

Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

ASTM D 5084 - 00

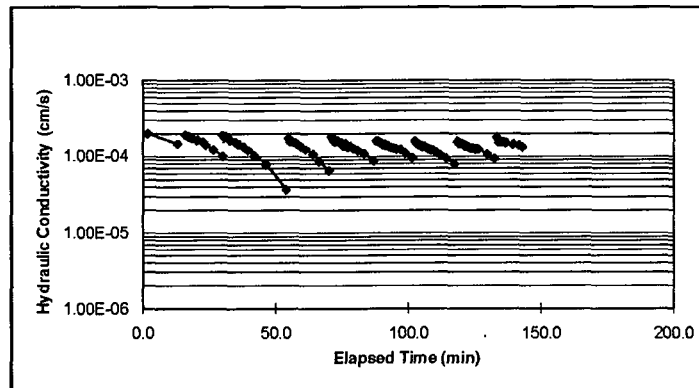
Sample I.D.		75-mm East Side South Pit 30-60 cm		Test Date :	
Cell Pressure =	42.0 psi	Diameter of Sample, D =	7.0 cm		
Inflow Pressure =	40.7 psi	Length of Sample, L =	4.4 cm		
Outflow Pressure =	40.4 psi	Area of Sample, A =	38.32 cm ²		
Pressure Difference =	0.3 psi	Sample Volume, V =	170.3 cm ³		
Effective Stress =	1.5 psi	a_{in} =	1 cm ²		
Hydraulic Gradient, i =	4.7	a_{out} =	1 cm ²		
Weight of wet sample =	335.3 g	Sample Water Content =	#DIV/0! (%)		
Wet Density =	2.0 g/cm ³	Dry Density =	#DIV/0! g/cm ³		

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
				#DIV/0!

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:01:44	6.5	17.0	104.0	10.5	1.7	1.98E-04	1.1	6.5	7
0:13:10	19.5	4.0	686.0	-15.5	13.2	1.46E-04	1.0	13	13
0:00:00	0.0	24.0	-790.0	24.0	14.0				
0:01:55	7.0	16.8	115.0	9.8	15.9	1.91E-04	1.0	6.999039352	7.2
0:03:05	10.0	13.7	70.0	3.7	17.1	1.82E-04	1.0	3	3.1
0:04:38	13.0	10.7	93.0	-2.3	18.6	1.73E-04	1.0	3	3
0:06:28	15.5	8.2	110.0	-7.3	20.5	1.63E-04	1.0	2.5	2.5
0:08:37	17.5	6.2	129.0	-11.3	22.6	1.54E-04	1.0	2	2
0:09:40	18.2	5.5	63.0	-12.7	23.7	1.42E-04	1.0	0.7	0.7
0:12:38	19.5	4.2	178.0	-15.3	26.6	1.21E-04	1.0	1.3	1.3
0:16:13	20.4	3.3	215.0	-17.1	30.2	1.00E-04	1.0	0.9	0.9
0:00:00	0.0	23.9	-973.0	23.9	29.2				
0:00:45	3.0	20.8	45.0	17.8	30.0	1.88E-04	1.0	3	3.1
0:01:21	5.0	18.8	36.0	13.8	30.6	1.75E-04	1.0	2	2
0:02:01	7.0	16.7	40.0	9.7	31.2	1.81E-04			
0:03:02	9.5	14.2	61.0	4.7	32.2	1.68E-04	1.0	2.5	2.5
0:03:46	11.0	12.7	44.0	1.7	33.0	1.63E-04	1.0	1.5	1.5
0:05:41	14.0	9.7	115.0	-4.3	34.9	1.54E-04	1.0	3	3
0:07:01	15.5	8.2	80.0	-7.3	36.2	1.43E-04	1.0	1.5	1.5
0:08:47	17.0	6.7	106.0	-10.3	38.0	1.34E-04	1.0	1.5	1.5
0:10:26	18.0	5.7	99.0	-12.3	39.6	1.20E-04	1.0	1	1
0:12:53	19.0	4.7	147.0	-14.3	42.1	1.02E-04	1.0	1	1
0:17:11	20.0	3.7	258.0	-16.3	46.4	7.83E-05	1.0	1	1
0:24:42	20.6	3.1	451.0	-17.5	53.9	3.70E-05	1.0	0.6	0.6
0:00:00	0.0	24.0	-1482.0	24.0	53.9				
0:00:49	3.0	20.9	49.0	17.9	54.7	1.72E-04	1.0	3	3.1
0:01:29	5.0	18.9	40.0	13.9	55.4	1.57E-04	1.0	2	2
0:02:14	7.0	16.9	45.0	9.9	56.1	1.56E-04	1.0	2	2
0:03:07	9.0	14.9	53.0	5.9	57.0	1.51E-04	1.0	2	2
0:04:12	11.0	12.9	65.0	1.9	58.1	1.43E-04	1.0	2	2
0:05:34	13.0	10.9	82.0	-2.1	59.5	1.35E-04	1.0	2	2
0:07:25	15.0	8.9	111.0	-6.1	61.3	1.24E-04	1.0	2	2
0:10:13	17.0	6.9	168.0	-10.1	64.1	1.07E-04	1.0	2	2
0:12:27	18.0	5.9	134.0	-12.1	66.4	8.69E-05	1.0	1	1
0:16:09	19.0	4.9	222.0	-14.1	70.1	6.57E-05	1.0	1	1
0:00:00	0.0	23.9	-969.0	23.9	70.1				
0:00:55	3.5	20.4	55.0	16.9	71.0	1.78E-04	1.0	3.5	3.5
0:01:24	5.0	18.9	29.0	13.9	71.5	1.64E-04	1.0	1.5	1.5
0:02:09	7.0	16.9	45.0	9.9	72.3	1.56E-04	1.0	2	2
0:02:59	9.0	14.9	50.0	5.9	73.1	1.60E-04	1.0	2	2
0:04:00	11.0	12.9	61.0	1.9	74.1	1.52E-04	1.0	2	2
0:04:35	12.0	11.9	35.0	-0.1	74.7	1.51E-04	1.0	1	1
0:05:17	13.0	10.9	42.0	-2.1	75.4	1.38E-04	1.0	1	1
0:06:01	14.0	9.9	44.0	-4.1	76.1	1.47E-04	1.0	1	1
0:06:56	15.0	8.9	55.0	-6.1	77.0	1.32E-04	1.0	1	1
0:07:57	16.0	7.9	61.0	-8.1	78.1	1.36E-04	1.0	1	1
0:09:14	17.0	6.9	77.0	-10.1	79.3	1.26E-04	1.0	1	1
0:10:52	18.0	5.9	98.0	-12.1	81.0	1.19E-04	1.0	1	1
0:13:06	19.0	4.9	134.0	-14.1	83.2	1.09E-04	1.0	1	1
0:16:51	20.0	3.9	225.0	-16.1	87.0	8.67E-05	1.0	1	1

0:00:00	0.0	24.0	-1011.0	24.0	87.0				
0:00:53	3.0	20.9	53.0	17.9	87.9	1.59E-04	1.0	3	3.1
0:01:33	5.0	18.9	40.0	13.9	88.6	1.57E-04	1.0	2	2
0:02:21	7.0	16.8	48.0	9.8	89.4	1.51E-04	1.1	2	2.1
0:03:16	9.0	14.9	55.0	5.9	90.3	1.42E-04	1.0	2	1.9
0:03:47	10.0	13.9	31.0	3.9	90.8	1.44E-04	1.0	1	1
0:04:22	11.0	12.9	35.0	1.9	91.4	1.38E-04	1.0	1	1
0:05:00	12.0	11.9	38.0	-0.1	92.0	1.39E-04	1.0	1	1
0:05:43	13.0	10.9	43.0	-2.1	92.7	1.35E-04	1.0	1	1
0:06:33	14.0	9.9	50.0	-4.1	93.6	1.29E-04	1.0	1	1
0:07:30	15.0	8.9	57.0	-6.1	94.5	1.27E-04	1.0	1	1
0:08:37	16.0	7.9	67.0	-8.1	95.6	1.24E-04	1.0	1	1
0:10:00	17.0	6.8	83.0	-10.2	97.0	1.23E-04	1.1	1	1.1
0:11:47	18.0	5.8	107.0	-12.2	98.8	1.10E-04	1.0	1	1
0:14:22	19.0	4.8	155.0	-14.2	101.4	9.53E-05	1.0	1	1
0:00:00	0.0	24.0	-862.0	24.0	101.4				
0:00:54	3.0	20.8	54.0	17.8	102.3	1.59E-04	1.1	3	3.2
0:01:37	5.0	18.8	43.0	13.8	103.0	1.46E-04	1.0	2	2
0:02:27	7.0	16.8	50.0	9.8	103.9	1.41E-04	1.0	2	2
0:03:26	9.0	14.8	59.0	5.8	104.8	1.36E-04	1.0	2	2
0:04:00	10.0	13.8	34.0	3.8	105.4	1.32E-04	1.0	1	1
0:04:36	11.0	12.8	36.0	1.8	106.0	1.35E-04	1.0	1	1
0:05:17	12.0	11.8	41.0	-0.2	106.7	1.29E-04	1.0	1	1
0:06:04	13.0	10.8	47.0	-2.2	107.5	1.24E-04	1.0	1	1
0:06:58	14.0	9.8	54.0	-4.2	108.4	1.20E-04	1.0	1	1
0:07:59	15.0	8.8	61.0	-6.2	109.4	1.20E-04	1.0	1	1
0:09:14	16.0	7.8	75.0	-8.2	110.6	1.11E-04	1.0	1	1
0:10:49	17.0	6.8	95.0	-10.2	112.2	1.03E-04	1.0	1	1
0:12:55	18.0	5.8	126.0	-12.2	114.3	9.33E-05	1.0	1	1
0:16:01	19.0	4.8	186.0	-14.2	117.4	7.94E-05	1.0	1	1
0:00:00	0.0	24.0	-961.0	24.0	117.4				
0:00:55	3.0	20.8	55.0	17.8	118.3	1.56E-04	1.1	3	3.2
0:01:38	5.0	18.8	43.0	13.8	119.0	1.46E-04	1.0	2	2
0:02:26	7.0	16.8	48.0	9.8	119.8	1.47E-04	1.0	2	2
0:03:23	9.0	14.8	57.0	5.8	120.8	1.41E-04	1.0	2	2
0:03:56	10.0	13.8	33.0	3.8	121.3	1.36E-04	1.0	1	1
0:04:32	11.0	12.8	36.0	1.8	121.9	1.35E-04	1.0	1	1
0:05:12	12.0	11.8	40.0	-0.2	122.6	1.33E-04	1.0	1	1
0:05:58	13.0	10.8	46.0	-2.2	123.4	1.27E-04	1.0	1	1
0:06:49	14.0	9.8	51.0	-4.2	124.2	1.27E-04	1.0	1	1
0:07:48	15.0	8.8	59.0	-6.2	125.2	1.24E-04	1.0	1	1
0:08:55	16.0	7.8	67.0	-8.2	126.3	1.25E-04	1.0	1	1
0:12:18	18.0	5.8	203.0	-12.2	129.7	1.06E-04	1.0	2	2
0:14:57	19.0	4.8	159.0	-14.2	132.4	9.29E-05	1.0	1	1
0:00:00	0.0	24.0	-897.0	24.0	132.4				
0:00:47	3.0	21.0	47.0	18.0	133.2	1.76E-04	1.0	3	3
0:01:28	5.0	19.0	41.0	14.0	133.9	1.53E-04	1.0	2	2
0:02:14	7.0	17.0	46.0	10.0	134.6	1.53E-04	1.0	2	2
0:03:06	9.0	15.0	52.0	6.0	135.5	1.54E-04	1.0	2	2
0:04:08	11.0	13.0	62.0	2.0	136.5	1.49E-04	1.0	2	2
0:07:01	15.0	9.0	173.0	-6.0	139.4	1.43E-04	1.0	4	4
0:09:10	17.0	7.0	129.0	-10.0	141.6	1.38E-04	1.0	2	2
0:10:37	18.0	6.0	87.0	-12.0	143.0	1.32E-04	1.0	1	1



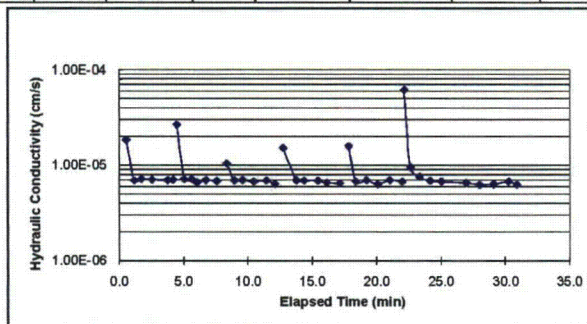
Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

