Exhibit A – Quality Assurance Laboratory Services

Material/Location	Test(s)	Estimated Number of Tests
Top Soil for 6-inch Vegetative Layer	Organic Matter Content	1
	Primary Macronutrients (N, P, K)	1
	Secondary Macronutrients (S, Ca, Mg)	1
	pH	1
	Soil Types	1
	Rate of Percolation	1
6-inch Vegetative Layer	pH	31
	Organic Content	31
6-inch Vegetative Layer & 18-inch Protective Soil Layer	Thickness (ASTM D751)	31
18-inch Protective Soil Layer	Sieve Analysis (ASTM D422)	18
	Soil Classification (ASTM D2487)	18
	Organic Content (ASTM D2974)	18
	Atterberg Limits (ASTM D4318)	18
	Hydraulic Conductivity (ASTM D2434)	18
	Field Density and Moisture Content - Modified Proctor (ASTM D1557)	14
	Field Density and Moisture Content - Nuclear Density Testing (ASTM D6938)	137
Structural Fill	Organic Content (ASTM D2974)	1
	Atterberg Limits (ASTM D4318)	1
	Sieve Analysis (ASTM D422)	1

Exhibit A – Quality Assurance Laboratory Services

Material/Location	Test(s)	Estimated Number of Tests
Structural Fill	Field Density and Moisture Content - Modified Proctor (ASTM D1557)	1
	Field Density and Moisture Content - Nuclear Density Testing (ASTM D6938)	15
Common Fill	Soil Classification (ASTM D2487)	11
	Organic Content (ASTM D2974)	11
	Atterberg Limits (ASTM D4318)	11
	Field Density and Moisture Content - Modified Proctor (ASTM D1557)	14
	Field Density and Moisture Content - Nuclear Density Testing (ASTM D6938)	137
Final Cover Foundation Layer	Sieve Analysis (ASTM D422)	20
	Soil Classification (ASTM D2488)	20
	Organic Content (ASTM D2974)	20
	Field Density and Moisture Content - Modified Proctor (ASTM D1557)	14
	Field Density and Moisture Content - Nuclear Density Testing (ASTM D6938)	137
Coarse Aggregate #57 Stone	Sieve Analysis (ASTM C136)	9
	Carbonate Content (ASTM D4373)	9
Coarse Aggregate #4 Stone	Sieve Analysis (ASTM C136)	21
	Carbonate Content (ASTM D4373)	21
Screened Gravel	Sieve Analysis (ASTM C136)	17
	Carbonate Content (ASTM D4373)	17

Exhibit A – Quality Assurance Laboratory Services

Material/Location	Test(s)	Estimated Number of Tests
250 mil Composite Drainage Net	Density (ASTM D1505)	14
	Carbon Black Content (ASTM D1603)	14
	Thickness (ASTM D5199)	14
	Tensile Strength (ASTM D5035)	14
	Mass per Unit Area (ASTM D5261)	14
	Apparent Opening Size (ASTM D4751)	14
	Peel Adhesion (ASTM 7005)	14
	Transmissivity (ASTM D4716)	3
40 mil Textured LLDPE Geomembrane	Thickness (ASTM D5994)	14
	Density (ASTM D792)	14
	Tensile Properties (ASTM D6693 Type IV)	14
	Tear Resistance (ASTM D1004)	14
	Carbon Black Content (ASTM D1603)	14
	Carbon Black Dispersion (ASTM D5596)	14
	Asperity Height (ASTM D7466)	14
40 mil Textured LLDPE Geomembrane (Destructive Seam Testing)	Shear and Peel Strength (ASTM D6392)	130
300 mil Composite Drainage Net	Density (ASTM D1505)	14
	Carbon Black Content (ASTM D1603)	14
	Thickness (ASTM D5199)	14

Exhibit A – Quality Assurance Laboratory Services

Material/Location	Test(s)	Estimated Number of Tests
300 mil Composite Drainage Net	Tensile Strength (ASTM D5035)	14
	Mass per Unit Area (ASTM D5261)	14
	Apparent Opening Size (ASTM D4751)	14
	Peel Adhesion (ASTM 7005)	14
	Transmissivity (ASTM D4716)	3
In-situ Condition: 18-inch Protective Soil Layer/Double-Sided Geocomposite/Geomembrane	Transmissivity (ASTM D4716)	1
In-situ Condition: Geomembrane/Double-Sided Geocomposite/6-inch Final Cover Foundation Layer	Transmissivity (ASTM D4716)	1
Protective Soil Layer/300 mil Double-Sided CDN	Interface Face Shear Testing (ASTM D5321)	3
300 mil Double-Sided CDN /Textured Geomembrane	Interface Face Shear Testing (ASTM D5321)	3
Textured Geomembrane/250 mil Double-Sided CDN	Interface Face Shear Testing (ASTM D5321)	3
250 mil Double-Sided CDN /Final Cover Foundation layer	Interface Face Shear Testing (ASTM D5321)	3
Geotextile	Mass per Unit Area (ASTM D5261)	1
	Static Puncture Resistance (ASTM D6241)	1
	Grab Elongation (D4632)	1
	Grab Tensile (ASTM D4632)	1
	Flow Rate/Permittivity (ASTM D4491)	1
	Apparent Opening Size (ASTM D4751)	1

Exhibit A – Quality Assurance Laboratory Services

Material/Location	Test(s)	Estimated Number of Tests
Road Base	Field Density and Moisture Content - Modified Proctor (ASTM D1557)	1
	Field Density and Moisture Content - Nuclear Density Testing (ASTM D6938)	9
Road Subbase	AASTHO T-180	8
Pipe Trenches	Field Density and Moisture Content - Modified Proctor (ASTM D1557)	1
	Field Density and Moisture Content - Nuclear Density Testing (ASTM D6938)	116
Berms	Field Density and Moisture Content - Modified Proctor (ASTM D1557)	1
	Field Density and Moisture Content - Nuclear Density Testing (ASTM D6938)	89
Concrete	Compression Strength Test (ASTM C31 and C39)	1
	Slump Test (ASTM C143)	5