The Parcel C-1 Phase I Cap

Contract Number: No. 1

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

Jay F. Balboni
Jay Balboni
Site Safety and Health Officer

9-19-12
Date

A. INTRODUCTION

This plan has been prepared and will be implemented in accordance with 310 CMR 40.0018. This plan is also intended to comply with the requirements of the Occupational Safety and Health Administration (OSHA) regulations 29 CFR sub-section 1926.65 Hazardous Waste Operations and Emergency Response.

Implementation of the Health and Safety Plan (HASP) will be required by all personnel at the subject site. It is considered essential that safe and healthful working conditions prevail during activities at the site. Since every safety hazard associated with hazardous materials at the site and site work activities cannot be completely foreseen in advance, special precautions to prevent illness and injury will be undertaken.

Since complete elimination of risk is not possible, risk reduction to the lowest feasible level should be practiced. Since no set of rules can be applied uniformly to every situation, it is imperative that those variables particular to the planned remedial activities be established to provide for appropriate safeguards. Applicable local, state and federal occupational health and safety guidelines will be implemented at the site during the exploratory phase of this project. This plan has been prepared for the exclusive use of E.T.& L. Corp. (E.T.& L.)

B. OBJECTIVE

The objectives of this plan are to assign various responsibilities to personnel relative to safety and site security, outline personnel safety and protection requirements, provide mandatory safety operating procedures relative to hazards encountered at the site, establish decontamination procedures and provide for contingencies which may arise during the course of the project.

C. APPLICABILITY

This HASP protocol addresses the safety procedures that will be followed by all personnel including subcontractors involved in construction activities for this project. Personnel entering the site shall be required to read and adhere to this safety plan, as well as E.T. & L. Safety Policies and Employee Safety and Health Handbook. Protocol set forth herein will remain in full force and effect until the on-site coordinator (OSC) determines that this phase of activity is complete.

This plan does not supersede federal, state or local regulations, but is intended to supplement them. In the event of a conflict between this plan and a lawful statute, the more stringent of the two will be enforced. This protocol is in general accordance with, and refers to the terminology used by the EPA Office of Emergency and Remedial Response, in their guidelines entitled "Standard Operating Safety Guides", July 1988. This HASP was also prepared with guidance from a generic plan developed by the U.S. Coast Guard.

D. SITE DESCRIPTION

The site is located at the former Gorham Manufacturing Facility, at 333 Adelaide Avenue, Providence, RI. The Parcel C-1 Phase I Cap, is to cap approximately 3 acres of a wetland buffer area, an upland area, and a former slag area with a combination of soil and soil/geosynthetic material in order to cover soil which exceeds the Rhode Island DEM Residential Direct Exposure Criteria. The scope of work includes, but is not limited to the following activities:

1. Installation of Erosion and Sedimentation Controls
2. Clearing and grubbing
3. Selective Demolition
3. Excavation, hauling and filling to balance the site and establish subgrade
4. Subgrade preparation and fill placement
5. Installation of geosynthetic materials
6. Placement of cap soils
7. Restoration

E. EMERGENCY TELEPHONE NUMBERS

In the event of an emergency, the Site Safety Officer or his/her designee will notify the appropriate authority. The following list of telephone number will be made available to all personnel on site:

ENGINEER:	AMEC Environment & Infrastructure, Inc. 107 Audubon Road, Suite 3012 Wakefield, MA 01880	(781)245-6606
DESIGNER:	AMEC Environment & Infrastructure, Inc. 107 Audubon Road, Suite 3012 Wakefield, MA 01880	(781)245-6606
PROPERTY OWNER:	Textron, Inc. 40 Westminster, St. Providence, RI 03903	(401)421-2800
INJURY:	Rhode Island Hospital 593 Eddy St. Providence, RI 02903	(401) 444-4000
CONTRACTOR:	E.T.& L. Corp.	(978)897-4353
FIRE/EXPLOSION:	Providence Fire Department	911 (401)-274-3348 (business)
AMBULANCE:	Alert Ambulance Service	911 (800)950-6299 (business)
POLICE:	Providence Police Department	911 (401)-272-3121 (business)
POISON:	Regional Center for Poison Control	(800)222-1222

CENTER FOR DISEASE CONTROL, ATLANTA GA: (800)343-2722
(860)509-8000

FEDERAL EPA: EPA 24 Hour Hotline (860)424-3338

SITE SAFETY AND HEALTH OFFICER/ GENERAL SUPERINTENDENT: Jay Balboni (978)-808-9971

ON-SCENE COORDINATOR/ SUPERINTENDENT: Jonathan DiGregorio (978)-270-0252

F. DIRECTIONS TO THE NEAREST LOCAL HOSPITAL

To the extent possible, any person injured at the site will be decontaminated prior to transport. The extent of decontamination will depend upon the type and severity of the injury sustained.

The nearest hospital is **Rhode Island Hospital**.

The directions from the job site to the hospital are as follows:

Exit the project site left and head east on Adelaide Avenue towards Downing St. Adelaide Ave turns right and becomes Downing St. Continue .1 miles and take a sharp left on Reservoir Ave. after .2 miles, turn right to stay on Reservoir Ave. Take the 1st left onto Elmwood Ave. After .3 miles, take 3rd right onto Potters Ave. After 1 mile, turn left onto Eddy St. Rhode Island Hospital will be approximately .4 miles ahead on left. (See Attachment A).

G. HAZARD EVALUATION

The primary contaminants of concern (COCs) at the facility are metals such as arsenic, copper, and lead, chlorinated solvents such as trichloroethene (TCE) and tetrachloroethylene (PCE) and their degradation byproducts, polynuclear aromatic hydrocarbons (PAHs) and petroleum fuel hydrocarbons. PCE, TCE and the degradation product vinyl chloride (VC) are treated as potential human carcinogens by the National Institute for Occupational Safety and Health (NIOSH). Health hazards to workers from COCs are principally related to the inhalation of dust with inorganic COCs such as lead and other metals, exposure to chlorinated solvents and PAHs via inhalation or dermal contact, and exposure to dioxin via inhalation.

Mashapaug Pond water is known to contain dioxins, furans and polychlorinated biphenyls (PCBs) that create a health hazard from ingestion. Some of the pond sediment and soil samples collected indicate that dioxins, furans, and PCBs are present in Site media. Although these contaminants can create a health hazard from ingestion, the health and safety procedures (e.g., washing hands, work zones, etc.) outlined in this HASP will be implemented to reduce or eliminate exposure via this route. Airborne particles onto

which contaminants have been adsorbed could be released from contaminated soil during activities that disturb the material. However, engineering controls (dust suppression) as described in this HASP will be implemented and followed during field activities to reduce or eliminate exposure via this route.

A potential respiratory hazard associated with contaminants in soil exists for invasive activities, particularly those activities that will disturb soils using equipment that could generate dust (e.g., road grading, tree clearing/grubbing and excavation of the slag pile and contaminated soil). This hazard will be mitigated by the use of engineering controls such as water, reduction in vehicle speeds, reduction in truck loading rate and drop height, slowing or stopping dust generating activities and limiting soil handling during unfavorable weather conditions to suppress visible dust and dust that exceeds 0.29 mg/m³ in air. Dermal exposure should be suppressed by use of task-specific PPE. Inhalation of volatile organic compounds (VOCs), especially VC (present in sediment), is possible from impacted soil and sediment and should be monitored to prevent respiratory exposure. E.T & L. will monitor the dust exposure using direct reading instruments such as an Escort LC Sampling Pump. It is not anticipated to have any confined space situations but if one does occur, the area will be sampled for oxygen and LEL using a Honeywell Multipro Gas Detector. The work area will be monitored by AMEC for oxygen and LEL. If the LEL concentrations are greater than 10% work will be stopped to allow the gas to dissipate. The area will then be rechecked to confirm if the levels have dropped. If the levels continue to exceed the action level provisions for ventilation and spark proof/intrinsically safe equipment may be necessary.

The physical hazards associated with this project include the normal construction activity hazards of working around heavy construction equipment, traffic, slips, trips and falls, work on unstable soil surfaces, work around concrete and asphalt, power tool use, heat, and cold stress, as well as muscle strains connected with physical labor and repetitive activities. The E.T.& L. Employee Safety and Health Handbook and company Policy statements address the potential and preventive measures for these hazards.

Physical hazards are associated with clearing and grubbing operations and demolition of concrete structures such as wood chips during cutting activities, abrasions from chainsaws, concrete chips from demolition and high noise levels produced from equipment. Personal Protective equipment including face shields, chaps and hearing protection will be used during these activities.

The Site SSHO shall develop a heat stress and cold stress monitoring program for on-site activities. Schedules for work and rest, will be determined in the field. Physiological monitoring will be performed throughout the length of the job. Personnel shall be trained to recognize the symptoms of heat and cold stress. The SSHO and the OSC shall be responsible for the heat and cold stress monitoring program.

H. SITE CONTROL AND SAFETY COMPLIANCE

a. On-Scene Coordinator (OSC) and Competent Person

OSC and Competent Person for this site is Mr. Jonathan DiGregorio of E.T. & L. who has been 40-Hour Hazardous Worker trained. Also, he has received 10-Hour OSHA Safety Training and has certifications in CPR and First Aid.