Sample I.D. 305-mm East Side South Pit 60-90 cm				Test Date :			
Cell Pressure =	42.4	psi		Diameter of Sample, D =	30.5	cm	
Inflow Pressure =	41.5	psi		Length of Sample, L =	14.0	cm	
Outflow Pressure =	40.0	psi		Area of Sample, A =	729.66	cm ²	
Pressure Difference =	1.5	psi		Sample Volume, V =	10193.3	cm ³	
Effective Stress =	1.7	psi		a _{in} =	1	cm ²	
Hydraulic Gradient, i =	7.6			a _{out} =	1	cm ²	
Weight of wet sample =	20597.5	g		Sample Water Content =	22.51%	(%)	
Wet Density =	2.0	g/cm ³		Dry Density =	2.02	g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left(\frac{\Delta H_1}{\Delta H_2} \right)$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
50	50	554.13	461.51	22.51%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:32	4.0	20.3	32.0	16.3	0.5	1.83E-05	0.9	4	3.7
0:01:10	5.5	18.5	38.0	13.0	1.2	6.92E-06	1.2	1.5	1.8
0:01:43	7.0	17.1	33.0	10.1	1.7	7.19E-06	0.9	1.5	1.4
0:02:33	9.0	14.9	50.0	5.9	2.6	7.09E-06	1.1	2	2.2
0:03:45	12.0	12.2	72.0	0.2	3.8	6.98E-06	0.9	3	2.7
0:04:11	13.0	11.2	26.0	-1.8	4.2	7.03E-06	1.0	1	1
0:00:00	0.0	24.0	-251.0	24.0	4.2				
0:00:16	3.0	21.4	16.0	18.4	4.5	2.65E-05	0.9	3	2.6
0:00:50	4.5	19.8	34.0	15.3	5.0	7.13E-06	1.1	1.5	1.6
0:01:25	6.0	18.2	36.0	12.2	5.6	7.11E-06	1.1	1.5	1.6
0:01:50	7.0	17.2	25.0	10.2	6.0	6.56E-06	1.0	1	1
0:02:31	8.6	15.4	41.0	6.8	6.7	6.96E-06	1.1	1.6	1.8
0:03:22	10.5	13.3	51.0	2.8	7.6	6.81E-06	1.1	1.9	2.1
0:00:00	0.0	24.0	-202.0	24.0	7.6				
0:00:44	3.0	21.0	44.0	18.0	8.3	1.03E-05	1.0	3	3
0:01:20	4.5	19.3	36.0	14.8	8.9	6.98E-06	1.1	1.5	1.7
0:01:57	6.0	17.6	37.0	11.6	9.6	6.98E-06	1.1	1.5	1.7
0:02:49	8.0	15.4	52.0	7.4	10.4	6.72E-06	1.1	2	2.2
0:03:48	10.5	13.2	59.0	2.7	11.4	6.90E-06	0.9	2.5	2.2
0:04:29	12.0	11.8	41.0	-0.2	12.1	6.34E-06	0.9	1.5	1.4
0:00:00	0.0	24.0	-269.0	24.0	12.1				
0:00:37	4.0	20.7	37.0	16.7	12.7	1.50E-05	0.8	4	3.3
0:01:39	6.5	17.8	62.0	11.3	13.8	6.98E-06	1.2	2.5	2.9
0:02:15	8.0	16.3	36.0	8.3	14.4	6.92E-06	1.0	1.5	1.5
0:03:19	10.5	13.7	64.0	3.2	15.4	6.86E-06	1.0	2.5	2.6
0:04:00	12.0	12.2	41.0	0.2	16.1	6.53E-06	1.0	1.5	1.5
0:05:00	14.0	10.0	60.0	-4.0	17.1	6.47E-06	1.1	2	2.2
0:00:00	0.0	24.0	-300.0	24.0	17.1				
0:00:43	4.6	19.8	43.0	15.2	17.8	1.57E-05	0.9	4.6	4.2
0:01:15	6.0	18.5	32.0	12.5	18.4	6.77E-06	0.9	1.4	1.3
0:02:05	8.0	16.3	50.0	8.3	19.2	6.94E-06	1.1	2	2.2
0:02:58	10.0	14.4	53.0	4.4	20.1	6.30E-06	1.0	2	1.9
0:03:54	12.0	12.0	56.0	0.0	21.0	6.99E-06	1.2	2	2.4
0:04:52	14.0	9.8	58.0	-4.2	22.0	6.71E-06	1.1	2	2.2
0:00:00	0.0	24.0	-292.0	24.0	22.0				
0:00:07	3.0	21.3	7.0	18.3	22.1	6.16E-05	0.9	3	2.7
0:00:36	5.0	19.8	29.0	14.8	22.6	9.47E-06	0.8	2	1.5
0:01:18	7.0	17.9	42.0	10.9	23.3	7.51E-06	1.0	2	1.9
0:02:08	9.0	15.8	50.0	6.8	24.1	6.87E-06	1.1	2	2.1
0:03:01	11.0	13.7	53.0	2.7	25.0	6.72E-06	1.1	2	2.1
0:04:57	15.0	9.5	116.0	-5.5	27.0	6.50E-06	1.1	4	4.2
0:05:58	17.0	7.6	61.0	-9.4	28.0	6.24E-06	1.0	2	1.9
0:07:04	19.0	5.5	66.0	-13.5	29.1	6.32E-06	1.1	2	2.1
0:08:14	21.0	3.1	70.0	-17.9	30.2	6.70E-06	1.2	2	2.4
0:08:53	22.0	1.9	39.0	-20.1	30.9	6.24E-06	1.2	1	1.2



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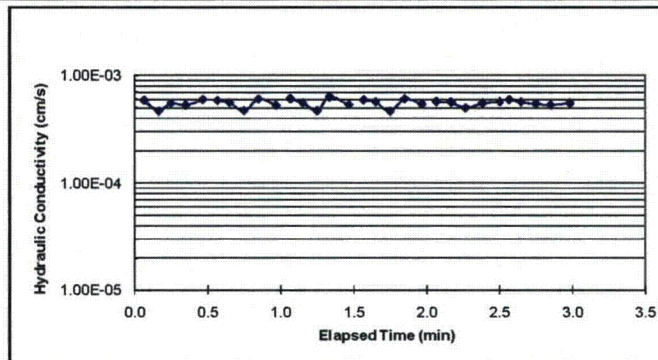
ASTM D 5084 - 00

Sample I.D. 305-mm West Side North Pit 0-30 cm			Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	40.5	psi	Length of Sample, L =	17.8 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	0.5	psi	Sample Volume, V =	12973.3 cm ³
Effective Stress =	1.8	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	2.0		a _{out} =	1 cm ²
Weight of wet sample =	24448.5	g	Sample Water Content =	8.10% (%)
Wet Density =	1.9	g/cm ³	Dry Density =	1.88 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
	51.12	354.17	331.46	8.10%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	23.8	0.0	23.8	0.0				
0:00:04	5.0	18.5	4.0	13.5	0.1	5.85E-04	1.1	5	5.3
0:00:10	10.0	13.5	6.0	3.5	0.2	4.67E-04	1.0	5	5
0:00:15	14.0	9.7	5.0	-4.3	0.3	5.49E-04	1.0	4	3.8
0:00:21	17.5	6.1	6.0	-11.4	0.4	5.31E-04	1.0	3.5	3.6
0:00:28	21.0	2.7	7.0	-18.3	0.5	5.97E-04	1.0	3.5	3.4
0:00:00	0.0	23.9	-28.0	23.9	0.5				
0:00:04	5.0	18.6	4.0	13.6	0.6	5.84E-04	1.1	5	5.3
0:00:09	10.0	13.6	5.0	3.6	0.7	5.59E-04	1.0	5	5
0:00:15	14.0	9.6	6.0	-4.4	0.8	4.69E-04	1.0	4	4
0:00:21	18.0	5.7	6.0	-12.3	0.9	6.03E-04	1.0	4	3.9
0:00:28	21.0	2.7	7.0	-18.3	1.0	5.30E-04	1.0	3	3
0:00:00	0.0	24.1	-28.0	24.1	1.0				
0:00:04	5.0	18.4	4.0	13.4	1.1	6.06E-04	1.1	5	5.7
0:00:09	10.0	13.5	5.0	3.5	1.2	5.56E-04	1.0	5	4.9
0:00:15	14.0	9.5	6.0	-4.5	1.3	4.71E-04	1.0	4	4
0:00:20	17.5	6.0	5.0	-11.5	1.3	6.31E-04	1.0	3.5	3.5
0:00:28	21.0	2.5	8.0	-18.5	1.5	5.34E-04	1.0	3.5	3.5
0:00:00	0.0	23.9	-28.0	23.9	1.5				
0:00:04	5.0	18.5	4.0	13.5	1.6	5.90E-04	1.1	5	5.4
0:00:09	10.0	13.4	5.0	3.4	1.7	5.67E-04	1.0	5	5.1
0:00:15	14.0	9.5	6.0	-4.5	1.8	4.65E-04	1.0	4	3.9
0:00:21	18.0	5.6	6.0	-12.4	1.9	6.05E-04	1.0	4	3.9
0:00:28	21.0	2.5	7.0	-18.5	2.0	5.43E-04	1.0	3	3.1
0:00:00	0.0	24.0	-28.0	24.0	2.0				
0:00:04	5.0	18.9	4.0	13.9	2.1	5.70E-04	1.0	5	5.1
0:00:10	11.0	13.0	6.0	2.0	2.2	5.64E-04	1.0	6	5.9
0:00:16	15.0	8.9	6.0	-6.1	2.3	4.96E-04	1.0	4	4.1
0:00:23	19.0	5.0	7.0	-14.0	2.4	5.52E-04	1.0	4	3.9
0:00:30	22.0	2.1	7.0	-19.9	2.5	5.69E-04	1.0	3	2.9
0:00:00	0.0	24.0	-30.0	24.0	2.5				
0:00:04	5.0	18.5	4.0	13.5	2.6	5.95E-04	1.1	5	5.5
0:00:09	10.0	13.4	5.0	3.4	2.7	5.67E-04	1.0	5	5.1
0:00:15	14.5	8.8	6.0	-5.7	2.8	5.47E-04	1.0	4.5	4.6
0:00:21	18.0	5.5	6.0	-12.5	2.9	5.33E-04	0.9	3.5	3.3
0:00:29	21.5	2.1	8.0	-19.4	3.0	5.53E-04	1.0	3.5	3.4



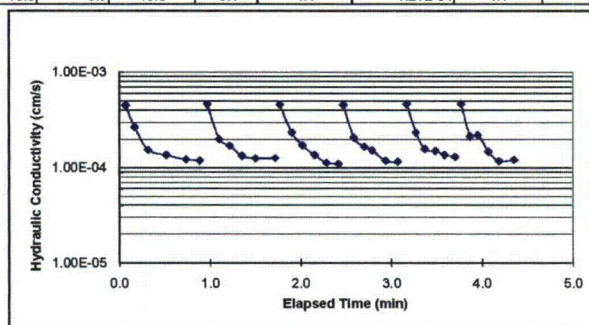
Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

Sample I.D. 305-mm West Side South Pit 0-30 cm		Test Date :	
Cell Pressure =	42.0 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.7 psi	Length of Sample, L =	17.8 cm
Outflow Pressure =	41.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	0.7 psi	Sample Volume, V =	12973.3 cm ³
Effective Stress =	0.6 psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	2.8	a _{out} =	1 cm ²
Weight of wet sample =	21912.9 g	Sample Water Content =	6.73% (%)
Wet Density =	1.7 g/cm ³	Dry Density =	1.69 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
	50.93	365.08	345.27	6.73%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.1	0.0	24.1	0.0				
0:00:04	5.0	19.0	4.0	14.0	0.1	4.51E-04	1.0	5	5.1
0:00:10	9.0	15.2	6.0	6.2	0.2	2.67E-04	1.0	4	3.8
0:00:19	12.0	12.2	9.0	0.2	0.3	1.55E-04	1.0	3	3
0:00:31	15.0	9.0	12.0	-6.0	0.5	1.36E-04	1.1	3	3.2
0:00:44	17.5	6.2	13.0	-11.3	0.7	1.23E-04	1.1	2.5	2.8
0:00:53	19.0	4.5	9.0	-14.5	0.9	1.19E-04	1.1	1.5	1.7
0:00:00	0.0	24.4	-53.0	24.4	0.9				
0:00:04	5.0	19.0	4.0	14.0	1.0	4.64E-04	1.1	5	5.4
0:00:12	9.0	15.2	6.0	6.2	1.1	2.01E-04	1.0	4	3.8
0:00:19	11.5	12.5	7.0	1.0	1.2	1.71E-04	1.1	2.5	2.7
0:00:27	13.5	10.3	8.0	-3.2	1.4	1.33E-04	1.1	2	2.2
0:00:36	15.5	8.2	9.0	-7.3	1.5	1.26E-04	1.1	2	2.1
0:00:49	18.0	5.4	13.0	-12.6	1.7	1.27E-04	1.1	2.5	2.8
0:00:00	0.0	24.1	-49.0	24.1	1.7				
0:00:04	5.0	18.8	4.0	13.8	1.8	4.61E-04	1.1	5	5.3
0:00:12	9.5	14.3	6.0	4.8	1.9	2.35E-04	1.0	4.5	4.5
0:00:19	12.0	11.7	7.0	-0.3	2.0	1.73E-04	1.0	2.5	2.6
0:00:27	14.0	9.5	8.0	-4.5	2.2	1.37E-04	1.1	2	2.2
0:00:35	15.5	7.8	8.0	-7.7	2.3	1.13E-04	1.1	1.5	1.7
0:00:43	17.0	6.4	8.0	-10.6	2.4	1.10E-04	0.9	1.5	1.4
0:00:00	0.0	24.0	-43.0	24.0	2.4				
0:00:04	5.0	18.8	4.0	13.8	2.5	4.57E-04	1.0	5	5.2
0:00:11	8.5	15.2	7.0	6.7	2.6	2.08E-04	1.0	3.5	3.6
0:00:18	11.0	12.6	7.0	1.6	2.7	1.66E-04	1.0	2.5	2.6
0:00:23	12.5	11.0	5.0	-1.5	2.8	1.53E-04	1.1	1.5	1.6
0:00:32	14.5	9.0	9.0	-5.5	2.9	1.18E-04	1.0	2	2
0:00:40	16.0	7.3	8.0	-8.7	3.1	1.16E-04	1.1	1.5	1.7
0:00:00	0.0	24.1	-40.0	24.1	3.1				
0:00:04	5.0	18.7	4.0	13.7	3.2	4.66E-04	1.1	5	5.4
0:00:10	8.5	15.3	6.0	6.8	3.3	2.36E-04	1.0	3.5	3.4
0:00:16	10.5	13.1	6.0	2.6	3.4	1.58E-04	1.1	2	2.2
0:00:23	12.5	10.8	7.0	-1.7	3.5	1.51E-04	1.2	2	2.3
0:00:29	14.0	9.2	6.0	-4.8	3.6	1.37E-04	1.1	1.5	1.6
0:00:36	15.5	7.5	7.0	-8.0	3.7	1.30E-04	1.1	1.5	1.7
0:00:00	0.0	24.0	-36.0	24.0	3.7				
0:00:04	5.0	18.6	4.0	13.6	3.8	4.67E-04	1.1	5	5.4
0:00:10	8.0	15.3	6.0	7.3	3.9	2.15E-04	1.1	3	3.3
0:00:15	10.5	12.9	5.0	2.4	4.0	2.21E-04	1.0	2.5	2.4
0:00:22	12.5	10.7	7.0	-1.8	4.1	1.48E-04	1.1	2	2.2
0:00:29	14.0	9.1	7.0	-4.9	4.2	1.18E-04	1.1	1.5	1.6
0:00:39	16.0	6.9	10.0	-9.1	4.4	1.21E-04	1.1	2	2.2



