BIGGS & MATHEWS ENVIRONMENTAL
Consulting Engineers ◆ Hydrogeologists
Mansfield ◆ Arlington ◆ Dallas ◆ Wichita Falls

May 26, 2011

Mr. P. Hunt Prompuntagorn, Project Manager
MSW Permits Section – MC-124
Waste Permits Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: Atascocita Recycling and Disposal Facility – Harris County
Municipal Solid Waste (MSW) – Permit No. 1307D
Permit Amendment Application – Supplemental Submittal
Tracking Nos. 14452326, 14476346, 14598216, and 14667269
CN600127856 / RN100216142

Dear Mr. Prompuntagorn:

This supplemental response to a recent Texas Commission on Environmental Quality (TCEQ) staff comment is submitted on behalf of Waste Management of Texas, Inc. The permit amendment application has been revised as appropriate and one original and three copies are enclosed with this letter. The revision number and date are noted on each revised page. Our response to the TCEQ staff comment is presented below.

Comment:

1. Please show the cushion geotextile as its own component in the final cover system in Attachment D, Table D-2 and Attachment D8, Table D8-1. In addition, include the minimum thickness or appropriate property for both the cushion geotextile and drainage geocomposite in each of these tables.

RESPONSE: Attachment D, Table D-2 and Attachment D8, Table D8-1 have been revised to include the cushion geotextile, minimum thickness for the double-sided drainage geocomposite, and the minimum unit weight for the cushion geotextile. Unit weight was included rather than thickness because it is used as the industry standard for specifying geotextiles. In addition, Attachment D8, Table D8-8 has been revised to replace the apparent opening size specification with the unit weight specification for the cushion geotextile since the geotextile does not function as a filter.

We trust this response is satisfactory to you and meets the rules and regulations of the TCEQ. If you need additional information, please let us know.

Sincerely,

BIGGS & MATHEWS ENVIRONMENTAL
TBPE No. F-256 ◆ TBPG No. 50222

Kenneth J. Welch, P.E.
Principal Engineer

Attachments: Revised Permit Amendment Application (original and three copies)

cc: Mr. Steve Jacobs, WMTX (1)
Mr. Charles Rivette, P.E., WMTX (1)

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Table D-1
Atascocita RDF
Components of the Composite Liner System

Liner System Component	Description	Thickness
Protective Cover	General earthfill	24 inches
Leachate Collection Layer	Single-sided geocomposite on floor Double-sided geocomposite on side slopes	0.25 inches
Geomembrane Liner	Smooth HDPE geomembrane on floor Textured HDPE geomembrane on side slopes	60 mil
Compacted Soil Liner	Compacted soil with a coefficient of permeability less than or equal to 1×10^{-7} cm/sec	24 inches

1.7 Final Cover Quality Control Plan

30 TAC §330.457

A quality control plan for the final cover system is provided in Attachment D8. Details of the final cover system are provided in Attachment D3. The components of the final cover system are listed from top to bottom in Table D-2.

Table D-2
Atascocita RDF
Components of the Final Cover System

SUBTITLE D FINAL COVER		
Cover System Component	**Description**	**Thickness**
Erosion Layer	Soil that is capable of sustaining native plant growth	18 inches
Cushion Layer	Geotextile on top slopes only	See note below
Drainage Layer	Double-sided geocomposite on side slopes only	~~varies~~0.2 inches
Flexible Membrane Cover (FMC)	Smooth LLDPE or HDPE geomembrane on top slopes Textured LLDPE or HDPE geomembrane on side slopes	40 mils (LLDPE) 60 mils (HDPE)
Infiltration Layer	Compacted soil with a maximum coefficient of permeability less than or equal to 1×10^{-5} cm/sec	18 inches
PRE-SUBTITLE D FINAL COVER		
Cover System Component	**Description**	**Thickness**
Erosion Layer	Soil that is capable of sustaining native plant growth	6 inches
Infiltration Layer	Compacted soil with a maximum coefficient of permeability less than or equal to 1×10^{-7} cm/sec	18 inches