Jonathan DiGregorio reports directly to James Murray, P.E., P.L.S., Project Manager, who reports to Garry P. Balboni, P.E., Vice President of E.T & L. Corp. The primary responsibilities of the OSC relative to site safety include the following:

- Alert personnel allowed to enter the site to the potential hazards associated with substances known to exist at the site,
- Oversee site personnel to verify that they are aware of the provisions of this plan and have been instructed in the safety practices defined herein, including emergency procedures,
- Implement the safety monitoring efforts as directed by the Safety Officer,
- Correct any work practices or conditions under his/her control that may result in exposure to hazardous substances or injury to personnel, and
- Oversee all handling, storage, sampling, and transport of contaminated materials. Conduct initial safety orientation on the site including the contents of the HASP and each employee's safety responsibilities.

The OSC may alter this HASP as required by differing site and environmental conditions following consultation with the CIH and site Engineer.

b. Site Safety and Health Officer (SSHO)

SSHO for this site is Mr. Jay Balboni, of E.T. & L. who has been 40-Hour Hazardous Worker trained. Also, he has received 10-Hour OSHA Safety Training and has certifications in CPR and First Aid.

The site safety and health officer shall:

- Be responsible for the development, implementation and oversight of the HASP.
- Monitor compliance of workers relative to pre-established personnel protection levels (i.e.: use of necessary clothing and equipment to ensure the safety of personnel),
- Notify the OSC of discrepancies or violations of the safety plan, and
- Evaluate weather and hazard information, and recommend to the OSC any necessary modifications to work plans and personnel protection levels to maintain personnel safety.
- The SSHO shall perform inspections of the jobsite and the work in progress to ensure compliance with the Safety and Health Program, and other occupational health and safety requirements of the contract. When feasible, deficiencies will be corrected immediately. If the deficiency cannot be corrected immediately, work in the deficient area will cease until it can be corrected.

c. Certified Industrial Hygienist (CIH)

CIH for this site is C. R. Coe, of Environmental Health Inc. The CIH shall:

- Evaluate hazards of the site and controls that will appear in the site safety plan.

d. On-Site Control

Control boundaries will be established for the site to include warning signs indicating hazards and restricting area to authorized personnel only.

e. Training Requirements

All employees will have had mandatory OSHA 10-Hour Safety Training. 40-hour OSHA Hazwoper training is required for this work. Most of E.T.& L.'s personnel involved with site operations will have current training in accordance with OSHA requirements, 29 CFR 1910.120. Personnel will be required to provide the SSHO with certificates of adequate and appropriate training before accessing the site location. Personnel without training certificates will be prohibited from engaging in hazardous waste operations.

On site work will be conducted in Level D Personal Protection. Should the need arise to upgrade to Level C in any area of the jobsite, our supervisors, foremen, operators, and laborers, who work in the upgraded Level C, will be 40-Hour Hazmat trained, as required.

All onsite workers, who will be working in elevated P.P.E. Levels, will be included in their company's medical surveillance and respiratory protection programs, fit tested, and trained in confined space entry, as required.

Prior to commencement of site activities and daily thereafter, site-specific training will be provided by the OSC or SSHO and will include an overview of HASP requirements. Daily safety meetings will cover anticipated tasks for the day and the potential hazards and mitigation and/or controls of those hazards.

On site personnel will be trained to recognize the symptoms of heat and cold stress.

In addition, all workers with a potential for exposure to lead at any level must receive the following training:

1. Lead exposures according to the requirements of the Hazard Communication Standard in Construction (29 CFR 1926.56), including warning signs and labels, Material Safety Data Sheets (MSDSs), and employee information and training.

All workers with a potential exposure to lead at or above the action limit of 0.03 milligrams per cubic meter (mg/m³) (involved in the excavation of the slag material) must receive the following training:

1. The contents of the standard (29 CFR 1926.62/1910.1025) and its appendices.

2. The specific nature of the operations that could result in exposure to lead above the action limits.
3. The purpose of the medical surveillance program in regards to monitoring for lead. Information must include the adverse health effects associated with excessive exposure to lead (especially reproductive effects).
4. The engineering controls (if any) and work practices (e.g., wetting soil to control dust) to be used at the site.
5. Instructions that chelating agents should not be used to remove lead from their bodies except under the direction of a licensed physician. (NOTE: Chelating agents remove metals from the body by binding to the metal; making it soluble so that it can be excreted in the urine. The problem with them is that they are indiscriminate and remove essential metals from the body as well. Chelation is a last resort to be used only when extremely high lead levels are found in the blood.)
6. Inform workers that copies of the standard and its appendices are available to them if interested.
7. The contents of any compliance plan.
8. The employees right of access to records under 29 CFR 1910.1020.

I. SAFETY PROTOCOL

a. Personal Precautions

- Eating, drinking, chewing gum or tobacco, smoking or any other practice that increases the probability of hand-to-mouth transfer and ingestion of materials is prohibited in any contaminated areas.
- Hands and face must be thoroughly washed upon leaving the contaminated area.
- Whenever decontamination procedures for outer garments are needed, the entire body should be thoroughly washed as soon as possible after the protective garment is removed.
- Contact with contaminated or suspected contaminated surfaces should be avoided. Whenever possible, do not walk through puddles, leachate, discolored surfaces, kneel on the ground, lean, sit or place equipment on drums, containers or on the ground.

Medications and alcohol can potentiate the effects from exposure to toxic chemicals. Personnel working on response operations should not take prescribed drugs where the potential for absorption, inhalation or ingestion of toxic substances exists unless specifically approved by a qualified physician. Alcoholic beverages are prohibited during response operations and should be avoided in the off-duty hours.

First Aid equipment shall be available at the following locations:

- | | |
|-----------------------|---------------------------------------|
| • First-aid kit | E.T.&L. Vehicles & Field Office |
| • Emergency eye wash | E.T.&L. Vehicles & Field Office |
| • Emergency telephone | Field Office |
| • Emergency Radio | E.T.&L. Frequency in E.T.&L. Vehicles |

b. Respiratory Protection

At this time, the use of respirators during routine construction activities is not considered warranted. Any activities that generate toxic dust (sawing) or fume (torch cutting) may require the use of respirators. Personnel involved during on-site activities with contaminated soils or with treated timber products shall be included in their company's respiratory protection program when there is a potential for inhalation of dust or fume. Personnel wearing air-purifying respirators on site are required to be medically evaluated, fit tested, and properly trained and experienced in their use.

Respiratory protection equipment is to be properly decontaminated at the end of each workday. Persons who have beards, or other facial hair that will not allow proper fit of respiratory protection, will not be permitted to enter areas requiring such protection.

c. Medical Monitoring Program

Personnel who are or will be exposed to hazardous substances shall be enrolled in a medical monitoring program. The medical testing will be performed by either Fallon Occupational Health Center, 85 Lincoln Street, Framingham, MA 01701; Deaconess Nashoba O.H.C., 200 Groton Road, Ayer, MA 01432; or Marlborough Hospital, 157 Union Street, Marlborough, MA 01752. The Contractor will forward the test results to the AMEC Resident Engineer.

d. Safety Rules

- No personnel will work alone in areas that require protective clothing unless the work will be a short duration and another person has been informed of your location.
- No work will be performed alone on any task that could incapacitate the worker.
- To the extent practicable, tools and equipment in contaminated areas will be spark proof, explosion resistant, and grounded.
- A first-aid kit will be on-site in the field office at all times during operating hours.
- No work will be performed at the site during hours of darkness.
- Access to hazardous areas will be restricted using sawhorses, pedestrian barriers and warning tapes.
- There will be no eating, drinking or smoking in either the Exclusion Zone or the Contamination Reduction Zone.
- Personnel must pass through the Contamination Reduction Zone to enter the Exclusion Zone.

- In the event of an emergency, three long horn blasts on an E.T. & L. vehicle or other available vehicle will be the signal for the personnel to leave the Exclusion Zone.

e. Safety Meetings

A safety meeting will be conducted for site personnel immediately prior to the start of any work in contaminated areas. An attendance sheet will be maintained by the OSC. The safety procedures, evacuation procedures, escape procedures and daily safe operations will be discussed during the meeting. Daily meetings will go over any changes in the site, new contaminants or hazards from the previous day and the controls needed to manage these hazards.

f. Personnel Protection

Level D protection will be required at this site during landfill closure activities. Level D protection includes:

- Coveralls (if required)
- Gloves (chemical resistant if required)
- Safety Boots/Shoes (chemical resistant if required)
- Safety glasses or chemical splash goggles
- Hard Hat
- Ear Plugs (for work near heavy equipment and noise levels exceeding 85 dBA)
- High Visibility Vests
- Face Shields and Chaps while using chainsaws.

If contaminated materials are encountered, and whenever the OSC determines that site conditions warrant an increase in protection, Level C protection shall be made available on-site. Level C protection includes all the personal protection equipment for Level D plus respirators equipped with P-100 cartridges. Cartridges are to be disposed of at the end of each 8-hour shift or when a break-through is suspected.

Two sets of Personnel Protection shall be maintained on site for the exclusive use by the Owner and Engineer.

g. Criteria for Level of Protection

- Working with contaminated soils or sediment is not expected to warrant the full-time use of respirators. However, respirators shall be available on-site should the need arise, due to conditions encountered in the field.

- Gloves and boots are required to prevent skin contact with the on-site contaminated soil, sediment or treated timbers.

h. Work Zones

Work zones will be determined in the field based upon site constraints for the various work areas. The first three work zones described below are not anticipated at this time.