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

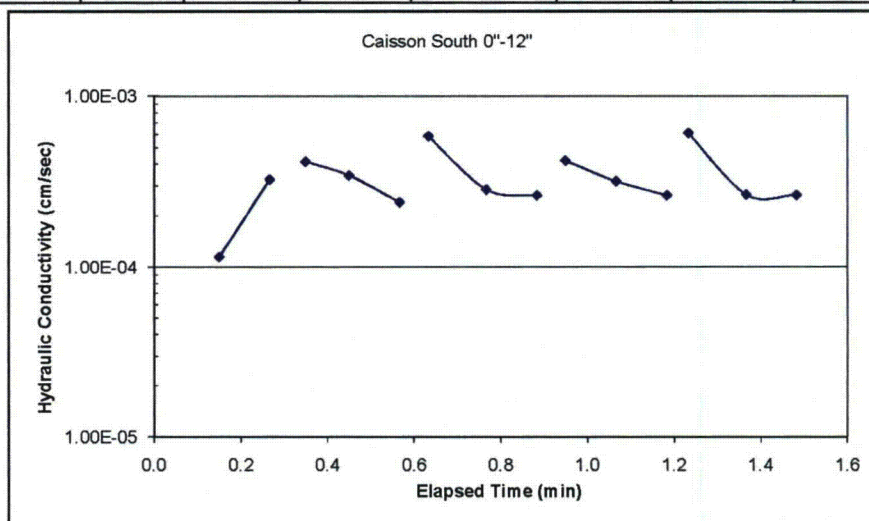
ASTM D 5084 - 00

Sample I.D.			305-mm Cassion South 0-30 cm		Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =		30.5	cm
Inflow Pressure =	41.5	psi	Length of Sample, L =		19.3	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =		729.66	cm ²
Pressure Difference =	1.5	psi	Sample Volume, V =		14085.3	cm ³
Effective Stress =	1.3	psi	a _{in} =		1	cm ²
Hydraulic Gradient, i =	5.5		a _{out} =		1	cm ²
Weight of wet sample =	25809.3	g	Sample Water Content =		25.55%	(%)
Wet Density =	1.8	g/cm ³	Dry Density =		1.83	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	50.93	353.86	292.22	25.55%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.3	0.0	24.3	0.0				
0:00:09	5.0	19.5	9.0	14.5	0.2	1.15E-04	1.0	5	4.8
0:00:16	15.0	10.5	7.0	-4.5	0.3	3.26E-04	0.9	10	9
0:00:00	0.0	23.6	-16.0	23.6	0.3				
0:00:03	6.0	18.0	3.0	12.0	0.4	4.15E-04	0.9	6	5.6
0:00:09	15.0	10.0	6.0	-5.0	0.5	3.45E-04	0.9	9	8
0:00:16	21.0	4.0	7.0	-17.0	0.6	2.40E-04	1.0	6	6
0:00:00	0.0	24.0	-16.0	24.0	0.6				
0:00:02	5.5	18.5	2.0	13.0	0.6	5.87E-04	1.0	5.5	5.5
0:00:10	15.5	9.7	8.0	-5.8	0.8	2.86E-04	0.9	10	8.8
0:00:17	22.0	3.2	7.0	-18.8	0.9	2.64E-04	1.0	6.5	6.5
0:00:00	0.0	24.4	-17.0	24.4	0.9				
0:00:03	6.0	18.6	3.0	12.6	1.0	4.20E-04	1.0	6	5.8
0:00:10	15.5	9.8	7.0	-5.7	1.1	3.18E-04	0.9	9.5	8.8
0:00:17	22.0	3.3	7.0	-18.7	1.2	2.64E-04	1.0	6.5	6.5
0:00:00	0.0	23.7	-17.0	23.7	1.2				
0:00:02	6.0	18.3	2.0	12.3	1.2	6.11E-04	0.9	6	5.4
0:00:10	15.0	9.8	8.0	-5.2	1.4	2.66E-04	0.9	9	8.5
0:00:17	21.5	3.2	7.0	-18.3	1.5	2.65E-04	1.0	6.5	6.6



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

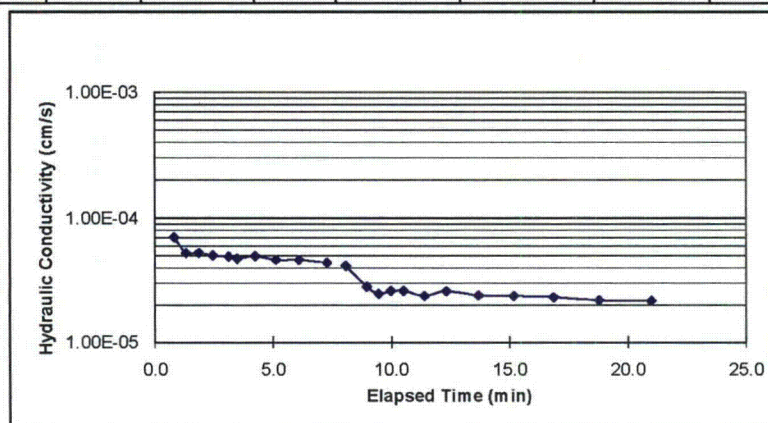
ASTM D 5084 - 00

Sample I.D.		150-mm Caisson South 0-30 cm		Test Date :	
Cell Pressure =	41.6	psi	Diameter of Sample, D =	15.2	cm
Inflow Pressure =	40.7	psi	Length of Sample, L =	8.9	cm
Outflow Pressre =	40.0	psi	Area of Sample, A =	182.41	cm ²
Pressure Difference =	0.7	psi	Sample Volume, V =	1621.7	cm ³
Effective Stress =	1.3	psi	a _{in} =	1	cm ²
Hydraulic Gradient, i =	5.5		a _{out} =	1	cm ²
Weight of wet sample =	3012.1	g	Sample Water Content =	24.70%	(%)
Wet Density =	1.9	g/cm ³	Dry Density =	1.85	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	30.81	161.79	135.85	24.70%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:48	5.0	19.5	48.0	14.5	0.8	7.05E-05	0.9	5	4.5
0:01:18	7.0	17.5	30.0	10.5	1.3	5.27E-05	1.0	2	2
0:01:50	9.0	15.5	32.0	6.5	1.8	5.28E-05	1.0	2	2
0:02:26	11.0	13.5	36.0	2.5	2.4	5.04E-05	1.0	2	2
0:03:06	13.0	11.5	40.0	-1.5	3.1	4.90E-05	1.0	2	2
0:03:28	14.0	10.5	22.0	-3.5	3.5	4.74E-05	1.0	1	1
0:04:13	16.0	8.5	45.0	-7.5	4.2	4.96E-05	1.0	2	2
0:05:06	18.0	6.5	53.0	-11.5	5.1	4.63E-05	1.0	2	2
0:06:05	20.0	4.5	59.0	-15.5	6.1	4.63E-05	1.0	2	2
0:07:15	22.0	2.5	70.0	-19.5	7.3	4.39E-05	1.0	2	2
0:00:00	0.0	24.0	-435.0	24.0	7.3				
0:00:45	3.0	21.6	45.0	18.6	8.1	4.15E-05	0.8	3	2.4
0:01:38	5.0	19.6	53.0	14.6	8.9	2.79E-05	1.0	2	2
0:02:08	6.0	18.7	30.0	12.7	9.4	2.45E-05	0.9	1	0.9
0:02:39	7.0	17.7	31.0	10.7	10.0	2.58E-05	1.0	1	1
0:03:11	8.0	16.7	32.0	8.7	10.5	2.58E-05	1.0	1	1
0:04:04	9.5	15.3	53.0	5.8	11.4	2.36E-05	0.9	1.5	1.4
0:04:59	11.0	13.7	55.0	2.7	12.3	2.57E-05	1.1	1.5	1.6
0:06:21	13.0	11.7	82.0	-1.3	13.7	2.38E-05	1.0	2	2
0:07:51	15.0	9.7	90.0	-5.3	15.2	2.36E-05	1.0	2	2
0:09:32	17.0	7.7	101.0	-9.3	16.8	2.30E-05	1.0	2	2
0:11:27	19.0	5.8	115.0	-13.2	18.8	2.18E-05	1.0	2	1.9
0:13:40	21.0	3.8	133.0	-17.2	21.0	2.16E-05	1.0	2	2



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

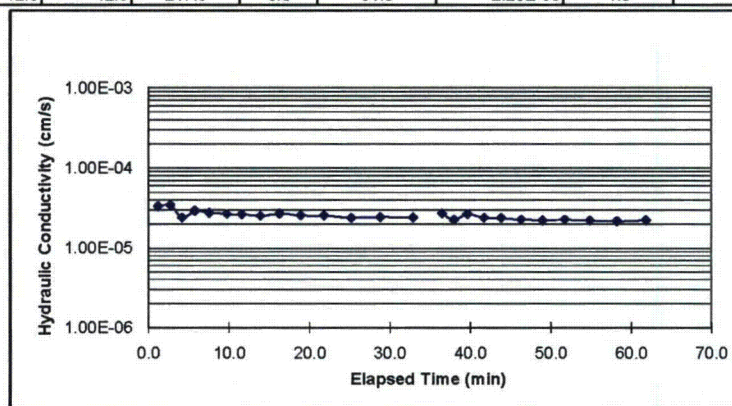
ASTM D 5084 - 00

Sample I.D. 75-mm Caisson South 0 - 30 cm				Test Date :	
Cell Pressure =	41.8	psi		Diameter of Sample, D =	7.0 cm
Inflow Pressure =	40.7	psi		Length of Sample, L =	4.1 cm
Outflow Pressure =	40.4	psi		Area of Sample, A =	38.32 cm ²
Pressure Difference =	0.3	psi		Sample Volume, V =	158.2 cm ³
Effective Stress =	1.3	psi		a _{in} =	1 cm ²
Hydraulic Gradient, i =	5.1			a _{out} =	1 cm ²
Weight of wet sample =	322.2	g		Sample Water Content =	25.79% (%)
Wet Density =	2.0	g/cm ³		Dry Density =	2.03 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
	25.36	130.36	108.83	25.79%

Date, Time	Inflow	Outflow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:01:13	1.0	23.0	73.0	22.0	1.2	3.35E-05	1.0	1	1
0:02:42	2.2	21.8	89.0	19.6	2.7	3.47E-05	1.0	1.2	1.2
0:04:11	3.0	21.0	89.0	18.0	4.2	2.43E-05	1.0	0.8	0.8
0:05:47	4.0	20.0	96.0	16.0	5.8	2.95E-05	1.0	1	1
0:07:34	5.0	19.0	107.0	14.0	7.6	2.79E-05	1.0	1	1
0:09:43	6.1	17.9	129.0	11.8	9.7	2.70E-05	1.0	1.1	1.1
0:11:36	7.0	17.0	113.0	10.0	11.6	2.68E-05	1.0	0.9	0.9
0:13:56	8.0	16.0	140.0	8.0	13.9	2.56E-05	1.0	1	1
0:16:17	9.0	15.0	141.0	6.0	16.3	2.72E-05	1.0	1	1
0:18:56	10.0	14.0	159.0	4.0	18.9	2.60E-05	1.0	1	1
0:21:50	11.0	13.0	174.0	2.0	21.8	2.57E-05	1.0	1	1
0:25:11	12.0	12.0	201.0	0.0	25.2	2.43E-05	1.0	1	1
0:28:49	13.0	11.0	218.0	-2.0	28.8	2.46E-05	1.0	1	1
0:32:53	14.0	10.0	244.0	-4.0	32.9	2.44E-05	1.0	1	1
0:00:00	0.0	24.0	-1973.0	24.0	32.9				
0:03:32	2.3	21.7	212.0	19.4	36.4	2.73E-05	1.0	2.3	2.3
0:05:01	3.0	20.9	89.0	17.9	37.9	2.28E-05	1.1	0.7	0.8
0:06:41	4.0	20.0	100.0	16.0	39.6	2.69E-05	0.9	1	0.9
0:08:44	5.0	19.0	123.0	14.0	41.6	2.43E-05	1.0	1	1
0:10:55	6.0	18.0	131.0	12.0	43.8	2.41E-05	1.0	1	1
0:13:21	7.0	17.0	146.0	10.0	46.3	2.30E-05	1.0	1	1
0:16:00	8.0	16.0	159.0	8.0	48.9	2.25E-05	1.0	1	1
0:18:47	9.0	15.0	167.0	6.0	51.7	2.30E-05	1.0	1	1
0:21:52	10.0	14.0	185.0	4.0	54.8	2.23E-05	1.0	1	1
0:25:16	11.0	13.0	204.0	2.0	58.2	2.19E-05	1.0	1	1
0:28:53	12.0	12.0	217.0	0.0	61.8	2.25E-05	1.0	1	1



