

Appendix E – Siltron ASTM 5141 Testing from TRI Environmental



TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

Sediment Control Test Results via ASTM D 5141

Client: MKB TRI Log #: 549 Date: 2/27/2017 Temperature, C: 14 Technicians: JWS/AEH

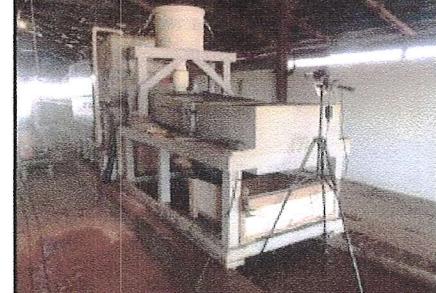
Sample ID	Composition	Specimen #	Soil Type	Test Configuration (Vertical or Horizontal)	Specimen Width, cm	Flow Volume (L)	Distance from SRD to the edge of water behind SRD at end of 25 min (mm)	Flow Rate (m³/m²/min)	Flow Rate (GPM/ft²)	Initial Mass of Soil (g)	Final Mass of Soil (g)	Filtering Efficiency (%)
Siltron	Fiber Filled Needle Punch Fabric	1	Clear Water	Vertical	81	50	0	0.752	18.461	0	0.00	n/a
			Silty Clay	Vertical	81	50	0	0.088	2.164	150	5.83	96.2
			Silty Clay	Vertical	81	50	167	0.049	1.199	150	4.77	96.8
			Silty Clay	Vertical	81	50	326	0.041	1.017	150	3.52	97.7
			Avg					0.059	1.460	150	4.64	96.9



Typical Upstream View - With Sediment-Laden Discharge



Typical Downstream View - With Sediment-Laden Discharge



Testing Apparatus

Calculations & Report by: C. Joel Sprague, P.E.
Date: 4-Mar-17

Appendix F – Siltron ASTM 7351 Testing from TRI Environmental



TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

ASTM D 6459 - STANDARD TEST METHOD FOR DETERMINATION OF ROLLED EROSION CONTROL PRODUCT (RECP) PERFORMANCE IN PROTECTING HILLSLOPES FROM RAINFALL-INDUCED EROSION

Project: ASTM D 7351 modified - SRD Inlet Testing

Client: MKB

Test Date: 2/24/2017

SRD/Setup: Run 1: Siltron & 6% Sediment Concentration + 250 mg/L Oil

Run 2: Siltron & Clear Water Flush (after Run of 6% Sed Conc + 250 mg/L Oil)

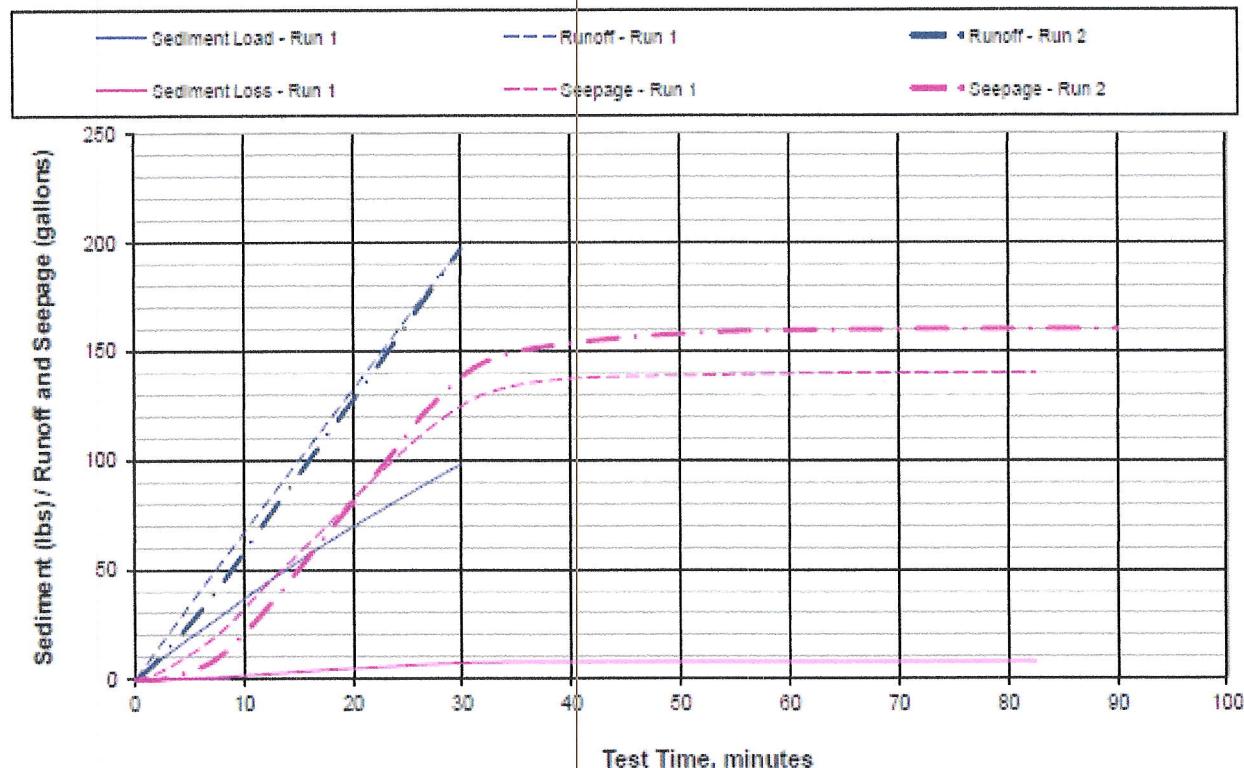
Water / Soil Input / Duration:	Run 1 -	1645 lbs water	105 lbs soil	75 minutes
	Run 2 -	1645 lbs water	0 lbs soil	90 minutes