The entire site will be divided into four zones:

1. The Exclusion Zone (EZ) which is known to be or has a potential for becoming contaminated and will be limited to the area of hazardous waste excavation, should it be encountered.
2. The Contamination Reduction Zone (CRZ) shall surround the EZ. This zone is an area not expected to have gross contamination, but may become contaminated by wind dispersion, vehicle operations or other activities. The location of this zone shall take into consideration things such as wind direction, points of access from main roads and site space constraints. The CRZ will have an access corridor provided during lunch time. Work will not occur during lunch time in order to allow access.
3. The Containment Reduction Corridor (CRC) where decontamination of personnel and equipment existing in the EZ will be performed. This zone shall be located within the CRZ.
4. The Clean Zone (CZ) is not contaminated. As work progresses on the site, the OSC may determine that an area previously designated a CZ is no longer classified. This zone will include all those areas outside the CRZ and EZ.

J. DECONTAMINATION PROTOCOL

Personnel and equipment leaving the EZ shall be thoroughly decontaminated. The Safety Officer shall monitor the decontamination procedures. Equipment used for decontamination shall be decontaminated or disposed of properly.

Protective clothing and equipment shall be decontaminated, cleaned, laundered, maintained or replaced as needed to maintain their effectiveness. Impermeable protective clothing, which contacts or is likely to have contacted hazardous substances, shall be decontaminated before being removed.

Personnel whose non-impermeable clothing becomes wetted with hazardous substances shall immediately remove that clothing. That clothing shall be disposed of or decontaminated before it is removed from the work zone.

Decontamination protocol will involve thorough decontamination of all equipment and personnel leaving the site at the designated CRC. The following decontamination procedures will be followed at the site. Changes in these procedures may be made by the OSC to accommodate changing site conditions:

Station 1: Equipment Drop. Deposit all equipment used on site.

- Station 2: Suit Wash. Wash gloves, boots and hard hat with detergent/water solution.
- Station 3: Suit Removal. Remove gloves and hard hat.
- Station 4: Hand and Face Wash. Thoroughly wash hands and face with soap and water. Shower as soon as possible.

K. ENVIRONMENTAL MONITORING

Trench excavations shall be considered confined spaces. The air space in each trench will be monitored for oxygen prior to entry using a Lower Explosive Limit (LEL) meter. In addition, the base of the trench and the side walls shall be screened for volatile organic compounds (VOCs) using a Photo-Ionization Detector (PID). The LEL meter and the PID shall be used to monitor air quality prior to entry and continuously while workers are inside the excavation whenever any excavation is in question.

Acceptable oxygen concentrations can range from 19.5% to 22%. In the case of unknown chemical hazards, the action level for upgrading from Level D protection to Level C (or evacuating if upgrade to Level C is not authorized), will be a steady reading of 5 ppm above background. Readings above 50 ppm as recorded by the PID will require evacuation and reevaluation of the site by the SSHO and CIH. Workers will remain away from the site until the cause of such readings is identified and engineering controls are implemented. Upgrades or downgrades of personal protective levels will be authorized only by the SSHO after discussion with CIH.

L. EMERGENCY CONTINGENCY PLAN

- a. An Emergency Response Plan that meets the requirements of 29 CFR 1910 Section 1910.120 (I) and 29 CFR 1926 Section 1926.65 (I), shall be developed and implemented as a Section of the HASP. This Plan/Section shall be formatted as a stand alone document.
- b. In the event of any emergency associated with closure activities, the Contractor shall, without delay, alert all on-site employees that there is an emergency situation; take action to remove or otherwise minimize the cause of the emergency; alert the Engineer, and institute measures necessary to prevent repetition of the conditions or actions leading to, or resulting in, the emergency. Employees that are required to respond to hazardous emergency situations shall be trained in how to respond to such expected emergencies.
- c. The Contractor shall alert local emergency response personnel and dispatchers of the work in progress.

The OSC shall identify, to the extent possible, hazardous substances or conditions present. Based on the hazardous substances and/or conditions present, the OSC shall implement appropriate emergency operations and assure that the personal protective equipment is appropriate for the hazards to be encountered.

The individual in charge of the HASP shall limit the number of emergency response personnel at the emergency site to those who are actively performing emergency operations. However, operations in hazardous areas shall be performed using the buddy system in groups of two or more.

Back up personnel shall be standing by with equipment ready to provide assistance or rescue. Qualified basic life support personnel, at a minimum, shall be standing by with medical equipment and transportation capability.

The OSC shall coordinate with the local fire authorities, knowledgeable in fire fighting or rescue operations and hazardous substance handling procedures, with specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.

Emergency operations will only be performed to safely remove personnel from the site work area and allow for appropriate emergency response personnel (i.e. fire, rescue) to take over.

When activities are judged by the Site Safety and Health Officer or fire authority to be unsafe and/or to involve an imminent danger condition, the SSHO and the fire authority will suspend or terminate those activities. The SSHO and the fire authority will immediately inform the OSC of any actions taken to correct these hazards during emergency operations. After emergency operations have terminated, the OSC shall implement the appropriate decontamination procedure.

M. SIGNATURE ACKNOWLEDGEMENTS

I have read and understand this Site Safety and Contingency Plan.

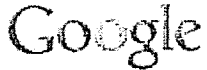
Site Safety and Health Officer _____ Date _____

I have read and understand this Site Safety and Contingency Plan.

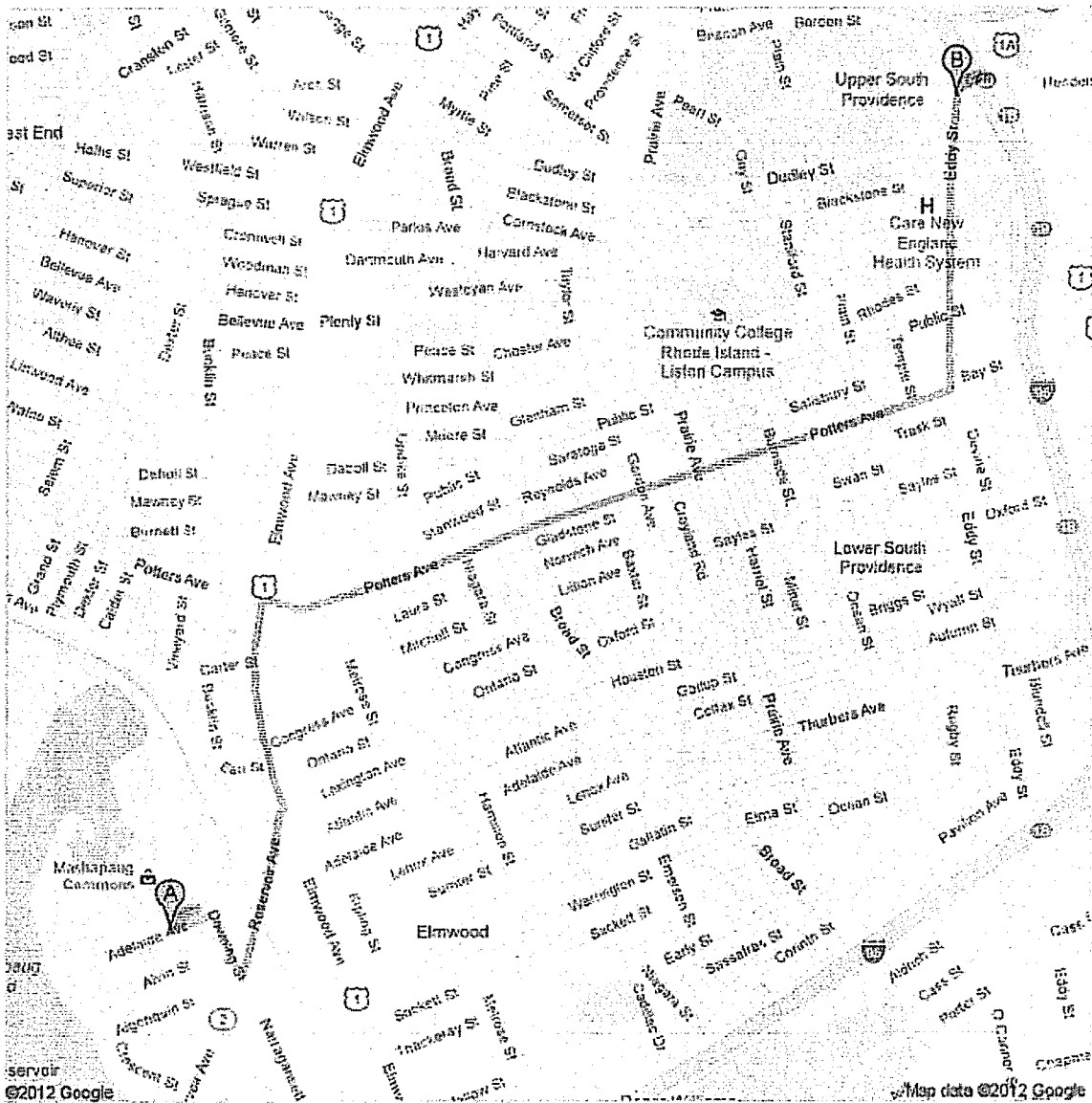
Project Manager _____ Date _____

ATTACHMENT A

Map To Nearest Hospital



Directions to Rhode Island Hospital, 593 Eddy Street, Providence, Rhode Island 02903
2.2 mi – about 9 mins



ATTACHMENT B

Textron Health and Safety Plan

ATTACHMENT C

MSDS

E.T. & L. Corp. will keep on the job site a book containing Material Safety Data Sheets for all materials encountered, or used on this project.