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

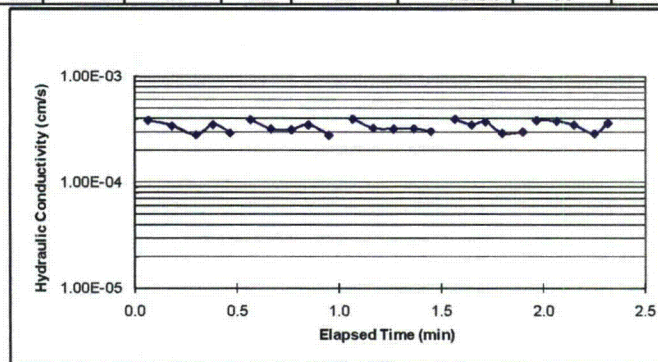
ASTM D 5084 - 00

Sample I.D. 305-mm Caisson South 20-60 cm			Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.0	psi	Length of Sample, L =	18.9 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	1.0	psi	Sample Volume, V =	13807.3 cm ³
Effective Stress =	1.5	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	3.7		a _{out} =	1 cm ²
Weight of wet sample =	19976.1	lb	Sample Water Content =	13.17% (%)
Wet Density =	1.4	g/cm ³	Dry Density =	1.44 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
	30.96	161.96	146.71	13.17%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.1	0.0	24.1	0.0				
0:00:04	5.0	18.5	4.0	13.5	0.1	3.88E-04	1.1	5	5.6
0:00:11	12.0	11.4	7.0	-0.6	0.2	3.41E-04	1.0	7	7.1
0:00:18	17.0	6.6	7.0	-10.4	0.3	2.81E-04	1.0	5	4.8
0:00:23	21.0	3.0	5.0	-18.0	0.4	3.52E-04	0.9	4	3.6
0:00:28	24.0	0.4	5.0	-23.6	0.5	2.94E-04	0.9	3	2.6
0:00:00	0.0	24.2	-28.0	24.2	0.5				
0:00:04	5.0	18.5	4.0	13.5	0.6	3.89E-04	1.1	5	5.7
0:00:10	10.5	12.5	6.0	2.0	0.7	3.19E-04	1.1	5.5	6
0:00:16	15.5	7.7	6.0	-7.8	0.8	3.15E-04	1.0	5	4.8
0:00:21	19.5	3.8	5.0	-15.7	0.9	3.50E-04	1.0	4	3.9
0:00:27	23.0	0.7	6.0	-22.3	1.0	2.78E-04	0.9	3.5	3.1
0:00:00	0.0	24.3	-27.0	24.3	1.0				
0:00:04	5.0	18.4	4.0	13.4	1.1	3.97E-04	1.2	5	5.9
0:00:10	10.5	12.2	6.0	1.7	1.2	3.25E-04	1.1	5.5	6.2
0:00:16	15.5	7.3	6.0	-8.2	1.3	3.20E-04	1.0	5	4.9
0:00:22	20.0	3.2	6.0	-16.8	1.4	3.22E-04	0.9	4.5	4.1
0:00:27	23.0	0.3	5.0	-22.7	1.5	3.03E-04	1.0	3	2.9
0:00:00	0.0	24.5	-27.0	24.5	1.5				
0:00:04	5.0	18.6	4.0	13.6	1.6	3.96E-04	1.2	5	5.9
0:00:09	10.0	13.0	5.0	3.0	1.7	3.50E-04	1.1	5	5.6
0:00:13	14.0	9.0	4.0	-5.0	1.7	3.74E-04	1.0	4	4
0:00:18	17.5	5.6	5.0	-11.9	1.8	2.89E-04	1.0	3.5	3.4
0:00:24	21.5	2.0	6.0	-19.5	1.9	3.01E-04	0.9	4	3.6
0:00:00	0.0	24.4	-24.0	24.4	1.9				
0:00:04	5.0	18.8	4.0	13.8	2.0	3.85E-04	1.1	5	5.6
0:00:10	11.5	11.8	6.0	0.3	2.1	3.78E-04	1.1	6.5	7
0:00:15	16.0	7.4	5.0	-8.6	2.2	3.49E-04	1.0	4.5	4.4
0:00:21	20.0	3.7	6.0	-16.3	2.3	2.88E-04	0.9	4	3.7
0:00:25	23.0	1.0	4.0	-22.0	2.3	3.61E-04	0.9	3	2.7
0:00:00	0.0	24.2	-25.0	24.2	2.3				
0:00:04	5.0	18.5	4.0	13.5	2.4	3.89E-04	1.1	5	5.7
0:00:09	10.0	13.0	5.0	3.0	2.5	3.47E-04	1.1	5	5.5
0:00:13	14.0	9.0	4.0	-5.0	2.5	3.74E-04	1.0	4	4
0:00:18	18.0	5.3	5.0	-12.7	2.6	3.25E-04	0.9	4	3.7
0:00:23	21.5	2.0	5.0	-19.5	2.7	3.26E-04	0.9	3.5	3.3



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

ASTM D 5084 - 00

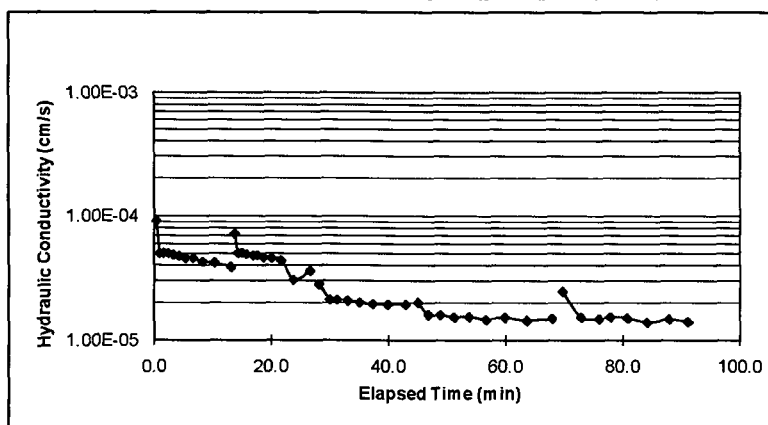
Sample I.D.			150-mm Caisson South 30-60 cm		Test Date :	
Cell Pressure =	41.7	psi	Diameter of Sample, D =		15.2	cm
Inflow Pressure =	40.5	psi	Length of Sample, L =		8.9	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =		182.41	cm ²
Pressure Difference =	0.5	psi	Sample Volume, V =		1621.7	cm ³
Effective Stress =	1.5	psi	a_{in} =		1	cm ²
Hydraulic Gradient, i =	4.0		a_{out} =		1	cm ²
Weight of wet sample =	2821.0	g	Sample Water Content =		27.11%	(%)
Wet Density =	1.7	g/cm ³	Dry Density =		1.73	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	25.09	203.07	165.11	27.11%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q_{out} / Q_{in}	Q_{in}	Q_{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:27	3.0	21.3	27.0	18.3	0.5	9.14E-05	0.9	3	2.7
0:01:05	5.0	19.3	38.0	14.3	1.1	4.99E-05	1.0	2	2
0:01:46	7.0	17.3	41.0	10.3	1.8	5.01E-05	1.0	2	2
0:02:32	9.0	15.2	46.0	6.2	2.5	5.01E-05	1.1	2	2.1
0:03:23	11.0	13.2	51.0	2.2	3.4	4.86E-05	1.0	2	2
0:04:21	13.0	11.2	58.0	-1.8	4.4	4.76E-05	1.0	2	2
0:05:29	15.0	9.2	68.0	-5.8	5.5	4.58E-05	1.0	2	2
0:06:47	17.0	7.2	78.0	-9.8	6.8	4.57E-05	1.0	2	2
0:08:25	19.0	5.2	98.0	-13.8	8.4	4.27E-05	1.0	2	2
0:10:26	21.0	3.2	121.0	-17.8	10.4	4.17E-05	1.0	2	2
0:13:11	23.0	1.2	165.0	-21.8	13.2	3.87E-05	1.0	2	2
0:00:00	0.0	24.0	-791.0	24.0	13.2				
0:00:36	3.0	21.0	36.0	18.0	13.8	7.24E-05	1.0	3	3
0:01:14	5.0	19.0	38.0	14.0	14.4	5.02E-05	1.0	2	2
0:01:55	7.0	17.0	41.0	10.0	15.1	5.04E-05	1.0	2	2
0:02:41	9.0	15.0	46.0	6.0	15.9	4.91E-05	1.0	2	2
0:03:48	11.5	12.4	67.0	0.9	17.0	4.81E-05	1.0	2.5	2.6
0:04:32	13.0	10.9	44.0	-2.1	17.7	4.81E-05	1.0	1.5	1.5
0:05:40	15.0	8.9	68.0	-6.1	18.9	4.62E-05	1.0	2	2
0:06:59	17.0	6.9	79.0	-10.1	20.2	4.57E-05	1.0	2	2
0:08:36	19.0	4.9	97.0	-14.1	21.8	4.37E-05	1.0	2	2
0:10:39	21.0	3.9	123.0	-17.1	23.9	3.04E-05	0.5	2	1
0:13:28	23.0	1.9	169.0	-21.1	26.7	3.61E-05	1.0	2	2
0:00:00	0.0	24.0	-808.0	24.0	26.7				
0:01:31	3.0	21.1	91.0	18.1	28.2	2.81E-05	1.0	3	2.9
0:03:22	5.5	18.7	111.0	13.2	30.1	2.12E-05	1.0	2.5	2.4
0:04:36	7.0	17.2	74.0	10.2	31.3	2.11E-05	1.0	1.5	1.5
0:06:24	9.0	15.2	108.0	6.2	33.1	2.08E-05	1.0	2	2
0:08:24	11.0	13.3	120.0	2.3	35.1	2.01E-05	0.9	2	1.9
0:10:41	13.0	11.4	137.0	-1.6	37.4	1.96E-05	1.0	2	1.9
0:13:16	15.0	9.5	155.0	-5.5	40.0	1.94E-05	1.0	2	1.9
0:16:18	17.0	7.5	182.0	-9.5	43.0	1.94E-05	1.0	2	2
0:00:00	0.0	24.0	-978.0	24.0	43.0				
0:02:07	3.1	21.2	127.0	18.1	45.1	2.02E-05	0.9	3.1	2.8
0:03:53	5.0	19.5	106.0	14.5	46.9	1.61E-05	0.9	1.9	1.7
0:05:57	7.0	17.6	124.0	10.6	49.0	1.61E-05	0.9	2	1.9
0:08:15	9.0	15.8	138.0	6.8	51.3	1.53E-05	0.9	2	1.8
0:10:48	11.0	13.9	153.0	2.9	53.8	1.55E-05	1.0	2	1.9
0:13:42	13.0	12.1	174.0	-0.9	56.7	1.47E-05	0.9	2	1.8
0:16:55	15.0	10.2	193.0	-4.8	59.9	1.53E-05	1.0	2	1.9
0:20:40	17.0	8.4	225.0	-8.6	63.7	1.45E-05	0.9	2	1.8
0:24:58	19.0	6.5	258.0	-12.5	68.0	1.50E-05	1.0	2	1.9
0:00:00	0.0	24.0	-1498.0	24.0	68.0				
0:01:46	3.0	21.0	106.0	18.0	69.8	2.46E-05	1.0	3	3

0:04:56	6.0	18.0	190.0	12.0	72.9	1.54E-05	1.0	3	3
0:07:59	8.5	15.5	183.0	7.0	76.0	1.49E-05	1.0	2.5	2.5
0:09:56	10.0	14.0	117.0	4.0	77.9	1.54E-05	1.0	1.5	1.5
0:12:50	12.0	12.0	174.0	0.0	80.8	1.51E-05	1.0	2	2
0:16:09	14.0	10.2	199.0	-3.8	84.2	1.40E-05	0.9	2	1.8
0:19:54	16.0	8.2	225.0	-7.8	87.9	1.48E-05	1.0	2	2
0:23:08	17.5	6.8	194.0	-10.7	91.1	1.41E-05	0.9	1.5	1.4



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

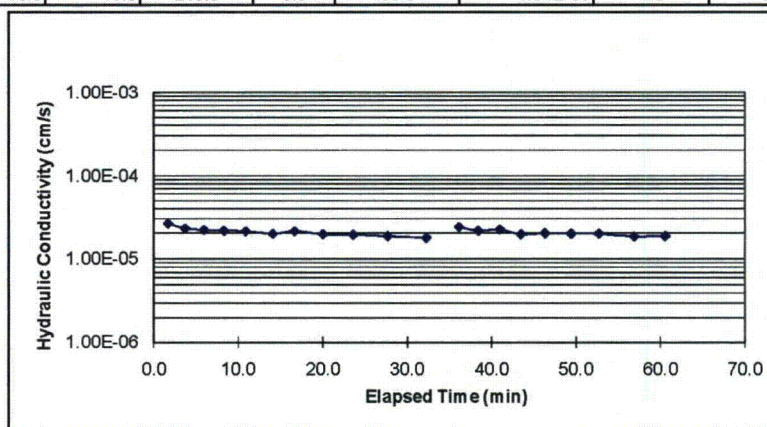
ASTM D 5084 - 00

Sample I.D.			75-mm Caisson South 30-60 cm			Test Date :		
Cell Pressure =	42.0	psi	Diameter of Sample, D =	7.0	cm			
Inflow Pressure =	40.7	psi	Length of Sample, L =	4.4	cm			
Outflow Pressure =	40.4	psi	Area of Sample, A =	38.32	cm ²			
Pressure Difference =	0.3	psi	Sample Volume, V =	170.3	cm ³			
Effective Stress =	1.5	psi	a _{in} =	1	cm ²			
Hydraulic Gradient, i =	4.7		a _{out} =	1	cm ²			
Weight of wet sample =	325.9	g	Sample Water Content =	25.81%	(%)			
Wet Density =	1.9	g/cm ³	Dry Density =	1.91	g/cm ³			

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	30.78	142.8	119.82	25.81%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:01:41	1.0	23.0	101.0	22.0	1.7	2.60E-05	1.0	1	1
0:03:42	2.0	22.0	121.0	20.0	3.7	2.28E-05	1.0	1	1
0:05:55	3.0	21.0	133.0	18.0	5.9	2.18E-05	1.0	1	1
0:08:18	4.0	20.0	143.0	16.0	8.3	2.13E-05	1.0	1	1
0:10:51	5.0	19.0	153.0	14.0	10.9	2.10E-05	1.0	1	1
0:14:03	6.1	17.9	192.0	11.8	14.1	1.96E-05	1.0	1.1	1.1
0:16:38	7.0	17.0	155.0	10.0	16.6	2.11E-05	1.0	0.9	0.9
0:19:58	8.0	16.0	200.0	8.0	20.0	1.93E-05	1.0	1	1
0:23:35	9.0	15.0	217.0	6.0	23.6	1.90E-05	1.0	1	1
0:27:38	10.0	14.0	243.0	4.0	27.6	1.83E-05	1.0	1	1
0:32:13	11.0	13.0	275.0	2.0	32.2	1.75E-05	1.0	1	1
0:00:00	0.0	24.0		24.0	32.2				
0:03:54	2.0	21.9	234.0	19.9	36.1	2.36E-05	1.1	2	2.1
0:06:10	3.0	20.9	136.0	17.9	38.4	2.13E-05	1.0	1	1
0:08:43	4.1	19.8	153.0	15.7	40.9	2.20E-05	1.0	1.1	1.1
0:11:14	5.0	18.9	151.0	13.9	43.4	1.93E-05	1.0	0.9	0.9
0:14:05	6.0	17.9	171.0	11.9	46.3	2.00E-05	1.0	1	1
0:17:10	7.0	16.9	185.0	9.9	49.4	1.96E-05	1.0	1	1
0:20:27	8.0	15.9	197.0	7.9	52.7	1.96E-05	1.0	1	1
0:24:40	9.1	14.8	253.0	5.7	56.9	1.81E-05	1.0	1.1	1.1
0:28:19	10.0	13.9	219.0	3.9	60.5	1.84E-05	1.0	0.9	0.9