Soil Retention Effectiveness: Run 1 - 92.31% Run 2 - n/a

Seepage Effectiveness: Run 1 - 70.91% Run 2 - 81.09%

Oil Retained: Run 1 - 99.29% Run 2 - 96.78% (of oil retained in Run 1)

Sediment Load / Loss and Rate of Runoff / Seepage



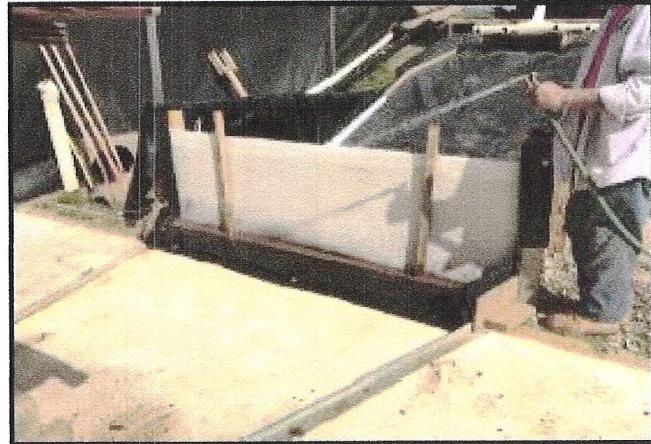
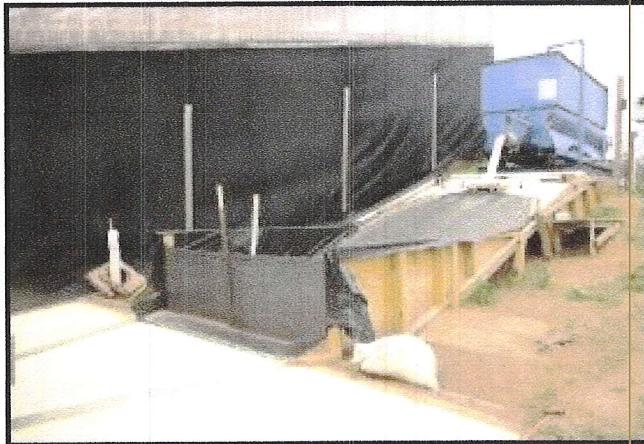
The testing is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose.