Note: Geotextile minimum unit weight = 8 oz/yd^2

Table D8-1
Atascocita RDF
Components of the Final Cover System

SUBTITLE D FINAL COVER		
Cover System Component	**Description**	**Thickness**
Erosion Layer	Soil that is capable of sustaining native plant growth	18 inches
Cushion Layer	Geotextile on top slopes only	See note below
Drainage Layer	Double-sided geocomposite on side slopes only	~~varies~~0.2 inches
Flexible Membrane Cover (FMC)	Smooth LLDPE or HDPE geomembrane on top slopes Textured LLDPE or HDPE geomembrane on side slopes	40 mils (LLDPE) 60 mils (HDPE)
Infiltration Layer	Compacted soil with a maximum coefficient of permeability less than or equal to 1×10^{-5} cm/sec	18 inches
PRE-SUBTITLE D FINAL COVER		
Cover System Component	**Description**	**Thickness**
Erosion Layer	Soil that is capable of sustaining native plant growth	6 inches
Infiltration Layer	Compacted soil with a maximum coefficient of permeability less than or equal to 1×10^{-7} cm/sec	18 inches

Note: Geotextile minimum unit weight = 8 oz/yd^2

2.2 Construction Monitoring

Continuous on-site monitoring is necessary to assure that the components of the final cover system are constructed in accordance with this FCQCP. The CQA monitor shall provide continuous on-site observation during the following construction activities:

- Infiltration layer placement, processing, compaction, and testing
- Flexible membrane cover deployment, trial welds, seaming, testing, and repairing
- Drainage layer deployment and seaming
- Erosion layer placement
- Any work that could damage the installed components of the final cover system

The GP will document and certify that the final cover system was constructed in accordance with this FCQCP. The GP shall make sufficient site visits to observe critical construction activities and to verify that the construction and quality assurance activities are performed in accordance with this FCQCP.

Table D8-8
Atascocita RDF
Geotextile Properties

Test	Standard	Required Property
Material ~~Apparent Opening Size~~Unit Weight	ASTM D 5261~~4751~~	Nonwoven polypropylene or polyester 8 oz/yd^2~~70 sieve~~

Manufacturer quality control testing procedures for geotextile are listed in Section 6.5.

6.2.3 Delivery and Storage

Geocomposite and geotextile shall be shipped in rolls labeled with the manufacturer's name, roll number, and lot or batch number. The CQA monitor shall inspect the rolls for shipping damage and complete a geosynthetics receipt log for all materials delivered to the site. Damaged rolls shall be rejected.

The geocomposite and geotextile shall be unloaded and handled with equipment that does not cause damage. Rolls should not be pushed, slid, or dragged to the storage location. The geocomposite and geotextile must not be stored on wet, soft, or rocky subgrade, but must be stored on a stable subgrade. Geocomposite and geotextile must not be stacked more than five rolls high to avoid crushing the roll cores. The stored geocomposite and geotextile must be protected from puncture, grease, dirt, excessive heat, or other damage.

6.3 Preparation

Prior to installation of the drainage layer, the FMC shall be tested and verified in accordance with Section 5.5. The CQA monitor shall observe that the surface to receive the geocomposite or geotextile is free of debris, stones, and dirt and verify that the conformance documentation has been submitted and approved.

6.4 Installation

Double-sided geocomposite shall be installed on side slopes and geotextile shall be installed on the top slopes. Geocomposite and geotextile shall be deployed by equipment that will unroll the geocomposite without damaging, crimping, or stretching it and deployment equipment must not damage the underlying FMC. All panels must be anchored with adequate ballast to prevent uplift from wind. Smoking and damaging shoes shall not be permitted on the geocomposite and only low-ground pressure supporting equipment shall be allowed on the FMC. Adjacent rolls of geocomposite shall be securely tied through the drainage net with plastic fasteners every 5 feet along the length of the panel and every 6 inches along the ends of the panels. Adjacent rolls of geotextile shall be overlapped and sewn or heat bonded together.