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

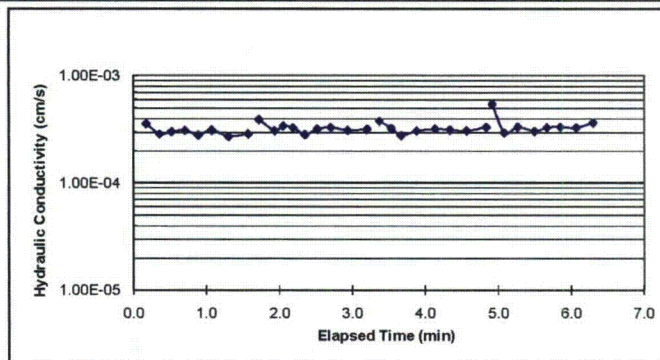
ASTM D 5084 - 00

Sample I.D. 150-mm Caisson South Radon			Test Date :		
Cell Pressure =	42.0	psi	Diameter of Sample, D =	15.2	cm
Inflow Pressure =	40.5	psi	Length of Sample, L =	9.5	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	182.41	cm ²
Pressure Difference =	0.5	psi	Sample Volume, V =	1737.5	cm ³
Effective Stress =	1.8	psi	a _{in} =	1	cm ²
Hydraulic Gradient, i =	3.7		a _{out} =	1	cm ²
Weight of wet sample =	3277.3	g	Sample Water Content =	12.19%	(%)
Wet Density =	1.9	g/cm ³	Dry Density =	1.88	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
	30.79	142.94	130.75	12.19%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:10	4.0	20.4	10.0	16.4	0.2	3.59E-04	0.9	4	3.6
0:00:21	7.0	17.5	11.0	10.5	0.4	2.88E-04	1.0	3	2.9
0:00:31	9.5	15.0	10.0	5.5	0.5	3.03E-04	1.0	2.5	2.5
0:00:42	12.0	12.5	11.0	0.5	0.7	3.11E-04	1.0	2.5	2.5
0:00:53	14.0	10.5	11.0	-3.5	0.9	2.82E-04	1.0	2	2
0:01:04	16.0	8.6	11.0	-7.4	1.1	3.12E-04	1.0	2	1.9
0:01:18	18.0	6.8	14.0	-11.2	1.3	2.74E-04	0.9	2	1.8
0:01:34	20.0	4.9	16.0	-15.1	1.6	2.90E-04	1.0	2	1.9
0:00:00	0.0	24.0	-94.0	24.0	1.6				
0:00:07	3.0	21.1	7.0	18.1	1.7	3.92E-04	1.0	3	2.9
0:00:20	7.0	17.5	13.0	10.5	1.9	3.09E-04	0.9	4	3.6
0:00:27	9.0	15.5	7.0	6.5	2.1	3.42E-04	1.0	2	2
0:00:35	11.0	13.5	8.0	2.5	2.2	3.29E-04	1.0	2	2
0:00:45	13.0	11.6	10.0	-1.4	2.4	2.85E-04	1.0	2	1.9
0:00:55	15.0	9.7	10.0	-5.3	2.5	3.20E-04	1.0	2	1.9
0:01:06	17.0	7.8	11.0	-9.2	2.7	3.32E-04	1.0	2	1.9
0:01:20	19.0	5.8	14.0	-13.2	2.9	3.12E-04	1.0	2	2
0:01:36	21.0	3.9	16.0	-17.1	3.2	3.19E-04	1.0	2	1.9
0:00:00	0.0	24.0	-96.0	24.0	3.2				
0:00:10	4.0	20.0	10.0	16.0	3.4	3.79E-04	1.0	4	4
0:00:20	7.0	17.0	10.0	10.0	3.5	3.26E-04	1.0	3	3
0:00:28	9.0	15.3	8.0	6.3	3.7	2.79E-04	0.9	2	1.7
0:00:41	12.0	12.4	13.0	0.4	3.9	3.08E-04	1.0	3	2.9
0:00:56	15.0	9.4	15.0	-5.6	4.1	3.22E-04	1.0	3	3
0:01:08	17.0	7.4	12.0	-9.6	4.3	3.16E-04	1.0	2	2
0:01:22	19.0	5.5	14.0	-13.5	4.6	3.09E-04	1.0	2	1.9
0:01:38	21.0	3.5	16.0	-17.5	4.8	3.33E-04	1.0	2	2
0:00:00	0.0	24.0	-98.0	24.0	4.8				
0:00:07	4.0	20.0	7.0	16.0	4.9	5.42E-04	1.0	4	4
0:00:17	7.0	17.5	10.0	10.5	5.1	2.97E-04	0.8	3	2.5
0:00:28	10.0	14.5	11.0	4.5	5.3	3.34E-04	1.0	3	3
0:00:42	13.0	11.5	14.0	-1.5	5.5	3.06E-04	1.0	3	3
0:00:52	15.0	9.5	10.0	-5.5	5.7	3.30E-04	1.0	2	2
0:01:03	17.0	7.6	11.0	-9.4	5.9	3.35E-04	1.0	2	1.9
0:01:16	19.0	5.7	13.0	-13.3	6.1	3.30E-04	1.0	2	1.9
0:01:30	21.0	3.8	14.0	-17.2	6.3	3.66E-04	1.0	2	1.9



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

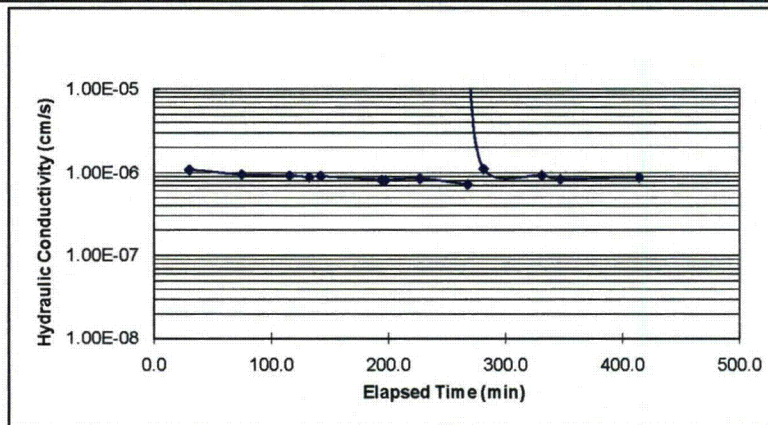
ASTM D 5084 - 00

Sample I.D.			150-mm Caisson South Radon		Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =		15.2	cm
Inflow Pressure =	40.5	psi	Length of Sample, L =		10.2	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =		182.41	cm ²
Pressure Difference =	0.5	psi	Sample Volume, V =		1853.3	cm ³
Effective Stress =	1.8	psi	a _{in} =		1	cm ²
Hydraulic Gradient, i =	3.5		a _{out} =		1	cm ²
Weight of wet sample =	4023.4	g	Sample Water Content =		12.87%	(%)
Wet Density =	2.2	g/cm ³	Dry Density =		2.17	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	25.03	114.9	104.65	12.87%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	2.0	23.3	0.0	21.3	0.0				
0:29:59	3.9	21.4	1799.0	17.5	30.0	1.08E-06	1.0	1.9	1.9
1:14:39	6.2	19.1	2680.0	12.9	74.7	9.50E-07	1.0	2.3	2.3
1:55:15	8.1	17.3	2436.0	9.2	115.3	9.16E-07	0.9	1.9	1.8
2:12:10	8.8	16.6	1015.0	7.8	132.2	8.80E-07	1.0	0.7	0.7
2:21:51	9.2	16.2	581.0	7.0	141.9	9.01E-07	1.0	0.4	0.4
3:14:13	11.1	14.4	3142.0	3.3	194.2	8.14E-07	0.9	1.9	1.8
3:17:13	11.2	14.3	180.0	3.1	197.2	8.07E-07	1.0	0.1	0.1
3:46:43	12.2	13.3	1770.0	1.1	226.7	8.45E-07	1.0	1	1
4:27:22	13.3	12.2	2439.0	-1.1	267.4	7.15E-07	1.0	1.1	1.1
0:00:00	0.0	24.0	-16042.0	24.0	267.4				
0:00:55	1.6	23.4	55.0	21.8	268.3	1.92E-05	0.4	1.6	0.6
0:13:39	2.5	22.6	764.0	20.1	281.1	1.10E-06	0.9	0.9	0.8
1:03:36	5.2	20.1	2997.0	14.9	331.0	9.18E-07	0.9	2.7	2.5
1:19:27	5.9	19.4	951.0	13.5	346.9	8.31E-07	1.0	0.7	0.7
2:26:28	8.8	16.5	4021.0	7.7	413.9	8.79E-07	1.0	2.9	2.9



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

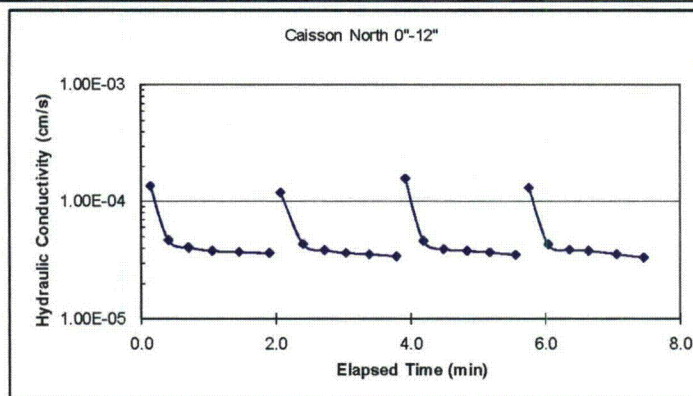
ASTM D 5084 - 00

Sample I.D.	305-mm Caisson North 0-30 cm		Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.5	psi	Length of Sample, L =	19.7 cm
Outflow Pressre =	40.0	psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	1.5	psi	Sample Volume, V =	14363.3 cm ³
Effective Stress =	1.3	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	5.4		a _{out} =	1 cm ²
Weight of wet sample =	23056.0	g	Sample Water Content =	12.88% (%)
Wet Density =	1.6	g/cm ³	Dry Density =	1.60 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta L} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	50.34	336.2	303.59	12.88%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.5	0.0	24.5	0.0				
0:00:08	5.5	20.0	8.0	14.5	0.1	1.35E-04	0.8	5.5	4.5
0:00:24	9.0	17.0	16.0	8.0	0.4	4.70E-05	0.9	3.5	3
0:00:42	12.0	14.0	18.0	2.0	0.7	4.07E-05	1.0	3	3
0:01:03	15.0	10.8	21.0	-4.2	1.1	3.82E-05	1.1	3	3.2
0:01:27	18.0	7.3	24.0	-10.7	1.5	3.73E-05	1.2	3	3.5
0:01:54	21.0	3.6	27.0	-17.4	1.9	3.66E-05	1.2	3	3.7
0:00:00	0.0	23.9	-114.0	23.9	1.9				
0:00:10	6.0	19.0	10.0	13.0	2.1	1.19E-04	0.8	6	4.9
0:00:30	10.0	15.6	20.0	5.6	2.4	4.35E-05	0.9	4	3.4
0:00:49	13.0	12.7	19.0	-0.3	2.7	3.87E-05	1.0	3	2.9
0:01:08	15.5	9.9	19.0	-5.6	3.0	3.67E-05	1.1	2.5	2.8
0:01:29	18.0	7.0	21.0	-11.0	3.4	3.57E-05	1.2	2.5	2.9
0:01:53	20.5	3.9	24.0	-16.6	3.8	3.43E-05	1.2	2.5	3.1
0:00:00	0.0	24.2	-113.0	24.2	3.8				
0:00:07	5.5	19.6	7.0	14.1	3.9	1.56E-04	0.8	5.5	4.6
0:00:23	9.0	16.7	16.0	7.7	4.2	4.64E-05	0.8	3.5	2.9
0:00:41	12.0	13.9	18.0	1.9	4.5	3.94E-05	0.9	3	2.8
0:01:02	15.0	10.7	21.0	-4.3	4.8	3.82E-05	1.1	3	3.2
0:01:22	17.5	7.8	20.0	-9.7	5.2	3.70E-05	1.2	2.5	2.9
0:01:45	20.0	4.7	23.0	-15.3	5.6	3.53E-05	1.2	2.5	3.1
0:00:00	0.0	24.1	-105.0	24.1	5.6				
0:00:09	6.0	19.3	9.0	13.3	5.8	1.30E-04	0.8	6	4.8
0:00:26	9.5	16.5	17.0	7.0	6.0	4.32E-05	0.8	3.5	2.8
0:00:45	12.5	13.5	19.0	1.0	6.4	3.89E-05	1.0	3	3
0:01:02	15.0	11.0	17.0	-4.0	6.6	3.82E-05	1.0	2.5	2.5
0:01:27	18.0	7.5	25.0	-10.5	7.1	3.57E-05	1.2	3	3.5
0:01:51	20.5	4.5	24.0	-16.0	7.5	3.35E-05	1.2	2.5	3