CJS 3/22/17

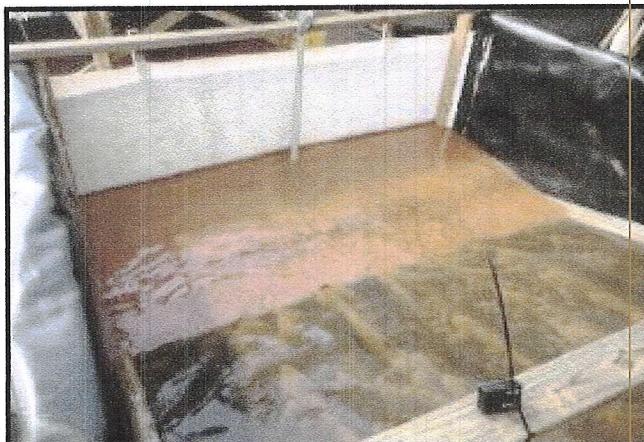
Retention and Seepage Effectiveness Calculations																																	
Setup: Siltron & 6% Sediment Concentration + 250 mg/L Oil Soil: Sandy Loam																																	
Sample Number	Test Time, minutes	Oil & Grease	Total Weight, g	Decanted Weight, g	Dry Weight, g	Bottle Weight, g	Dry Sediment Weight, mg	Total Collected Water Wt., g	Total Collected Volume of Water, l	Sediment Conc., mg/l	% Solids	Reservoir Weight, lb	Assoc. Discharge, gal	Gumm Discharge, gal	Col. Tank Depth, in	Plottime	GRD Pending Height, in	Cumm Oil Loss, lbs	Assoc. Solids Loss, lbs														
Upstream																																	
B0	0	260	379.34	197.69	157.82	151.57	19950	210.82	0.21	79687	7.57%	1760	17	17	0	0	0	0															
B5	5	260	399.42	203.97	166.02	151.57	14360	222.40	0.23	64623	6.48%	1460	33	50	0	7.5	27.6	17.8															
B10	10	260	371.09	198.87	165.1	151.12	13080	205.89	0.21	63929	6.38%	1162	33	53	0	12.5	48.0	17.4															
B15	15	260	380.63	200.14	164.53	151.57	13260	218.10	0.23	60796	6.08%	968	33	115	0	17.5	61.6	16.6															
B20	20	260	377.34	194.09	163.33	151.60	11890	214.01	0.21	56276	5.63%	692	33	148	0	22.5	76.8	15.2															
B25	25	260	379.46	195.62	163.01	151.59	11420	218.48	0.23	52760	5.28%	288	33	181	0	27.5	91.2	14.4															
B30	30	260	380.96	194.49	163.1	151.59	11220	220.86	0.23	50901	5.08%	7	16	197	0	30.0	98.1	6.9															
Water Added To Mixer (lbs): 1645					Oil Added To Mixer (lbs): 105			AVG(O): 60010		6.00%	TOTAL(O): 197		88.1																				
Downstream																																	
A0	0		376.89	196.11	162.83	151.70	1130	224.06	0.22	5042	0.00%	0	4	4	0.0	3.5	0.0	0.2															
A5	5	3	* 376.44	196.15	162.26	160.83	1430	224.18	0.23	5375	0.64%	66	16	20	3.0	7.5	43.0	1.0															
A10	10	0	BR1	379.60	199.05	163.84	151.81	1720	226.96	0.23	7666	0.77%	268	25	45	24.0	12.5	60.0	2.6														
A15	15	3.4	*	395.56	191.29	151.97	150.07	1900	233.59	0.23	8134	0.81%	460	24	69	35.0	17.5	70.0	4.5														
A20	20	0	BR1	387.87	195.19	162.74	151.12	1600	236.13	0.24	6980	0.58%	680	28	94	45.0	22.5	82.0	5.7														
A25	25	4.2	*	399.10	199.19	163.37	151.86	1720	234.73	0.23	7328	0.73%	888	22	118	55.0	27.5	82.0	7.0														
A30	30	0	BR1	398.63	198.16	162.98	151.56	1430	235.84	0.24	6083	0.61%	1048	15	131	55.0	32.5	79.0	7.8														
A35	35		382.40	183.87	162.75	151.78	970	239.85	0.24	4048	0.40%	1148	5	137	66.0	40.0	65.0	8.0															
A45	45	0	BR1	389.74	197.36	161.98	151.34	740	236.76	0.24	3126	0.31%	1156	2	139	70.0	22.5	55.0	8.1														
A60	60		384.81	190.93	162.07	151.62	460	232.84	0.23	1833	0.18%	1174	1	140	70.0	67.5	44.0	8.1															
A75	75		380.99	181.89	162.09	151.81	260	228.80	0.23	1223	0.12%	1174	0	140	70.0	82.5	40.0	8.1															
A90	90		0.00	0.00	0.00	0.00	0	0.00	0.00																								
Oil Collected (lbs): n/a					Oil Retained Upstream: 99.29%			AVG(O): 4372		0.50%	TOTAL(O): 140		8.1																				
Soil Retention Effectiveness = 92.31%												Seepage Effectiveness = 70.91%																					
Retention and Seepage Effectiveness Calculations																																	