ATTACHMENT D

E.T. & L. Corp Employee Safety and Health Handbook



APPENDIX M
MW-234S WELL INSTALLATION LOG

WELL COMPLETION REPORT

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
 DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 Groundwater Section
 235 Promenade St., Providence, RI 02903

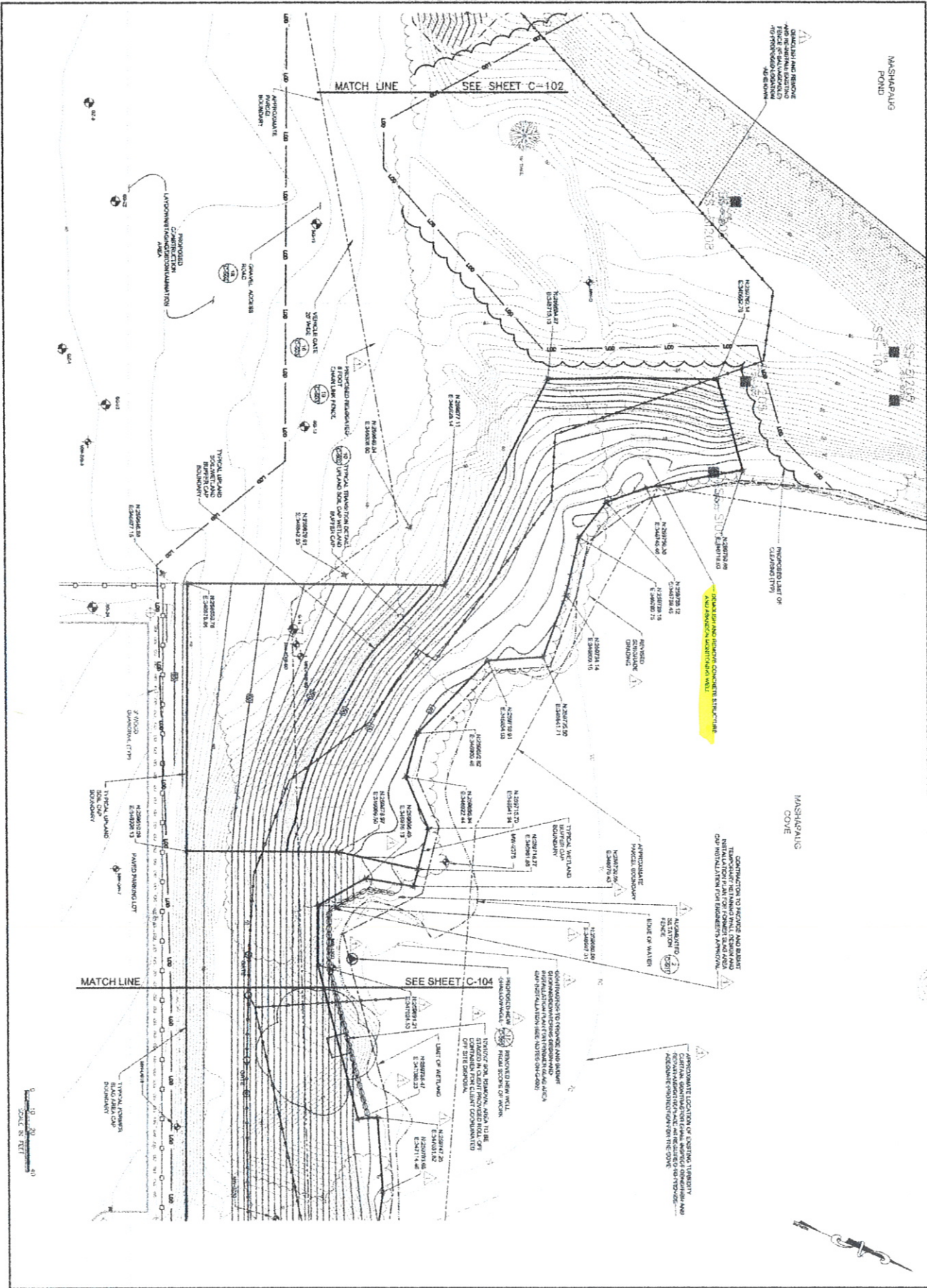


DO NOT FILL IN
 STATE WELL NUMBER

OTHER NUMBER

OWNER	Name TEXTON, INC		Address			
LOCATION OF WELL	(No. & Street) 333 ADELARNA AVE		(Town) PROVIDENCE RI	(Plot #) 510	(Lot #) 32	(Pole #)
DRILLING EQUIPMENT	ROTARY _____ COMPRESSED AIR PERCUSSION _____		CABLE PERCUSSION _____		OTHER _____	
CASING DETAILS	DIAMETER 8	LENGTH UNK	TYPE SSL	NEW _____	USED _____	DEPTH OF COMPLETED WELL IN FT. BELOW LAND SURFACE: 102
	THREADED UNK	WELDED UNK	DRIVE SHOE _____	YES _____	NO _____	GROUTING MATERIAL CEMENT/BWT.
PUMP TEST DATA (5 HR. MIN.)	STATIC WATER LEVEL (FT.) NA		PUMPING LEVEL (FT.) NA		DRAWDOWN (FT.) NA	
	DURATION (HOURS) NA		YIELD (GPM) NA		DEPTH TO BEDROCK NA	
SCREEN DETAILS	MAKE NA	MATERIAL NA	LENGTH NA	DIAMETER NA	SLOT SIZE NA	
HAS WATER BEEN TESTED? _____ WHEN? _____			USE OF WELL _____ BUSINESS ESTABLISHMENT _____ TEST WELL _____			
WHERE? (LAB) _____ LAB # _____			_____ DOMESTIC _____ INDUSTRIAL _____ OTHER (SPECIFY) _____			
ISDS APPROVAL NUMBER _____ LOT SIZE _____			PUBLIC _____ SUPPLY _____ FARM _____			
DEPTH FROM LAND SURFACE			SKETCH EXACT LOCATION OF WELL WITH DISTANCES, TO AT LEAST TWO PERMANENT LANDMARKS, INCLUDING HOUSE (IF PRESENT).			
FEET	TO	FEET	FORMATION DESCRIPTION			
			8" STEEL ABANDONED BY PRESSURE GROUTING TO SURFACE. WELL WAS BY PRESSURE TO SURFACE.			
			INDICATE NORTH SEE SITE PLAN			
			LOCATION OF LOT TO AT LEAST TWO ROADS (INCLUDE DISTANCES AND A POLE #) INDICATE NORTH SEE SITE PLAN			
DATE WELL COMPLETED	DATE OF REPORT	WELL DRILLER (SIGNATURE)		WELL DRILLER (PRINT)		
10/5/2012	2/10/2013	<i>Matthew Bovenze</i>		MATTHEW BOVENZE		
REGISTRATION #	REGISTERED WELL DRILLER (SIGNATURE)			REGISTERED WELL DRILLER (PRINT)		
WD72	<i>Matthew Bovenze</i>			MATTHEW BOVENZE		

WELL DRILLER



<p>AMEC ENVIRONMENT & INFRASTRUCTURE 10000 RIVER ROAD SUITE 200 WASHINGTON, DC 20004 TEL: 202 776 6000 WWW.AMEC.COM</p>	<p>APPROVED</p>	<p>DATE</p>	<p>NO. BY</p>	<p>NO. BY</p>	<p>NO. BY</p>	<p>NO. BY</p>
	<p>REVISION</p>	<p>REVISION</p>	<p>REVISION</p>	<p>REVISION</p>	<p>REVISION</p>	<p>REVISION</p>

TEXTRON

PROJECT: PARCEL C-1 PHASE 1: CAP
 TETRON, INC.
 FORMER GORHAM MANUFACTURING SITE
 333 ADELAIDE AVENUE, PROVIDENCE, RI

TITLE: DEMOLITION, EROSION CONTROL, AND SUBGRADE GRADING PLAN 2

SCALE: AS SHOWN

5 OF 16

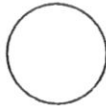


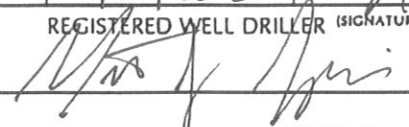
WELL COMPLETION REPORT

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Groundwater Section
235 Promenade St., Providence, RI 02903