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

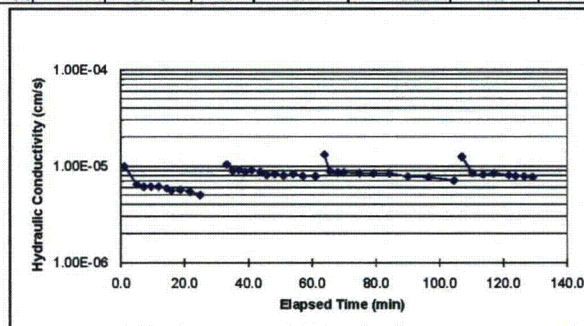
ASTM D 5084 - 00

Sample I.D. 150-mm Caisson North 0-30 cm			Test Date :	
Cell Pressure =	41.7	psi	Diameter of Sample, D =	15.2 cm
Inflow Pressure =	40.7	psi	Length of Sample, L =	9.3 cm
Outflow Pressure =	40.1	psi	Area of Sample, A =	182.41 cm ²
Pressure Difference =	0.6	psi	Sample Volume, V =	1691.2 cm ³
Effective Stress =	1.3	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	4.6		a _{out} =	1 cm ²
Weight of wet sample =	3157.4	g	Sample Water Content =	25.95% (%)
Wet Density =	1.9	g/cm ³	Dry Density =	1.86 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	30.89	200.1	165.24	25.95%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:01:06	1.0	23.3	66.0	22.3	1.1	1.00E-05	0.7	1	0.7
0:05:06	3.0	21.5	239.0	18.5	5.1	6.46E-06	0.9	2	1.8
0:07:17	4.0	20.6	132.0	16.6	7.3	6.12E-06	0.9	1	0.9
0:09:33	5.0	19.7	136.0	14.7	9.6	6.14E-06	0.9	1	0.9
0:11:54	6.0	18.8	141.0	12.8	11.9	6.12E-06	0.9	1	0.9
0:14:26	7.0	17.9	152.0	10.9	14.4	5.88E-06	0.9	1	0.9
0:15:53	7.5	17.4	87.0	9.9	15.9	5.55E-06	1.0	0.5	0.5
0:18:40	8.5	16.5	167.0	8.0	18.7	5.65E-06	0.9	1	0.9
0:21:41	9.5	15.6	181.0	6.1	21.7	5.42E-06	0.9	1	0.9
0:24:54	10.5	14.8	193.0	4.3	24.9	5.00E-06	0.8	1	0.8
0:24:54					24.9				
0:00:00	0.0	24.0	0.0	24.0	24.9				
0:08:27	6.5	18.0	507.0	11.5	33.4	1.05E-05	0.9	6.5	6
0:10:14	7.5	17.0	107.0	9.5	35.1	9.01E-06	1.0	1	1
0:12:08	8.5	15.9	114.0	7.4	37.0	9.24E-06	1.1	1	1.1
0:14:07	9.5	14.9	119.0	5.4	39.0	8.79E-06	1.0	1	1
0:16:13	10.5	13.8	126.0	3.3	41.1	9.10E-06	1.1	1	1.1
0:18:58	11.7	12.5	165.0	0.8	43.9	8.70E-06	1.1	1.2	1.3
0:20:56	12.5	11.7	119.0	-0.8	45.9	8.17E-06	1.0	0.8	0.8
0:23:27	13.5	10.7	151.0	-2.8	48.4	8.33E-06	1.0	1	1
0:26:12	14.5	9.7	165.0	-4.8	51.1	8.02E-06	1.0	1	1
0:28:09	15.5	8.6	177.0	-6.9	54.1	8.30E-06	1.1	1	1.1
0:32:17	16.5	7.6	188.0	-8.9	57.2	7.89E-06	1.0	1	1
0:36:09	17.6	6.4	232.0	-11.2	61.1	7.84E-06	1.1	1.1	1.2
0:00:00	0.0	24.0	-2169.0	24.0	61.1				
0:02:50	3.0	21.4	170.0	18.4	63.9	1.32E-05	0.9	3	2.6
0:04:26	4.0	20.4	96.0	16.4	65.5	8.89E-06	1.0	1	1
0:07:01	5.5	18.9	155.0	13.4	68.1	8.62E-06	1.0	1.5	1.5
0:08:49	6.5	17.9	108.0	11.4	69.9	8.62E-06	1.0	1	1
0:13:44	9.0	15.4	295.0	6.4	74.8	8.44E-06	1.0	2.5	2.5
0:18:11	11.0	13.3	267.0	2.3	79.3	8.39E-06	1.1	2	2.1
0:23:12	13.0	11.1	301.0	-1.9	84.3	8.37E-06	1.1	2	2.2
0:29:01	15.0	9.0	349.0	-6.0	90.1	7.81E-06	1.1	2	2.1
0:35:30	17.0	7.0	389.0	-10.0	96.6	7.65E-06	1.0	2	2
0:43:28	19.0	5.0	478.0	-14.0	104.6	7.05E-06	1.0	2	2
0:00:00	0.0	24.0	-2608.0	24.0	104.6				
0:02:26	2.5	21.9	146.0	19.4	107.0	1.25E-05	0.8	2.5	2.1
0:05:46	4.5	19.9	200.0	15.4	110.4	8.53E-06	1.0	2	2
0:09:06	6.3	18.1	200.0	11.8	113.7	8.20E-06	1.0	1.8	1.8
0:12:28	8.0	16.3	202.0	8.3	117.1	8.43E-06	1.1	1.7	1.8
0:17:09	10.1	14.1	281.0	4.0	121.8	8.05E-06	1.0	2.1	2.2
0:19:17	11.0	13.2	128.0	2.2	123.9	7.89E-06	1.0	0.9	0.9
0:21:55	12.0	12.1	158.0	0.1	126.5	7.79E-06	1.1	1	1.1
0:24:36	13.0	11.1	161.0	-1.9	129.2	7.65E-06	1.0	1	1



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

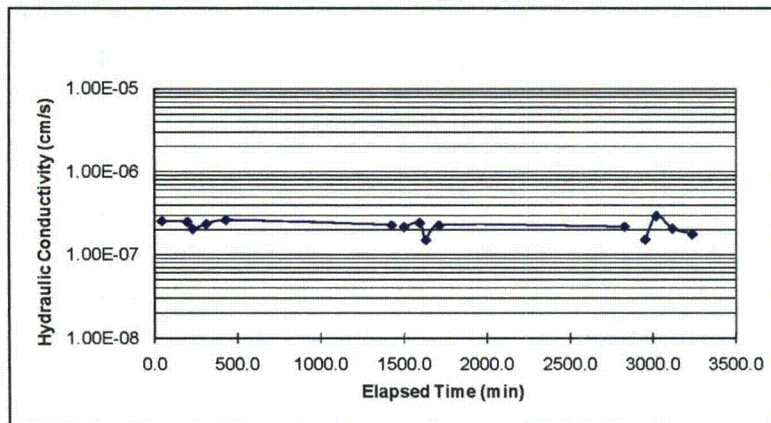
ASTM D 5084 - 00

Sample I.D.			75-mm Caisson North 0-30 cm		Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =		7.0	cm
Inflow Pressure =	40.8	psi	Length of Sample, L =		2.5	cm
Outflow Pressre =	40.6	psi	Area of Sample, A =		38.32	cm ²
Pressure Difference =	0.2	psi	Sample Volume, V =		97.3	cm ³
Effective Stress =	1.3	psi	a _{in} =		1	cm ²
Hydraulic Gradient, i =	5.5		a _{out} =		1	cm ²
Weight of wet sample =	210.1	g	Sample Water Content =		26.20%	(%)
Wet Density =	2.2	g/cm ³	Dry Density =		2.15	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	30.81	157.22	130.98	26.20%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:46:02	0.5	23.7	2762.0	23.2	46.0	2.55E-07	0.6	0.5	0.3
3:19:47	1.8	22.5	9225.0	20.7	199.8	2.49E-07	0.9	1.3	1.2
3:50:47	2.0	22.3	1860.0	20.3	230.8	2.06E-07	1.0	0.2	0.2
5:13:57	2.6	21.7	4990.0	19.1	314.0	2.36E-07	1.0	0.6	0.6
7:11:06	3.5	20.8	7029.0	17.3	431.1	2.63E-07	1.0	0.9	0.9
23:47:34	8.8	15.5	59788.0	6.7	1427.6	2.29E-07	1.0	5.3	5.3
0:00:00	8.9	15.5	-85654.0	6.6	1427.6				
1:15:08	9.2	15.2	4508.0	6.0	1502.7	2.17E-07	1.0	0.3	0.3
2:47:59	9.6	14.8	5571.0	5.2	1595.6	2.42E-07	1.0	0.4	0.4
3:26:13	9.7	14.7	2294.0	5.0	1633.8	1.51E-07	1.0	0.1	0.1
4:44:09	10.0	14.4	4676.0	4.4	1711.8	2.27E-07	1.0	0.3	0.3
23:22:14	13.3	11.1	67085.0	-2.2	2829.8	2.18E-07	1.0	3.3	3.3
0:00:00	13.3	11.1	-84134.0	-2.2	2829.8				
2:04:45	13.5	10.9	7485.0	-2.6	2954.6	1.52E-07	1.0	0.2	0.2
3:11:32	13.7	10.7	4007.0	-3.0	3021.3	2.94E-07	1.0	0.2	0.2
4:49:46	13.9	10.5	5894.0	-3.4	3119.6	2.07E-07	1.0	0.2	0.2
6:48:34	14.1	10.3	7128.0	-3.8	3238.4	1.78E-07	1.0	0.2	0.2



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

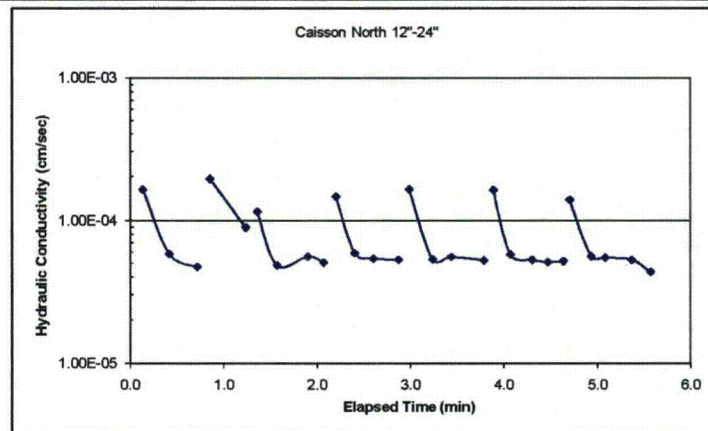
ASTM D 5084 - 00

Sample I.D. 305-mm Cassion North 30-60 cm			Test Date :		
Cell Pressure =	35.0	psi	Diameter of Sample, D =	30.5	cm
Inflow Pressure =	32.5	psi	Length of Sample, L =	20.3	cm
Outflow Pressre =	30.0	psi	Area of Sample, A =	729.66	cm ²
Pressure Difference =	2.5	psi	Sample Volume, V =	14826.7	cm ³
Effective Stress =	3.8	psi	a _{in} =	1	cm ²
Hydraulic Gradient, i =	8.7		a _{out} =	1	cm ²
Weight of wet sample =	21835.8	g	Sample Water Content =	17.92%	(%)
Wet Density =	1.5	g/cm ³	Dry Density =	1.47	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta L} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	50.78	337.5	293.92	17.92%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _n	Q _{in}	Q _{out}
0:00:00	0.0	24.5	0.0	24.5	0.0				
0:00:08	10.0	16.5	8.0	6.5	0.1	1.64E-04	0.8	10	8
0:00:25	19.0	13.0	17.0	-6.0	0.4	5.82E-05	0.4	9	3.5
0:00:43	25.0	9.0	18.0	-16.0	0.7	4.69E-05	0.7	6	4
0:00:00	0.0	24.0	0.0	24.0	0.7				
0:00:08	10.0	13.0	8.0	3.0	0.9	1.93E-04	1.1	10	11
0:00:31	22.4	0.8	23.0	-21.6	1.2	8.96E-05	1.0	12.4	12.2
0:00:00	0.0	24.1	-31.0	24.1	1.2				
0:00:10	8.0	17.0	9.5	9.0	1.4	1.15E-04	0.9	8	7.1
0:00:22	12.0	13.2	12.5	1.2	1.6	4.80E-05	1.0	4	3.8
0:00:42	19.0	6.6	20.0	-12.4	1.9	5.57E-05	0.9	7	6.6
0:00:52	22.0	3.8	10.0	-18.2	2.1	5.03E-05	0.9	3	2.8
0:00:00	0.0	24.1	-52.0	24.1	2.1				
0:00:06	6.5	18.4	6.0	11.9	2.2	1.46E-04	0.9	6.5	5.7
0:00:18	11.0	13.6	12.0	2.6	2.4	5.90E-05	1.1	4.5	4.8
0:00:30	15.0	9.5	12.0	-5.5	2.6	5.39E-05	1.0	4	4.1
0:00:46	20.0	4.5	16.0	-15.5	2.9	5.27E-05	1.0	5	5
0:00:00	0.0	24.1	-46.0	24.1	2.9				
0:00:05	6.0	18.7	5.0	12.7	3.0	1.64E-04	0.9	6	5.4
0:00:20	11.0	13.2	15.0	2.2	3.2	5.32E-05	1.1	5	5.5
0:00:32	15.0	8.9	12.0	-6.1	3.4	5.54E-05	1.1	4	4.3
0:00:53	21.5	2.5	21.0	-19.0	3.8	5.24E-05	1.0	6.5	6.4
0:00:00	0.0	24.0	-53.0	24.0	3.8				
0:00:05	6.0	18.7	5.0	12.7	3.9	1.62E-04	0.9	6	5.3
0:00:16	10.0	14.3	11.0	4.3	4.1	5.77E-05	1.1	4	4.4
0:00:30	14.5	9.5	14.0	-5.0	4.3	5.27E-05	1.1	4.5	4.8
0:00:40	17.5	6.4	10.0	-11.1	4.5	5.06E-05	1.0	3	3.1
0:00:50	20.5	3.4	10.0	-17.1	4.6	5.17E-05	1.0	3	3
0:00:00	0.0	24.1	-50.0	24.1	4.6				
0:00:06	6.0	18.5	6.0	12.5	4.7	1.39E-04	0.9	6	5.6
0:00:20	11.0	13.2	14.0	2.2	4.9	5.59E-05	1.1	5	5.3
0:00:29	14.0	10.0	9.0	-4.0	5.1	5.48E-05	1.1	3	3.2
0:00:46	19.5	4.8	17.0	-14.7	5.4	5.27E-05	0.9	5.5	5.2
0:00:58	22.5	1.9	12.0	-20.6	5.6	4.33E-05	1.0	3	2.9



