APPENDIX O

NONWOVEN GEOTEXTILE CONFORMANCE TEST RESULTS
March 13, 2014

Bill To: Bill To:

Bill Sabatka
Arcadis U.S., Inc.
211 North Florence, Suite 202
El Paso, Texas 79901

email: bill.sabatka@arcadis-us.com

Dear Mr. Sabatka:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project: ASARCO El Paso- Category 1 Landfill Cell 3

TRI Job Reference Number: E2386-91-07

Material(s) Tested: One GSE Nonwoven Geotextile(s)

Test(s) Requested: Mass/Unit Area (ASTM D 5261)
Grab Tensile (ASTM D 4632)
Puncture Strength (ASTM D 4833)
Trapezoidal Tear (ASTM D 4833)

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

Sincerely,

M. Patel

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com
### Geotextile Test Results

**TRI Client:** Arcadis U.S., Inc.  
**Project:** ASARCO El Paso - Category 1 Landfill Cell 3

**Material:** GSE 12oz. Nonwoven Geotextile  
**Sample Identification:** 130466537  
**TRI Log #:** E2386-91-07

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Replicate Number</th>
<th>STD. MEAN</th>
<th>DEV.</th>
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</thead>
<tbody>
<tr>
<td><strong>Mass/Unit Area (ASTM D 5261)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5&quot; diameter circle (grams)</td>
<td>4.35</td>
<td>4.18</td>
<td>5.56</td>
</tr>
<tr>
<td>Mass/Unit Area (oz/sq.yd)</td>
<td>10.1</td>
<td>9.72</td>
<td>12.9</td>
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<tr>
<td><strong>Grab Tensile Properties (ASTM D 4832)</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>MD - Tensile Strength (lbs)</td>
<td>427</td>
<td>372</td>
<td>458</td>
</tr>
<tr>
<td>TD - Tensile Strength (lbs)</td>
<td>404</td>
<td>415</td>
<td>457</td>
</tr>
<tr>
<td>MD - Elong. @ Max. Load (%)</td>
<td>86</td>
<td>81</td>
<td>87</td>
</tr>
<tr>
<td>TD - Elong. @ Max. Load (%)</td>
<td>119</td>
<td>103</td>
<td>107</td>
</tr>
<tr>
<td><strong>Puncture Resistance (ASTM D 4833)</strong></td>
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<td></td>
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</tr>
<tr>
<td>Puncture Strength (lbs)</td>
<td>153</td>
<td>285</td>
<td>209</td>
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<tr>
<td></td>
<td>175</td>
<td>231</td>
<td>302</td>
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<tr>
<td><strong>Trapezoidal Tear (ASTM D 4533)</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>MD - Tear Strength (lbs)</td>
<td>166</td>
<td>268</td>
<td>166</td>
</tr>
<tr>
<td>TD - Tear Strength (lbs)</td>
<td>251</td>
<td>232</td>
<td>250</td>
</tr>
</tbody>
</table>

MD Machine Direction  
TD Transverse Direction

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

**TRI Environmental, Inc.**  
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