DO NOT FILL IN
STATE WELL NUMBER

OTHER NUMBER

OWNER	Name TEXTON, INC.		Address																		
LOCATION OF WELL	(No. & Street) 333 ADELAIDE AVE	(Town) PROVIDENCE RI	(Plot #) 510	(Lot #) 32	(Pole #)																
DRILLING EQUIPMENT	COMPRESSED CABLE ROTARY _____ AIR PERCUSSION _____ PERCUSSION _____ OTHER <input checked="" type="checkbox"/> AUGER																				
CASING DETAILS	DIAMETER 2	LENGTH 7	TYPE Pvc	NEW <input checked="" type="checkbox"/> USED _____	DEPTH OF COMPLETED WELL IN FT. BELOW LAND SURFACE: 17																
	THREADED <input checked="" type="checkbox"/> WELDED _____		DRIVE SHOE YES <input checked="" type="checkbox"/> NO _____	GROUTING MATERIAL CEMENT/BAFF.																	
PUMP TEST DATA (5 HR. MIN.)	STATIC WATER LEVEL (FT.) 9		PUMPING LEVEL (FT.) NA		DRAWDOWN (FT.) NA																
	DURATION (HOURS) NA		YIELD (GPM) NA	DEPTH TO BEDROCK NA																	
SCREEN DETAILS	MAKE Sen 40	MATERIAL Pvc	LENGTH 10	DIAMETER 2	SLOT SIZE 0.010																
HAS WATER BEEN TESTED? _____ WHEN? _____			USE OF WELL _____ BUSINESS ESTABLISHMENT _____ TEST WELL _____																		
WHERE? (LAB) _____ LAB # _____			<input type="checkbox"/> DOMESTIC _____ <input type="checkbox"/> INDUSTRIAL <input checked="" type="checkbox"/> OTHER (SPECIFY) MONITOR <input type="checkbox"/> PUBLIC _____ <input type="checkbox"/> SUPPLY _____ <input type="checkbox"/> FARM _____																		
ISDS APPROVAL NUMBER _____ LOT SIZE _____			SKETCH EXACT LOCATION OF WELL WITH DISTANCES, TO AT LEAST TWO PERMANENT LANDMARKS, INCLUDING HOUSE (IF PRESENT). <div style="text-align: center;">  INDICATE NORTH SEE SITE PLAN </div>																		
DEPTH FROM LAND SURFACE <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>FEET</th> <th>TO</th> <th>FEET</th> <th>FORMATION DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">5</td> <td></td> <td>FINE SAND ; GRAVEL</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">12</td> <td></td> <td>MED - COARSE SAND</td> </tr> <tr> <td style="text-align: center;">12</td> <td style="text-align: center;">17</td> <td></td> <td>MED SAND</td> </tr> </tbody> </table>			FEET	TO	FEET	FORMATION DESCRIPTION	0	5		FINE SAND ; GRAVEL	5	12		MED - COARSE SAND	12	17		MED SAND	LOCATION OF LOT TO AT LEAST TWO ROADS (INCLUDE DISTANCES AND A POLE #) <div style="text-align: center;">  INDICATE NORTH SEE SITE PLAN </div>		
FEET	TO	FEET	FORMATION DESCRIPTION																		
0	5		FINE SAND ; GRAVEL																		
5	12		MED - COARSE SAND																		
12	17		MED SAND																		
DATE WELL COMPLETED	DATE OF REPORT	WELL DRILLER (SIGNATURE)		WELL DRILLER (PRINT)																	
10/5/2012	2/10/2013			MATTHEW BOVENZE																	
REGISTRATION #	REGISTERED WELL DRILLER (SIGNATURE)		REGISTERED WELL DRILLER (PRINT)																		
WD72			MATTHEW BOVENZE																		

WELL DRILLER



APPENDIX N
COMMUNITY OUTREACH NOTICE

Notification To Residents and Stakeholders
Site Remediation
Former Gorham Manufacturing Facility – Park Parcel (Phase I)
333 Adelaide Ave., Providence, Rhode Island
August 16, 2012

In accordance with the Industrial Property Remediation and Reuse Act (Rhode Island General Law 23-19.14, Section 11) and the Rhode Island Department of Environmental Management's (RIDEM's) Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the Remediation Regulations), Textron, Inc. (Textron) is providing notice to area residents and other stakeholders that Site Remediation for the above mentioned property will commence on August 27, 2012.

The work that is about to begin will remediate the existing soil impacts at the above referenced property primarily through excavation and encapsulation of any soil exceeding a residential direct exposure criteria within the Park Parcel Phase I area. General project activities will include: 1) Installation of erosion and sediment control measures; 2) Tree clearing and other vegetation removal; 3) Excavation and site grading activities; 4) Installation of capping materials (cap materials to be determined based on location on the site); and 5) Revegetation of disturbed areas. Dust monitoring activities will occur throughout the project and results will be posted on a weekly basis on the project website identified below. All activities will be performed consistent with the Remedial Action Workplan which was reviewed and approved by the Rhode Island Department of Environmental Management.

The activity that is about to begin represents the first of three phases of planned remediation activities for the Park Parcel with Phases II and III to address the impacted Cove soils (projected to be completed in 2013) and capping of the remaining impacted soils upland of the Cove (projected to be completed in 2014), respectively.

The remediation will prevent direct contact with impacted soils through extensive capping with clean imported soil and geosynthetic materials and implementation of an institutional control in the form of an Environmental Land Usage Restriction recorded on the property deed, as appropriate. The Environmental Land Usage Restriction will ensure that future activities that may occur on the property will be done so in a manner that does not result in any unsafe conditions. Currently, the City of Providence has proposed a recreational use for the Property once all phases of the remediation are completed.

Construction is anticipated to commence on August 27, 2012 with completion anticipated for December 25, 2012. The public may review RIDEM records pertaining to this property along with historical site information, on the RIDEM project website:

<http://www.dem.ri.gov/programs/benviron/waste/gorham.htm>

Should you require additional technical information on the project please contact:

Gregory Simpson
Textron Inc.

40 Westminster Street, Providence, RI 02903
(401) 457-2635

David Heislein

AMEC Environment & Infrastructure Inc.

2 Robbins Road Westford, MA 01886
(978) 692-6060

Should you require additional regulatory information on the project please contact:

Joseph T. Martella II, Senior Engineer
R.I. Department of Environmental Management
Office of Waste Management
235 Promenade Street
Providence, RI 02908-5767

Arrangements to review RIDEM records may be made by calling (401) 222-2797, ext. 7109.

Notificación a los Residentes y Partes Interesadas
Remediación de Sitios
Antigua Instalación de la Fábrica Gorham – Parcela Parque (Fase I)
333 Adelaide Ave., Providence, Rhode Island
16 de Agosto de 2012

De acuerdo con la Ley de Remediación y Reutilización de Propiedad Industrial (Ley General de Rhode Island 23-19.14, Sección 11) y las Normas y Reglamentos para la Investigación y Rehabilitación de fugas de materiales peligrosos (Reglamento de Remediación) del Departamento de Administración del Medio Ambiente de Rhode Island (RIDEM), Textron, Inc. (Textron) está notificando a los residentes locales y demás partes interesadas que la remediación de la citada propiedad se iniciará el 27 de Agosto del 2012.

El trabajo que está por iniciar remediará los suelos impactados existentes en la propiedad. Primordialmente a través de la excavación y el encapsulamiento del suelo que exceda el criterio residencial de exposición directa en el área de Fase I de la Parcela Parque. Las actividades generales del proyecto incluyen lo siguiente:

- 1) Instalación de las medidas de control de la sedimentación y la erosión,
- 2) Remoción de árboles y eliminación de vegetación;
- 3) Excavación y actividades de clasificación del sitio;
- 4) Colocación de materiales para recubrimiento
(el tipo de material se determinará basado en la ubicación de la instalación en el sitio)
- 5) El restablecimiento de la vegetación en las zonas afectadas.

A lo largo del proyecto, se llevará a cabo el monitoreo de partículas en el aire. Los resultados se publicarán semanalmente en la página web del proyecto indicada abajo. Las actividades se llevarán a cabo de acuerdo con el Plan de Trabajo de Acciones Correctivas. Este fue revisado y aprobado por el Departamento de Gestión Ambiental de Rhode Island.

El trabajo por comenzar, representa la primera de tres fases incluidas en las actividades de rehabilitación previstas para la Parcela Parque. Las fases II y III estarán dirigidas a la atención de los suelos impactados del sitio "Cove" (proyectadas a completarse en el año 2013) y la nivelación del resto de los suelos afectados en la parte alta del sitio "Cove" (proyectada a completarse en el año 2014), respectivamente.

La remediación impedirá el contacto directo con los suelos afectados, a través de un recubrimiento completo con tierra limpia importada y materiales geo-sintéticos. También se contempla la implementación de un control institucional a través de una Restricción Ambiental del Uso de la Tierra, registrada en la escritura de la propiedad, según corresponda. La Restricción Ambiental del Uso de la Tierra asegurará que futuras actividades llevadas a cabo en la propiedad sean hechas evitando condiciones inseguras. Por el momento la ciudad de Providence ha propuesto clasificar a la propiedad para uso recreativo, una vez que todas las fases de rehabilitación se hayan completado.

Se estima que la construcción comenzará el 27 de Agosto del 2012. Su culminación está prevista para el 25 de Diciembre del 2012. El público puede revisar los registros de RIDEM pertinentes a esta propiedad junto con la información histórica del sitio en la página web del proyecto RIDEM:

<http://www.dem.ri.gov/programs/benviron/waste/gorham.htm>

Si necesita más información técnica acerca del proyecto, por favor póngase en contacto con:

Gregory Simpson
Textron Inc.
40 Westminster Street, Providence, RI 02903
(401) 457-2635

David Heislein
AMEC Environment & Infrastructure Inc.
2 Robbins Road Westford, MA 01886
(978) 692-6060

Si necesita más información de normativas referentes al proyecto comuníquese con:

Joseph T. Martella II, Senior Engineer
R.I. Departamento de Gestión Ambiental
Oficina de Gestión de Residuos
235 Promenade Street
Providence, RI 02908-5767

La programación de citas para ver los registros RIDEM puede hacerse llamando al (401) 222-2797, ext. 7109.