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

ASTM D 5084 - 00

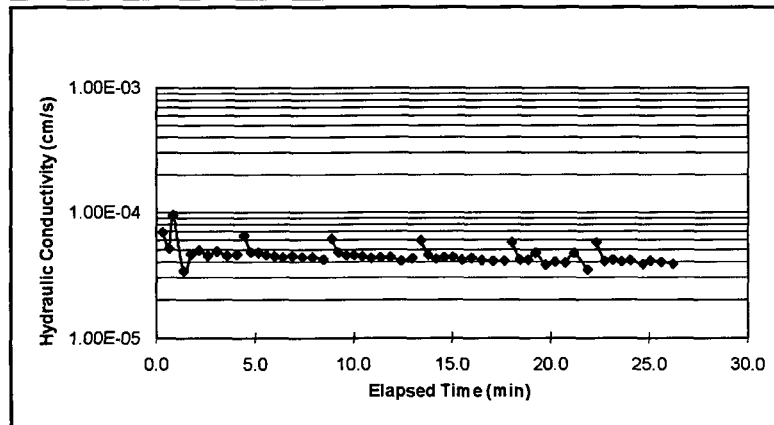
Sample I.D.	150-mm Caisson North 30-60 cm	Test Date :
Cell Pressure = 43.9 psi	Diameter of Sample, D = 15.2 cm	
Inflow Pressure = 40.7 psi	Length of Sample, L = 9.2 cm	
Outflow Pressure = 39.5 psi	Area of Sample, A = 182.41 cm ²	
Pressure Difference = 1.2 psi	Sample Volume, V = 1681.9 cm ³	
Effective Stress = 3.8 psi	a _{in} = 1 cm ²	
Hydraulic Gradient, i = 9.2	a _{out} = 1 cm ²	
Weight of wet sample = 3134.5 g	Sample Water Content = 21.53% (%)	
Wet Density = 1.9 g/cm ³	Dry Density = 1.86 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	25.87	176.58	149.88	21.53%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:20	3.0	21.2	20.0	18.2	0.3	6.95E-05	0.9	3	2.8
0:00:39	5.0	19.3	19.0	14.3	0.7	5.15E-05	0.9	2	1.9
0:00:50	7.0	17.3	11.0	10.3	0.8	9.51E-05	1.0	2	2
0:01:22	9.0	15.3	32.0	6.3	1.4	3.41E-05	1.0	2	2
0:01:46	11.0	13.4	24.0	2.4	1.8	4.63E-05	1.0	2	1.9
0:02:10	13.0	11.4	24.0	-1.6	2.2	4.97E-05	1.0	2	2
0:02:37	15.0	9.5	27.0	-5.5	2.6	4.52E-05	1.0	2	1.9
0:03:04	17.0	7.5	27.0	-9.5	3.1	4.87E-05	1.0	2	2
0:03:34	19.0	5.6	30.0	-13.4	3.6	4.51E-05	1.0	2	1.9
0:04:05	21.0	3.7	31.0	-17.3	4.1	4.61E-05	1.0	2	1.9
					4.1				
0:00:00	0.0	24.0	0.0	24.0	4.1				
0:00:22	3.0	21.0	22.0	18.0	4.5	6.54E-05	1.0	3	3
0:00:43	5.0	19.0	21.0	14.0	4.8	4.80E-05	1.0	2	2
0:01:05	7.0	17.0	22.0	10.0	5.2	4.77E-05	1.0	2	2
0:01:29	9.0	15.0	24.0	6.0	5.6	4.56E-05	1.0	2	2
0:01:54	11.0	13.1	25.0	2.1	6.0	4.46E-05	1.0	2	1.9
0:02:20	13.0	11.3	26.0	-1.7	6.4	4.37E-05	0.9	2	1.8
0:02:48	15.0	9.3	28.0	-5.7	6.9	4.47E-05	1.0	2	2
0:03:18	17.0	7.3	30.0	-9.7	7.4	4.39E-05	1.0	2	2
0:03:49	19.0	5.4	31.0	-13.6	7.9	4.37E-05	1.0	2	1.9
0:04:23	21.0	3.5	34.0	-17.5	8.5	4.21E-05	1.0	2	1.9
0:00:00	0.0	24.0	-263.0	24.0	8.5				
0:00:23	3.0	21.1	23.0	18.1	8.9	6.15E-05	1.0	3	2.9
0:00:44	5.0	19.1	21.0	14.1	9.2	4.79E-05	1.0	2	2
0:01:07	7.0	17.1	23.0	10.1	9.6	4.56E-05	1.0	2	2
0:01:31	9.0	15.1	24.0	6.1	10.0	4.55E-05	1.0	2	2
0:01:56	11.0	13.2	25.0	2.2	10.4	4.45E-05	1.0	2	1.9
0:02:23	13.0	11.3	27.0	-1.7	10.9	4.31E-05	0.9	2	1.9
0:02:51	15.0	9.4	28.0	-5.6	11.4	4.36E-05	1.0	2	1.9
0:03:21	17.0	7.4	30.0	-9.6	11.9	4.39E-05	1.0	2	2
0:03:54	19.0	5.5	33.0	-13.5	12.4	4.10E-05	1.0	2	1.9
0:04:28	21.0	3.5	34.0	-17.5	13.0	4.32E-05	1.0	2	2
0:00:00	0.0	24.0	-268.0	24.0	13.0				
0:00:24	3.0	21.0	24.0	18.0	13.4	6.00E-05	1.0	3	3
0:00:46	5.0	19.0	22.0	14.0	13.8	4.58E-05	1.0	2	2
0:01:10	7.0	17.1	24.0	10.1	14.2	4.26E-05	0.9	2	1.9
0:01:35	9.0	15.1	25.0	6.1	14.6	4.37E-05	1.0	2	2
0:02:01	11.0	13.1	26.0	2.1	15.0	4.39E-05	1.0	2	2
0:02:29	13.0	11.2	28.0	-1.8	15.5	4.16E-05	1.0	2	1.9
0:02:58	15.0	9.2	29.0	-5.8	16.0	4.33E-05	1.0	2	2
0:03:29	17.0	7.3	31.0	-9.7	16.5	4.15E-05	1.0	2	1.9
0:04:03	19.0	5.3	34.0	-13.7	17.1	4.09E-05	1.0	2	2
0:04:38	21.0	3.4	35.0	-17.6	17.6	4.10E-05	1.0	2	1.9

0:00:00	0.0	24.0	-278.0	24.0	17.6				
0:00:25	3.0	21.0	25.0	18.0	18.0	5.76E-05	1.0	3	3
0:00:49	5.0	19.0	24.0	14.0	18.4	4.20E-05	1.0	2	2
0:01:14	7.0	17.0	25.0	10.0	18.8	4.20E-05	1.0	2	2
0:01:37	9.0	15.0	23.0	6.0	19.2	4.76E-05	1.0	2	2
0:02:07	11.0	13.0	30.0	2.0	19.7	3.81E-05	1.0	2	2
0:02:36	13.0	11.1	29.0	-1.9	20.2	4.03E-05	1.0	2	1.9
0:03:07	15.0	9.2	31.0	-5.8	20.7	3.95E-05	1.0	2	1.9
0:03:35	17.0	7.2	28.0	-9.8	21.2	4.71E-05	1.0	2	2
0:04:15	19.0	5.2	40.0	-13.8	21.9	3.48E-05	1.0	2	2
0:00:00	0.0	24.0	-255.0	24.0	21.9				
0:00:25	3.0	21.0	25.0	18.0	22.3	5.76E-05	1.0	3	3
0:00:49	5.0	19.1	24.0	14.1	22.7	4.09E-05	0.9	2	1.9
0:01:14	7.0	17.1	25.0	10.1	23.1	4.19E-05	1.0	2	2
0:01:41	9.0	15.1	27.0	6.1	23.6	4.05E-05	1.0	2	2
0:02:08	11.0	13.2	27.0	2.2	24.0	4.12E-05	1.0	2	1.9
0:02:46	13.5	10.8	38.0	-2.7	24.7	3.87E-05	1.0	2.5	2.4
0:03:09	15.0	9.3	23.0	-5.7	25.1	4.11E-05	1.0	1.5	1.5
0:03:42	17.0	7.3	33.0	-9.7	25.6	4.00E-05	1.0	2	2
0:04:17	19.0	5.4	35.0	-13.6	26.2	3.87E-05	1.0	2	1.9



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

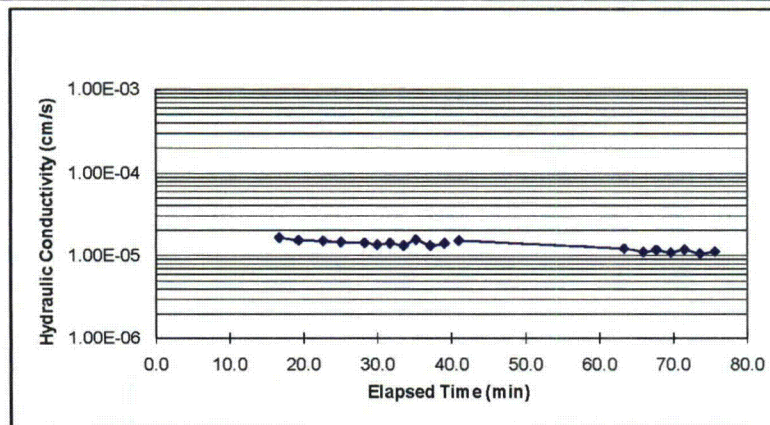
ASTM D 5084 - 00

Sample I.D.	75-mm Caisson North 30-60 cm	Test Date :
Cell Pressure = 44.0 psi	Diameter of Sample, D = 7.0 cm	
Inflow Pressure = 40.5 psi	Length of Sample, L = 4.4 cm	
Outflow Pressure = 39.9 psi	Area of Sample, A = 38.32 cm ²	
Pressure Difference = 0.6 psi	Sample Volume, V = 170.3 cm ³	
Effective Stress = 3.8 psi	a _{in} = 1 cm ²	
Hydraulic Gradient, i = 9.5	a _{out} = 1 cm ²	
Weight of wet sample = 333.8 g	Sample Water Content = 23.89% (%)	
Wet Density = 2.0 g/cm ³	Dry Density = 1.96 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	31.28	148.12	125.59	23.89%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:16:40	8.0	15.9	1000.0	7.9	16.7	1.62E-05	1.0	8	8.1
0:19:17	9.0	14.9	157.0	5.9	19.3	1.51E-05	1.0	1	1
0:22:38	10.2	13.7	201.0	3.5	22.6	1.48E-05	1.0	1.2	1.2
0:25:02	11.0	12.9	144.0	1.9	25.0	1.44E-05	1.0	0.8	0.8
0:28:13	12.0	11.9	191.0	-0.1	28.2	1.41E-05	1.0	1	1
0:29:57	12.5	11.4	104.0	-1.1	30.0	1.34E-05	1.0	0.5	0.5
0:31:39	13.0	10.9	102.0	-2.1	31.7	1.40E-05	1.0	0.5	0.5
0:33:31	13.5	10.4	112.0	-3.1	33.5	1.31E-05	1.0	0.5	0.5
0:35:09	14.0	9.9	98.0	-4.1	35.2	1.53E-05	1.0	0.5	0.5
0:37:07	14.5	9.4	118.0	-5.1	37.1	1.31E-05	1.0	0.5	0.5
0:39:01	15.0	8.9	114.0	-6.1	39.0	1.39E-05	1.0	0.5	0.5
0:00:00	0.0	24.0		24.0	39.0				
0:01:59	1.0	23.0	119.0	22.0	41.0	1.50E-05	1.0	1	1
0:24:20	8.8	15.2	1341.0	6.4	63.3	1.20E-05	1.0	7.8	7.8
0:26:55	9.5	14.5	155.0	5.0	65.9	1.09E-05	1.0	0.7	0.7
0:28:42	10.0	14.0	107.0	4.0	67.7	1.16E-05	1.0	0.5	0.5
0:30:39	10.5	13.5	117.0	3.0	69.7	1.08E-05	1.0	0.5	0.5
0:32:30	11.0	13.0	111.0	2.0	71.5	1.17E-05	1.0	0.5	0.5
0:34:36	11.5	12.5	126.0	1.0	73.6	1.05E-05	1.0	0.5	0.5
0:36:38	12.0	12.0	122.0	0.0	75.6	1.11E-05	1.0	0.5	0.5