Setup: Siltron & Clear Water Flush (after Run of 6% Sed Conco + 250 mg/L Oil) Soil: Sandy Loam																																	
Sample Number	Test Time, minutes	Oil & Grease Retained	Total Weight, g	Decanted Weight, g	Dry Weight, g	Bottle Weight, g	Dry Sediment Weight, mg	Total Collected Water Wt., g	Total Collected Volume of Water, l	Sediment Conc., mg/l	% Solids	Reservoir Weight, lb	Assoc. Discharge, gal	Gumm Discharge, gal	Col. Tank Depth, in	Plottime	GRD Pending Height, in	Cumm Oil Loss, lbs	Assoc. Solids Loss, lbs														
Upstream																																	
B0	0	248.2	0.00	0.00	0	0.00	0	0.00	0.00	0	0.00%	1646	11	11	0	3.5	0.0	0.0															
B5	5	248.2	0.00	0.00	0	0.00	0	0.00	0.00	0	0.00%	1450	29	40	0	7.5	0.0	0.0															
B10	10	248.2	0.00	0.00	0	0.00	0	0.00	0.00	0	0.00%	1160	35	75	0	12.5	0.0	0.0															
B15	15	248.2	0.00	0.00	0	0.00	0	0.00	0.00	0	0.00%	876	35	110	0	17.5	0.0	0.0															
B20	20	248.2	0.00	0.00	0	0.00	0	0.00	0.00	0	0.00%	584	35	144	0	22.5	0.0	0.0															
B25	25	248.2	0.00	0.00	0	0.00	0	0.00	0.00	0	0.00%	298	35	179	0	27.5	0.0	0.0															
B30	30	248.2	0.00	0.00	0	0.00	0	0.00	0.00	0	0.00%	0	18	197	0	30.0	0.0	0.0															
Water Added To Mixer (lbs): 1645					Oil Added To Mixer (lbs): 0			AVG(O): 0		0.00%	TOTAL(O): 197		0.0																				
Downstream																																	
A0	0		0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	0	0	0	0.0	0.0	0.0	0.0															
A5	5	3.2	*	0.00	0.00	0.00	0.00	0	0.00	0	0.00%	4	9	10	0.0	7.5	78.0	0.0															
A10	10		0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	154	25	34	15.0	12.5	97.0	0.0															
A15	15	0	BR1	0.00	0.00	0.00	0.00	0	0.00	0	0.00%	418	31	66	30.0	17.5	100.0	0.0															
A20	20	28.8	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	688	30	96	45.0	22.5	100.0	0.0															
A25	25	0	BR1	0.00	0.00	0.00	0.00	0	0.00	0	0.00%	926	31	126	60.0	27.5	99.0	0.0															
A30	30		0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	1178	19	146	71.0	32.5	94.0	0.0															
A35	35		0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	1260	9	153	76.0	40.0	64.0	0.0															
A45	45		0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	1308	5	158	77.0	32.5	66.0	0.0															
A60	60		0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	1332	1	160	79.0	37.5	45.0	0.0															
A75	75		0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	1334	0	160	80.0	30.0	35.0	0.0															
A90	90		0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00%	0																					
Oil Collected (lbs): n/a					Oil Retained Upstream: 99.78%			AVG(O): 0		0.00%	TOTAL(O): 160		0.0																				
Soil Retention Effectiveness = #DIV/0!												Seepage Effectiveness = 81.09%																					



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ASTM D7351 Full-scale Sediment Retention Device Testing Setup (typical) / Siltron Installation



Runoff introduced for 30 minutes / Seepage and ponding monitored for up to an additional 60 minutes.



Downstream seepage after runoff stops / Retained sediment at end of test