APPENDIX O
TRANSPORTATION AND DISPOSAL RECORDS

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RI0001198015	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 004003788 FLE				
5. Generator's Name and Mailing Address Textron 40 Westminster Street Providence, RI 02903 Generator's Phone: (401) 487-2025 ATTN: Greg Gunderson				Generator's Site Address (if different than mailing address) 333 Adelaide Avenue Providence, RI 02903					
6. Transporter 1 Company Name Clean Harbor Environmental Services Inc.					U.S. EPA ID Number MA0039322250				
7. Transporter 2 Company Name					U.S. EPA ID Number				
8. Designated Facility Name and Site Address Clean Harbor Canada Inc 4090 Teller Road RR#1 Corunna ON N0N 1G0 Facility's Phone: (519) 904 1021					U.S. EPA ID Number MI000035204				
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
	x	1. UN3077, WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S., (CHROMIUM, LEAD), P. PG III		001 CM		13,500	K	0007	0008
		2.							
		3.							
		4.							
14. Special Handling Instructions and Additional Information L.CHS804738 ER03#171 Container # 4117 25431									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offeror's Printed/Typed Name Agent for Textron Jerry Coutelet Field					Signature [Signature]			Month Day Year 03 11 12	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name Jerry Coutelet Field					Signature [Signature]			Month Day Year 03 11 12	
Transporter 2 Printed/Typed Name					Signature			Month Day Year	
18. Discrepancy									
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
18b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number									
18c. Signature of Alternate Facility (or Generator) Month Day Year									
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. H141		2.		3.		4.			
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name					Signature			Month Day Year	

RECEIVED
 APR 10 2013
 By _____

Clean Harbor has the appropriate permits for and will accept the waste the generator is shipping.

APPENDIX P
DRAFT ENVIRONMENTAL LAND USE RESTRICTION (ELUR)
AND
SOIL MANAGEMENT PLAN (SMP)
(Draft under review by RIDEM)

ENVIRONMENTAL LAND USAGE RESTRICTION

This Declaration of Environmental Land Usage Restriction (ELUR) is made this day of _____, 2011, by (“the Grantor”).

WITNESSETH:

WHEREAS, Grantor is the owner in fee simple of certain real property (the “Property”) known as *425 Adelaide Avenue located in the City of Providence*, designated as Phase I of Parcel C-1, Plat 51 on the tax map of the *City of Providence*, more particularly described on Exhibit A (Legal Description of Property pending completion of remedial activities and as-built plans) [AMEC to prepare based on stamped City Survey Plan with bearing & distance] which is attached hereto and made a part hereof; and

WHEREAS, the Grantor and the Department have determined that the Environmental Land Use Restriction set forth below is consistent with regulations adopted by the Department of Environmental Management (“the Department”) pursuant to Section 23-19.1-14 of the Rhode Island General Laws and that this restriction shall be a Conservation Restriction pursuant to R.I.G.L. § 34-39-1 et seq. and shall not be subject to the 30 year limitation provided in R.I.G.L. § 34-4-21; and

WHEREAS, the Grantor believes that this environmental land use restriction will effectively protect public health and the environment from hazardous substances; and

WHEREAS, the Department’s written approval of this environmental land use restriction is contained in the document entitled: *Remedial Decision Letter dated December 12, 2011, a copy which is attached hereto as Exhibit B* and issued pursuant to the Remediation Regulations; and

WHEREAS, the Property [or portion thereof identified in the Class I survey which is attached hereto as *Exhibit C* and is made a part thereof] has been determined to be a Contaminated-Site and contains hazardous substances; and

WHEREAS, to prevent exposure to or migration of hazardous substances and to abate hazards to human health and/or the environment, and in accordance with the *Remedial Decision Letter*, the Grantor desires to impose certain restrictions upon the use, occupancy, and activities of and at the Contaminated-Site; and

WHEREAS, Grantor intends that such restrictions shall run with the land and be binding upon and enforceable against Grantor and Grantor’s successors and assigns.

NOW, THEREFORE, Grantor agrees as follows:

- A. **Purpose:** In accordance with the *Remedial Decision Letter*, the purpose of this environmental land use restriction is to assure:
 - 1. *That fill material and soil containing hazardous substances on the Property remains in a controlled or covered and isolated condition.*



2. *That the area of soils designated as Phase I of Parcel C-1 on Exhibit C be covered and isolated such that future conditions will prevent direct contact of the fill and soil by visitors to, and workers at the site, and will prevent runoff of contaminated fill or soil particles by stormwater.*
3. *That groundwater beneath Phase I of Parcel C-1 not be used for potable or non-potable purposes.*
4. *That water shall not be discharged or allowed to infiltrate through fill or soil containing hazardous substances in the ENVIRONMENTAL LAND USE RESTRICTION Phase I of Parcel C-1 indicated in Exhibit C, other than by natural precipitation and infiltration or by routine irrigation and maintenance of landscaped areas.*
5. *That there is adequate vegetation to prevent erosion.*
6. *That the Property remains used for recreational activities, and that building structures for residential, commercial, or institutional uses be prohibited.*

B. **Restrictions Applicable to the Contaminated-Site:** In furtherance of the purposes of this environmental land use restriction, Grantor shall assure that use, occupancy, and activity of and at the Property are restricted as follows:

1. *Excavation through, or alteration of, the, soil cover and liner (Area 1), on the Property which would expose or disturb the underlying soil or fill is restricted, unless such excavation or alteration is performed with appropriate measures to protect the health of workers, site visitors, and the environment, and with notification to the Department. The Soil Management Plan, attached hereto as Exhibit D, contains the measures which shall be employed to protect humans and the environment in the event that utilities need to be repaired or other activities occur which shall cause excavation through or alteration of the liner, soil cover and landscaped areas. The Soil Management Plan may be modified with the approval of the Department. Grantees shall be permitted to perform routine maintenance of the soil cover and landscaping without employing the Soil Management Plan.*
 2. *Use of groundwater from the Property for potable, non-potable, fire protection, irrigation, or any other purpose is prohibited.*
 3. *Grantee shall not construct a pond, dry well, leaching field, recharge gallery, or other structure intended to cause water to infiltrate through fill or contaminated soil unless such a design is conducted by a competent environmental professional and a registered Professional Engineer (P.E.) and such design is approved by the Department.*
 4. *Building structures for residential, commercial, or institutional uses shall be prohibited.*
 5. *The Property shall be posted to prevent digging or any other intrusive activity.*
 6. *Access shall be provided to allow sampling of the compliance monitoring wells, or other actions identified in the Remedial Action Work Plan (RAWP) (including environmental investigation and remediation). Further, the Grantor shall be required to prevent damage to wells, and if such damage does occur, the Grantor shall repair or replace in a timely manner the damaged well(s) as necessary.*
-

7. *The owner of the Property is obligated to maintain and enforce the provisions of this ENVIRONMENTAL LAND USE RESTRICTION including but not limited to: maintenance of the liner and soil cover in Area 1, and that building structures for residential, commercial, or institutional uses are prohibited.*

C. **No action shall be taken, allowed, suffered, or omitted if such action or omission is reasonably likely to:**

1. *Result in the disturbance of the Phase I of Parcel C-1 liner or soil cover which would expose the underlying fill or contaminated soils, unless such activities are performed under the measures prescribed by the Soil Management Plan or with the Department's approval.*
2. *Cause the discharge or infiltration of water (other than by natural precipitation or for routine irrigation of the landscaped areas) through the fill or contaminated soil on the property without approval of the Department. Stormwater retention basins present on the property which have been constructed in areas not underlain by fill or contaminated soil shall not be altered without the approval of the Department.*
3. *Since soil in certain areas has been removed or is not contaminated, temporary disturbance of soil is allowed, and compliance with the Soil Management Plan is not required, when encountering soil for simple maintenance from ground surface to a depth of two feet. The disturbed area is to be returned to a similar condition as existed prior to the temporary disturbance.*

D. **Inspection:** It shall be the obligation of the Grantor, or any future holder of any interest in the **Property**, to provide for annual inspections of the **Property** or compliance with the ENVIRONMENTAL LAND USE RESTRICTION in accordance with Department requirements.

A qualified environmental professional on the behalf of the Grantor or future holder of any interest in the **Property** will evaluate the compliance status of the **Property** on an annual basis. Upon completion of the evaluation, the environmental professional will prepare and simultaneously submit to the Department and to the Grantor or future holder of any interest in the **Property** an evaluation report detailing the findings of the inspection, and noting any compliance violations at the **Property**. If the **Property** is determined to be out of compliance with the terms of the ENVIRONMENTAL LAND USE RESTRICTION, the Grantor or future holder of any interest in the **Property** shall submit a corrective action plan in writing to the Department within ten (10) days of receipt of the evaluation report, indicating the plans to bring the **Property** into compliance with the ENVIRONMENTAL LAND USE RESTRICTION, including, at a minimum, a schedule for implementation of the plan.

