

# MATERIALS ANALYSIS REPORT



**DAKOTA**  
Analytical, Inc.

Customer Name: **T.X.I Bells Savoy**  
 Customer Address:  
 City, State, Zip Code:  
 Customer Telephone:

Date Sample Received: 6/14/2006  
 Sample Description: Sand/Dakota mix  
 Sample Condition: Good 4.3 %M  
 Customer Fax:

833 Gateway Drive  
 East Grand Forks, MN 56721  
 701-746-4300  
 Fax: 218-773-3151  
 lab@dakotapeat.com  
 www.dakotapeat.com

Sample Number	Lab Number	Ksat <sup>(1)</sup> (in/hr)	Porosity <sup>(1)</sup>			Bulk Density <sup>(1)</sup> (g/cm <sup>3</sup> )	Particle Density <sup>(1)</sup> (g/cm <sup>3</sup> )	% Organic Matter <sup>(3)</sup> (LOI)	Conductivity <sup>(2)</sup> (mmhos)	pH <sup>(4)</sup> (CaCl2 1:1)
			% Total	% Capillary <sup>(a)</sup>	% Air <sup>(a)</sup>					
USGA Values		≥ 6	35-55	15-25	15-30	---	---	---	---	
Sand/Dakota mix	<b>LR06- 123Q</b>	<b>21</b>	<b>39.4</b>	<b>17.1</b>	<b>22.3</b>	<b>1.60</b>	<b>2.642</b>	<b>0.61</b>	<b>7.1</b>	
Within Range or Not		<b>OK</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>	

Particle Size Analysis <sup>(5)</sup>			Sand Size Distribution <sup>(5), (b)</sup>						D <sub>85</sub>	
% Sand	% Silt	% Clay	% Gravel (#10 sieve)	% Very Coarse (#18 sieve)	% Coarse (#35 sieve)	% Medium (#60 sieve)	% Fine (#100 sieve)	% Very Fine <sup>(c)</sup> (#140 sieve) (#270 sieve)		
>92 %	≤ 5%	≤ 3%	≤ 3% gravel ≤ 10% combined		≥ 60 %		≤ 20%	≤ 5%		---
<b>98.5</b>	<b>0.96</b>		<b>0.57</b>	<b>4.09</b>	<b>24.6</b>	<b>51.1</b>	<b>15.3</b>	<b>2.89</b>		
<b>OK</b>	<b>OK</b>		<b>OK</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>		

Sample Number	Peat Analysis				Gravel Size Distribution <sup>(8),(b)</sup>					
	% Organic <sup>(6)</sup>	% Ash <sup>(6)</sup>	% Water <sup>(6)</sup>	pH <sup>(7)</sup>	% 1/2"	% 3/8"	% 1/4"	10 Mesh	18 Mesh	Pan
	≥ 85%	≤ 15%	---	---	---	---	---	---	---	---

Particle Shape <sup>(5)</sup>	
Angularity	Sphericity
<b>sub-angular/sub-round</b>	<b>medium</b>
<b>OK</b>	<b>OK</b>

(1) ASTM F1815, (2) Soil EC 1:2 soil H2O ratio method,  
 (3) ASTM F1647, (4) ASTM D4972, (5) ASTM 1632,  
 (6) ASTM D2974, (7) ASTM D2976, (8) ASTM C136,  
 (a) determined at 30 cm tension, (b) % retained on sieve,  
 (c) as defined by USGA specifications

This report applies only to the sample(s) tested. Samples are maintained a maximum of thirty days before disposal. This test report contains confidential information and shall not be reproduced except in full, and with the express written approval of DAKOTA. All tests are performed according to USGA guidelines and ASTM methods. DAKOTA is not responsible for the accuracy of these test methods and makes no claims about their ability to predict performance in actual use.

Member of the Putting Greens Materials Testing Technical Advisory Committee  
 Member of USGA Proficiency Testing Program

ALL IN-HOUSE REFERENCE MATERIALS TESTED WITHIN LIMITS X YES \_\_\_ NO - EXPLAIN  
 A2LA Approved Methods: ASTM C136, D421, D2974, D2976, D4972, F1632, F1647, F1815  
 Ksat adjusted to 8%M. PS Prof. Test results are good.

**Comment:**

By: *Diane K. Rindt* Title: Lab Manager



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