E. **Release of Restriction; Alterations of Subject Area:** Grantor shall not make, or allow or suffer to be made, any alteration of any kind in, to, or about any portion of any of the Contaminated Site inconsistent with this Environmental Land Use Restriction unless the Grantor has first received the Department's written approval of such alteration. If the Department determines that the proposed alteration is significant it may require the amendment of this restriction. Insignificant alterations will be approved by the Department

via a letter from the Department. The Department shall not approve any such alteration and shall not release the Property from the provisions of this Environmental Land Use Restriction unless the Grantor demonstrates to the Department's satisfaction that Grantor has managed the Property in accordance with the Remediation Regulations.

- F. **Notice of Lessees and Other Holders of Interests in the Property:** Grantor, or any future holder of any interest in the Property, shall cause any lease, grant, or other transfer of any interest in the Property to include a provision expressly requiring the lessee, grantee, or transferee to comply with this Environmental Land Use Restriction. The failure to include such provision shall not affect the validity or applicability to the Property of this Environmental Land Use Restriction.
 - G. **Severability and Termination:** If any court of competent jurisdiction determines that any provision of this Environmental Land Usage Restriction is invalid or unenforceable, the Grantor shall notify the Department in writing within 14 days of such determination.
 - H. **Binding Effect:** All of the terms, covenants and conditions of this Environmental Land Use Restriction shall run with the land and shall be binding on the Grantor, the Grantor's successors and assigns, and each owner and any other party entitled to possession or use of the Property during such period of ownership or possession.
 - I. **Non-Compliance:** In the event that the terms of this Restriction are violated by the Grantor or any future holder of any interest in the Property, this Restriction and all other approvals and agreements relating to the contaminated site shall be null and void.
 - J. **Terms Used Herein:** The definitions of terms used herein shall be the same as the definitions contained in Section 3 (DEFINITIONS) of the Remediation Regulations.
-

1. INTRODUCTION

This Soil Management Plan (SMP) has been prepared to describe the procedures that are necessary to safely manage contaminated soil at Phase I of Parcel C-1 located at 425 Adelaide Avenue in Providence, Rhode Island (Site). The Site consists of approximately 8 acres of land that was formerly occupied by the Gorham Manufacturing facility at 333 Adelaide Avenue. The Gorham Manufacturing Company engaged in the manufacture of silverware, both sterling and plated, and bronze castings from approximately 1890 to 1986. Operations included casting, rolling, polishing, lacquering, forging, plating, annealing, soldering, degreasing, machining and melting. Vapor degreasers reportedly used tetrachloroethylene (PCE), trichloroethylene (TCE) and trichloroethane (TCA) during various periods of operations.

Parcel C-1 refers to the proposed Park Parcel area to be used for passive recreation along the shoreline of Mashapaug Cove and Mashapaug Pond.

Applicability and Purpose

This SMP is a component of the Environmental Land Usage Restrictions (ELUR) for Phase I of Parcel C-1. The SMP is intended to address management of soils that may be excavated in the future on Phase I of Parcel C-1.

Soil Contaminants

Historic spills and releases of oil and hazardous materials to specific areas of soil and groundwater have occurred at the Site from prior Site uses. Remediation activities completed on this Site has isolated contaminants that exceed the applicable RIDEM levels. In general, contaminants that remain in Site soils are as follows:

1. Lead, arsenic, PAHs and dioxin at concentrations that exceed residential and commercial Rhode Island direct exposure criteria (RIDEDEC) at various locations.

The requirements set forth in this SMP are intended for the handling, stockpiling, and tracking of soil material to be managed as part of potential future activities on Phase I of Parcel C-1. Anticipated site activities (other than excavation for remediation) that will require soil management include: excavation for utility installation and repair; grading; foundation excavations; paving; landscaping; and maintenance of the Parcel C-1 cap.

2. RESPONSIBILITIES

An environmental inspector shall be onsite during soil management activities from ground surface to a depth of two feet.

The responsibility of this individual will be to document the soil management actions, perform perimeter and breathing-zone air monitoring (primarily for dust and organics), maintain the operating log, and summarize site activities into the required progress reports.

Perimeter and breathing zone monitoring shall be required during soil management activities. The monitoring will be performed using a photo-ionization detector (PID) to measure the concentration of volatile organic compounds (VOCs) to ensure the protection of the health of the

workers at the Site. Standard action levels have been established and are indicated in Paragraph 5.2.2 below.

3. SOIL CHARACTERIZATION

Historic soil sampling on the Site has detected concentrations of various contaminants at levels exceeding the applicable RIDEDEC or UCLs. If off-site disposal of soil is required in the future, soil samples are required to be collected and analyzed by a laboratory for waste characterization in accordance with the requirements of the designated disposal facility.

4. POLYETHYLENE BARRIER

A polyethylene barrier shall be used to isolate stockpiles (if necessary) from the underlying soils and pavement. The polyethylene shall be a minimum of 6-mil (0.006 inches) thick. At least two layers of polyethylene shall be used to protect the ground surface. At least one layer of 6-mil polyethylene will be used to cover stockpiles at all times; except when modifying stockpiles.

5. EXCAVATION

The excavation or moving of impacted soils will require that dust suppression measures be available, and perimeter and breathing-zone monitoring must be performed.

5.1 STOCKPILE CRITERIA

Stockpiles of soil exceeding the applicable RIDEDEC shall be placed on polyethylene sheeting, shall be covered with polyethylene sheeting and the sheeting anchored to prevent blowing dust.

5.2 AIR MONITORING

Perimeter and breathing-zone monitoring shall be performed during any earthmoving activities involving impacted soil. Monitoring will be primarily focused on dust monitoring to address respirable lead concerns.

5.2.1 Breathing-Zone Monitoring

A potential respiratory hazard associated with prolonged exposure to contaminants in soil exists for invasive activities, particularly those activities that will disturb soils using equipment that could generate dust (e.g., road grading, tree clearing/grubbing and excavation of the slag pile and contaminated soil). This hazard will be mitigated by the use of engineering controls such as water to suppress visible dust and dust that exceeds 0.29 mg/m^3 in air.

Monitoring of the ambient air in the breathing zone with a dust meter (e.g., mini-RAM) and PID will be conducted during work task activities.

Breathing-zone action levels were developed considering site-specific contaminant levels in soil. Monitoring of the breathing zone shall be conducted using a respirable dust monitor (for measuring lead levels in dust).

Although considered to be unlikely based on prior investigation activities, inhalation of volatile organic compounds (VOCs) is possible from impacted soil and should be monitored to prevent

APPENDIX P - SOIL MANAGEMENT PLAN

respiratory exposure. Table 1 lists the potential contaminants of concern and the threshold limits to be used during the construction monitoring.

**Table 1
Contaminants of Concern**

Compound	Maximum in Soils (Site wide Historic Results) ¹	Maximum in Park Parcel Soil ^{2,3}	Maximum in Pond Sediment ³	Maximum in Groundwater ¹	Threshold Limit Values
Arsenic	124	67.8	244	NA	0.01 mg/m ³
Cadmium	14	14.5	7.11	NA	0.005 mg/m ³
Chromium	1,540	1,330	640	NA	0.005 mg/m ³ (TLV) Cr ⁺⁶
Copper	26,300	8,760	2,670	NA	1 mg/m ³
Dioxins ⁴	-	3x10 ⁻⁵	3x10 ⁻⁵	-	2 ng/m ³ (200 pg/m ³) ⁶
Furans ⁵					
Lead	22,600	5,580	1120	NA	0.05 mg/m ³
Nickel	5,380	390	853	NA	1 mg/m ³
Silver	472	385	227	NA	0.01 mg/m ³
Zinc	6,850	4,760	1,940	NA	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Cyanide	4	0.5	ND	NA	5 mg/m ³
1,2-dichloroethylene	<.050	ND	175	0.94	200 ppm
1,1-dichloroethane	NA	ND	7.92	<0.125	100 ppm
ethylbenzene	NA	ND	ND	NA	100 ppm
tetrachloroethene (PCE)	7.6	1.1	27	50	25 ppm
1,1,1-trichloroethane (TCA)	0.041	ND	6.65	3	350 ppm
Trichloroethene	0.195	6.1	88	7.2	10 ppm
Toluene	<0.025	ND	1.92	NA	20 ppm
vinyl chloride (VC)	NA	ND	24.8	<0.025	1 ppm
xylenes	NA	ND	ND	NA	100 ppm
Benzo(a)pyrene	25.3	48.4	7.87	NA	0.2 mg/m ³ (coal tar pitch vol)
Benzo(a)anthracene	25.3	50	15.1	NA	0.2 mg/m ³ (coal tar pitch vol)

APPENDIX P - SOIL MANAGEMENT PLAN

Compound	Maximum in Soils (Site wide Historic Results) ¹	Maximum in Park Parcel Soil ^{2,3}	Maximum in Pond Sediment ³	Maximum in Groundwater ¹	Threshold Limit Values
Dibenzo(a,h)anthracene	4.8	10.5	1.45	NA	0.2 mg/m ³ (coal tar pitch vol)
Benzo(b)fluoranthene	21.3	45	14.8	NA	0.2 mg/m ³ (coal tar pitch vol)
Indeno(1,2,3-cd)pyrene	11.7	27.9	2.47	NA	0.2 mg/m ³ (coal tar pitch vol)
Total Petroleum Hydrocarbons	NA	73,800	2600	NA	NA

¹ From Table 4.2, AMEC Health and Safety Plan 2001

² Database Query, April 2004

³ Supplemental Site Investigation Report, Fuss & O'Neill April 2006

⁴ Dioxin is a collective term for more than 200 compounds from the group of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs), which belong to the chlorinated hydrocarbons (CHCs). Synonyms for dioxin include TCDD, TCDBD, dioxine and 2, 3, 7, 8-TCDD (the most toxic version). The maximum concentration is for 2,3,7,8-TCDD.

⁵ Furan is the parent compound for a broad class of structurally related compounds.

⁶ 1988 proposed exposure limit for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

NE = Not Established

This real time monitoring of air quality will be summarized on a log sheet for each day and at the end of each week they will be scanned and emailed to RIDEM for uploading to the project website. Data from the fixed monitoring points will also be provided to RIDEM and uploaded to the website.

Continuous visual monitoring of dust (particulate) levels will also be conducted and recorded in the Site field logbook. If visible dust conditions are sustained for more than one minute within the work zone, dust suppression methods (i.e., water spray) will be implemented to reduce airborne dust levels. Dust suppression will be performed throughout the site activities as needed and will include spraying of fine mist of water over exposed soils to suppress dust as needed. A portable water tank containing municipal water or a nearby fire hydrant if approved by the City of Providence will be used as the water supply for dust suppression activities. If heavy precipitation (rain or snow) is adequate to suppress dust, additional water spray will not be applied.

Construction control measures are included in Paragraph 5.2.3.

5.2.2 Perimeter Monitoring

Ambient air action levels shall be measured at the Parcel C-1 property line and are developed to provide a means whereby construction activities may be altered to minimize impact to the public.

Dust monitoring will be conducted at the work area perimeter during activities that have the potential to disturb soil (grading, excavation, trenching, drilling) using hand held real-time continuous air monitoring instruments. Work area perimeter dust monitoring will also be performed using the MIE DR4000 monitors or equivalent placed in cases weatherproof cases. These instruments measure aerosol dust and will be set to automatically store data (data logging)

for subsequent retrieval. One perimeter dust monitor will be placed on each of the four points outside and within 30 feet of the soil capping activities (North, South, East, and West) to confirm that areas outside of the work zone are not adversely impacted by the capping activities. Real-time dust monitoring will continue throughout the site activities, unless a significant precipitation event occurs, at which time dust monitoring may be suspended per manufacturer specifications and standard industrial hygiene practices.

The sustained respirable dust meter action level is 0.29 mg/m^3 . This action level is protective of worker health under the OSHA lead standard and given the known levels of contaminants in Site soils. If this level is exceeded for more than one minute, the contractor will use water to suppress dust as an engineering control. If this action level is sustained, the contractor will halt work and require upgrade to Level C PPE.

A PID will be used to monitor the breathing zone at construction activities and perimeter air quality. The threshold values that will trigger alteration or temporary stopping of site activities are listed in Table 1. Due to the detection of methane in the northwest corner of Parcel C a combustible gas instrument will also be used to monitor the work area lower explosive limit (LEL) that is calibrated to methane. LEL concentrations $>10\%$ will require that work be stopped until the gas has dissipated.

5.2.3 Construction Control Measures

If sustained readings above action levels are detected for more than one minute, these results will be reported to the Project Manager and the Contractor Site Supervisor and construction measures will be implemented to reduce these readings. Construction control measures could include, water sprays for dust control, and/or cessation of construction activities. Ambient air background levels will be established in an up wind location at the beginning of each day and subtracted from the results of the fence line monitoring. The frequency of the property line monitoring shall be established on a daily basis by the Site H&S Officer and may be increased or decreased on an as-needed basis depending on the nature of the construction activities and environmental conditions. All data collected shall be recorded on a form specifically established for this use, and kept in the operating log.

Perimeter monitoring could also include the use of “high volume” sampling pumps to collect continuous dust data. These sampling pumps would operate during the entire construction work day, particularly during windy conditions or when a large quantity of soil is being moved at the Site.

5.3 MATERIAL TRACKING

The environmental inspector shall keep accurate records of the volumes of soil moved about the Site, the initial location of those volumes of soil, and the final location of the volumes of soil.

6. SUBMITTALS

Activities to be conducted on Parcel C-1 must follow the procedures listed below:

- i) This SMP serves to supplement, and will be initiated by, the RIDEM notification requirement established by the Environmental Land Use Restriction (ELUR) for the property.

APPENDIX P - SOIL MANAGEMENT PLAN

- ii) As part of the RIDEM notification, the site owner will provide a brief written description of the anticipated site activity involving soil excavation. The description will include an estimate of the volume of soil to be excavated, the duration of the construction project, and the proposed location of the temporary storage of the soil.
- iii) During site work, the appropriate precautions will be taken to restrict unauthorized access to the property.
- iv) The excavated soils will either be re-entered to their original location (returned to the excavation) the same day of the removal and will be placed below the applicable engineered control cap, or will be properly stored in a secured location of the site.
- v) To the extent it is necessary during excavation activities, the clean fill material of the engineered cap will be segregated from the regulated soil beneath the cap and stored separately and securely on and under polyethylene sheeting. Best management practices will be utilized to minimize and control generation of dust during excavation, movement or storage of regulated soils. Any regulated soil being re-entered will be placed below a RIDEM approved engineered control cap.
- vi) If the soil cannot be returned to the excavation the same day, then the segregated soils will either be stockpiled separately on polyethylene sheeting, or stored separately in roll-off type containers. In either case, the segregated material in storage will be covered with secured polyethylene sheeting at the end of each workday. Stockpiled materials will be maintained with appropriate controls and best management practices to limit the loss of the cover and protect against stormwater or wind erosion.
- vii) Any portion of the geosynthetic liner (geomembrane, geocomposite, geotextile, etc.) that is damaged during excavation, maintenance and/or related activities will either be repaired or replaced in a timely manner with a section of new geosynthetic liner in accordance with the approved engineered control specifications.
- viii) If the regulated soil cannot be returned to the original location, then a qualified environmental professional will collect samples of the excavated soils (either during excavation or from stockpiles) for laboratory testing. In the event that regulated soils are generated for which the only effective method of management is off-site disposal, then the testing program will also address the data requirements of the anticipated disposal facility.
- ix) In the event that certain soils on regulated portions of the site were not previously characterized, these soils are presumed to be regulated until such time that it is demonstrated to the Department, through sampling and laboratory analysis that they are not regulated.
- i) Excavated soils will be staged and temporarily stored in a designated area of the property. Within reason, the storage location will be selected to limit the unauthorized access to the materials (i.e., away from public roadways/walkways). No regulated soil will be stockpiled on-site for greater than 60 days without prior Department approval.
- ii) In the event that stockpiled soils pose a risk or threat of leaching hazardous materials, a proper leak-proof container (i.e., drum or lined roll-off) or secondary containment will be utilized.

APPENDIX P - SOIL MANAGEMENT PLAN

- iii) Soils excavated from the site may not be re-used as fill on residential property.
- xiii) Site soils, which are to be disposed of off-site, must be done so at a licensed facility in accordance with all local, state, and federal laws. Copies of the material shipping records associated with the disposal of the material shall be maintained by the site owner and included in the annual inspection report for the site.
- xiv) Best soil management practices should be employed at all times and regulated soils should be segregated into separate piles (or cells or containers) as appropriate based upon the results of analytical testing, when multiple reuse options are planned (i.e., reuse on-site or disposal at a Department approved licensed facility).
- xv) All non-disposable equipment used during the soil disturbance activities will be properly decontaminated as appropriate prior to removal from the site. All disposable equipment used during the soil disturbance activities will be properly containerized and disposed of following completion of the work. All vehicles utilized during the work shall be properly decontaminated as appropriate prior to leaving the site.
- xvi) At the completion of site work, all exposed soils are required to be recapped with Department approved engineered controls consistent or better than the site surface conditions prior to the work that took place. These measures must also be consistent with the Department approved ELUR recorded on the property.
- xvii) In accordance with Section A iii of the Parcel C-1 ELUR, no soil at the property is to be disturbed in any manner without prior written permission of the Department's Office of Waste Management, except for minor inspections, maintenance, and landscaping activities that do not disturb the contaminated soil at the Site. As part of the notification process, the site owner shall provide a brief written description of the anticipated site activity involving soil excavation. The notification should be submitted to the Department no later than 60 days prior to the proposed initiation of the start of site activities. The description shall include an estimate of the volume of soil to be excavated, a list of the known and anticipated contaminants of concern, a site figure clearly identifying the proposed areas to be excavated/disturbed, the duration of the project and the proposed disposal location of the soil.
- xviii) Following written Notification, the Department will determine the post closure reporting requirements. Significant disturbances of regulated soil will require submission of a Closure Report for Department review and approval documenting that the activities were performed in accordance with this SMP and the Department approved ELUR. Minor disturbances of regulated soil may be documented through the annual certification submitted in accordance with Section H (Inspection & Non- Compliance) of the Department approved ELUR. The Department will also make a determination regarding the necessity of performing Public Notice to abutting property owners/tenants concerning the proposed activities. Work associated with the Notification will not commence until written Department approval has been issued. Once Department approval has been issued, the Department will be notified a minimum of two (2) days prior to the start of activities at the site. Shall any significant alterations to the Department approved plan be necessary, a written description of the proposed deviation, will be submitted to the Department for review and approval prior to initiating such changes.