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

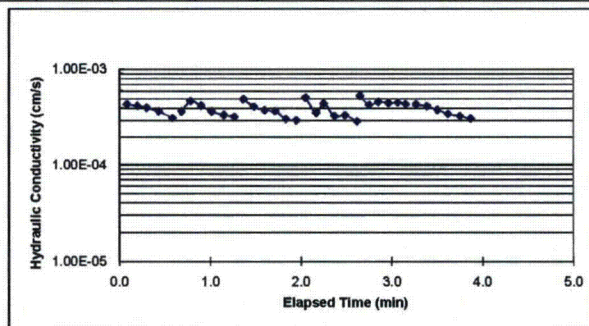
ASTM D 5084 - 00

Sample I.D. 305-mm Caisson North Radon			Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	40.6	psi	Length of Sample, L =	17.5 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	0.6	psi	Sample Volume, V =	12741.7 cm ³
Effective Stress =	1.7	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	2.4		a _{out} =	1 cm ²
Weight of wet sample =	22997.0	g	Sample Water Content =	16.28% (%)
Wet Density =	1.8	g/cm ³	Dry Density =	1.80 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	50.35	328.01	289.14	16.28%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	23.8	0.0	23.8	0.0				
0:00:05	5.0	17.8	5.0	12.8	0.1	4.38E-04	1.2	5	6
0:00:12	11.0	11.8	7.0	0.8	0.2	4.21E-04	1.0	6	6
0:00:18	15.0	7.9	6.0	-7.1	0.3	4.05E-04	1.0	4	3.9
0:00:26	19.0	4.2	8.0	-14.8	0.4	3.70E-04	0.9	4	3.7
0:00:35	22.0	1.4	9.0	-20.6	0.6	3.16E-04	0.9	3	2.8
0:00:00	0.0	24.0	-35.0	24.0	0.6				
0:00:05	4.5	19.0	5.0	14.5	0.7	3.71E-04	1.1	4.5	5
0:00:11	10.5	13.0	6.0	2.5	0.8	4.74E-04	1.0	6	6
0:00:18	15.5	8.2	7.0	-7.3	0.9	4.23E-04	1.0	5	4.8
0:00:25	19.0	4.9	7.0	-14.1	1.0	3.70E-04	0.9	3.5	3.3
0:00:33	22.0	2.2	8.0	-19.8	1.2	3.39E-04	0.9	3	2.7
0:00:40	24.0	0.3	7.0	-23.7	1.3	3.27E-04	1.0	2	1.9
0:00:00	0.0	24.1	-40.0	24.1	1.3				
0:00:04	4.5	18.5	4.0	14.0	1.4	4.94E-04	1.2	4.5	5.6
0:00:11	10.5	12.4	7.0	1.9	1.5	4.14E-04	1.0	6	6.1
0:00:18	15.0	8.1	7.0	-6.9	1.6	3.81E-04	1.0	4.5	4.3
0:00:25	18.5	4.7	7.0	-13.8	1.7	3.72E-04	1.0	3.5	3.4
0:00:32	21.0	2.5	7.0	-18.5	1.8	3.09E-04	0.9	2.5	2.2
0:00:39	23.0	0.7	7.0	-22.3	2.0	2.99E-04	0.9	2	1.8
0:00:00	0.0	24.0	-39.0	24.0	2.0				
0:00:03	3.5	19.5	3.0	16.0	2.1	5.14E-04	1.3	3.5	4.5
0:00:10	9.0	14.0	7.0	5.0	2.2	3.58E-04	1.0	5.5	5.5
0:00:15	13.0	10.0	5.0	-3.0	2.3	4.44E-04	1.0	4	4
0:00:22	16.5	6.6	7.0	-9.9	2.4	3.31E-04	1.0	3.5	3.4
0:00:29	19.5	3.8	7.0	-15.7	2.5	3.38E-04	0.9	3	2.8
0:00:37	22.0	1.6	8.0	-20.4	2.6	2.92E-04	0.9	2.5	2.2
0:00:00	0.0	24.1	-37.0	24.1	2.6				
0:00:03	4.0	19.8	3.0	15.8	2.7	5.33E-04	1.1	4	4.3
0:00:09	9.5	14.0	6.0	4.5	2.8	4.32E-04	1.1	5.5	5.8
0:00:15	14.5	9.3	6.0	-5.2	2.9	4.64E-04	0.9	5	4.7
0:00:22	19.0	5.2	7.0	-13.8	3.0	4.52E-04	0.9	4.5	4.1
0:00:28	22.0	2.4	6.0	-19.6	3.1	4.56E-04	0.9	3	2.8
0:00:33	24.0	0.6	5.0	-23.4	3.2	4.41E-04	0.9	2	1.8
0:00:00	0.0	24.0	-33.0	24.0	3.2				
0:00:04	4.0	19.0	4.0	15.0	3.3	4.37E-04	1.3	4	5
0:00:11	10.0	12.6	7.0	2.6	3.4	4.18E-04	1.1	6	6.4
0:00:18	14.5	8.1	7.0	-6.4	3.5	3.83E-04	1.0	4.5	4.5
0:00:25	18.0	5.0	7.0	-13.0	3.6	3.48E-04	0.9	3.5	3.1
0:00:33	21.0	2.2	8.0	-18.8	3.8	3.31E-04	0.9	3	2.8
0:00:40	23.0	0.3	7.0	-22.7	3.9	3.12E-04	1.0	2	1.9



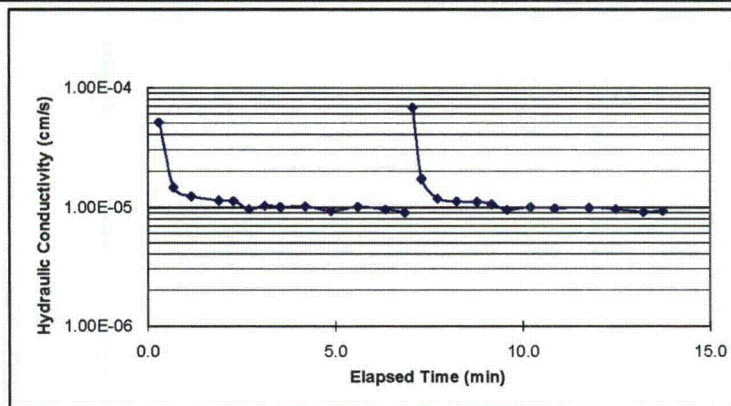
Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

Sample I.D. 305-mm Caisson North Radon				Test Date :			
Cell Pressure =	42.5	psi		Diameter of Sample, D =	30.5	cm	
Inflow Pressure =	41.5	psi		Length of Sample, L =	17.8	cm	
Outflow Pressure =	40.0	psi		Area of Sample, A =	729.66	cm ²	
Pressure Difference =	1.5	psi		Sample Volume, V =	12973.3	cm ³	
Effective Stress =	1.8	psi		a _{in} =	1	cm ²	
Hydraulic Gradient, i =	5.9			a _{out} =	1	cm ²	
Weight of wet sample =	26126.8	lb		Sample Water Content =	15.75%	(%)	
Wet Density =	2.0	g/cm ³		Dry Density =	2.01	g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
	50.37	360.26	318.09	15.75%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:18	6.0	20.7	18.0	14.7	0.3	5.04E-05	0.6	6	3.3
0:00:41	7.5	18.9	23.0	11.4	0.7	1.47E-05	1.2	1.5	1.8
0:01:10	9.0	17.0	29.0	8.0	1.2	1.24E-05	1.3	1.5	1.9
0:01:54	11.0	14.4	44.0	3.4	1.9	1.15E-05	1.3	2	2.6
0:02:17	12.0	13.1	23.0	1.1	2.3	1.13E-05	1.3	1	1.3
0:02:42	13.0	12.0	25.0	-1.0	2.7	9.70E-06	1.1	1	1.1
0:03:07	14.0	10.8	25.0	-3.2	3.1	1.04E-05	1.2	1	1.2
0:03:32	15.0	9.7	25.0	-5.3	3.5	1.01E-05	1.1	1	1.1
0:04:12	16.5	7.9	40.0	-8.6	4.2	1.02E-05	1.2	1.5	1.8
0:04:53	18.0	6.4	41.0	-11.6	4.9	9.35E-06	1.0	1.5	1.5
0:05:36	19.5	4.6	43.0	-14.9	5.6	1.01E-05	1.2	1.5	1.8
0:06:20	21.0	3.0	44.0	-18.0	6.3	9.64E-06	1.1	1.5	1.6
0:06:51	22.0	2.0	31.0	-20.0	6.9	9.09E-06	1.0	1	1
0:00:00	0.0	24.0	-411.0	24.0	6.9				
0:00:10	5.0	22.0	10.0	17.0	7.1	6.77E-05	0.4	5	2
0:00:24	6.5	21.1	14.0	14.6	7.3	1.72E-05	0.6	1.5	0.9
0:00:50	8.0	19.6	26.0	11.6	7.7	1.19E-05	1.0	1.5	1.5
0:01:20	9.5	17.9	30.0	8.4	8.2	1.13E-05	1.1	1.5	1.7
0:01:53	11.0	16.0	33.0	5.0	8.8	1.12E-05	1.3	1.5	1.9
0:02:16	12.0	14.8	23.0	2.8	9.2	1.07E-05	1.2	1	1.2
0:02:41	13.0	13.7	25.0	0.7	9.6	9.54E-06	1.1	1	1.1
0:03:18	14.5	12.0	37.0	-2.5	10.2	1.01E-05	1.1	1.5	1.7
0:03:57	16.0	10.3	39.0	-5.7	10.9	9.86E-06	1.1	1.5	1.7
0:04:52	18.0	7.9	55.0	-10.1	11.8	9.99E-06	1.2	2	2.4
0:05:35	19.5	6.2	43.0	-13.3	12.5	9.67E-06	1.1	1.5	1.7
0:06:19	21.0	4.7	44.0	-16.3	13.2	9.16E-06	1.0	1.5	1.5
0:06:50	22.0	3.6	31.0	-18.4	13.7	9.36E-06	1.1	1	1.1



Hydraulic Conductivity Test - Monticello - Store-and-Release Cover

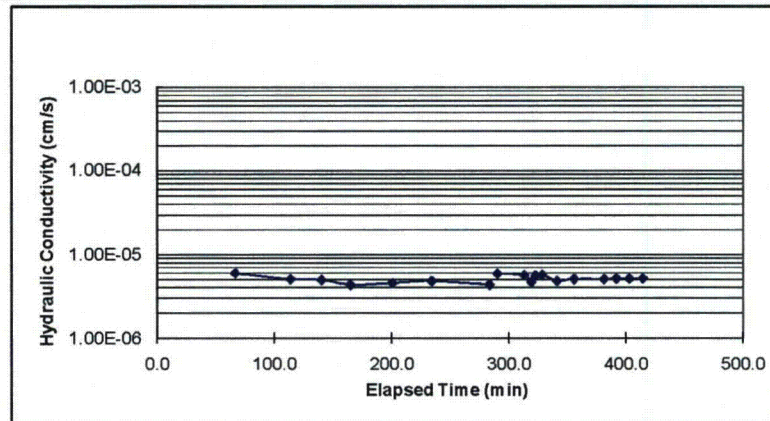
ASTM D 5084 - 00

Sample I.D.			75-mm Caisson North Radon		Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =		7.0	cm
Inflow Pressure =	40.3	psi	Length of Sample, L =		4.4	cm
Outflow Pressure =	40.1	psi	Area of Sample, A =		38.32	cm ²
Pressure Difference =	0.2	psi	Sample Volume, V =		170.3	cm ³
Effective Stress =	1.8	psi	a _{in} =		1	cm ²
Hydraulic Gradient, i =	3.2		a _{out} =		1	cm ²
Weight of wet sample =	340.8	g	Sample Water Content =		21.94%	(%)
Wet Density =	2.0	g/cm ³	Dry Density =		2.00	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
	30.76	128.57	110.97	21.94%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.0	0.0	24.0	0.0				
1:06:39	6.4	17.7	3999.0	11.3	66.7	5.89E-06	1.0	6.4	6.3
1:53:47	9.1	14.9	2828.0	5.8	113.8	5.01E-06	1.0	2.7	2.8
2:20:21	10.4	13.7	1594.0	3.3	140.4	4.89E-06	0.9	1.3	1.2
2:44:56	11.3	12.8	1475.0	1.5	164.9	4.30E-06	1.0	0.9	0.9
3:20:49	12.5	11.6	2153.0	-0.9	200.8	4.51E-06	1.0	1.2	1.2
3:54:21	13.5	10.6	2012.0	-2.9	234.4	4.75E-06	1.0	1	1
4:43:38	14.6	9.5	2957.0	-5.1	283.6	4.30E-06	1.0	1.1	1.1
0:00:00	0.0	24.0	-17018.0	24.0	283.6				
0:06:41	0.8	23.3	401.0	22.5	290.3	5.81E-06	0.9	0.8	0.7
0:29:48	3.1	21.0	1387.0	17.9	313.4	5.62E-06	1.0	2.3	2.3
0:35:48	3.6	20.6	360.0	17.0	319.4	4.60E-06	0.8	0.5	0.4
0:39:13	3.9	20.3	205.0	16.4	322.8	5.52E-06	1.0	0.3	0.3
0:44:58	4.4	19.8	345.0	15.4	328.6	5.61E-06	1.0	0.5	0.5
0:57:45	5.3	18.9	767.0	13.6	341.4	4.77E-06	1.0	0.9	0.9
1:12:09	6.3	17.9	864.0	11.6	355.8	5.04E-06	1.0	1	1
1:37:57	7.9	16.3	1548.0	8.4	381.6	4.99E-06	1.0	1.6	1.6
1:48:22	8.5	15.7	625.0	7.2	392.0	5.09E-06	1.0	0.6	0.6
1:59:26	9.1	15.1	664.0	6.0	403.0	5.07E-06	1.0	0.6	0.6
2:11:09	9.7	14.5	703.0	4.8	414.8	5.09E-06	1.0	0.6	0.6



Hydraulic Conductivity Test - Omaha - Composite Cover

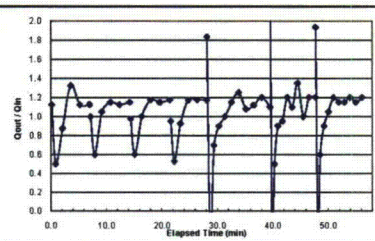
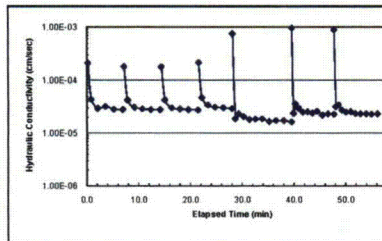
ASTM D 5084 - 00

Sample ID: 305-mm DCRDF C1 Below Membrane		Test Date: 7/3/08	
Cell Pressure = 42.7	psi	Diameter of Sample, D = 30.5	cm
Inflow Pressure = 42.4	psi	Length of Sample, L = 15.2	cm
Outflow Pressure = 40.0	psi	Area of Sample, A = 729.66	cm ²
Pressure Difference = 2.4	psi	Sample Volume, V = 11120.0	cm ³
Effective Stress = 1.5	psi	$a_{in} = 5$	cm ²
Hydraulic Gradient, i = 11.1		$a_{out} = 5$	cm ²
Weight of wet sample = 22150.0	g	Sample Water Content = 24.3%	(%)
Wet Density = 2.0	g/cm ³	Dry Density = 1.89	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
GC-2	30.79	119.7	102.32	24.30%

Date, Time	Inflow	Outflow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q_{avg} / Q_m	Q_m	Q_{out}
7/3/2008 00:00:00	0.0	24.8	0.0	24.8	0.0				
7/3/2008 00:11:00	4.0	20.3	11.0	16.3	0.2	2.13E-04	1.1	20	22.5
7/3/2008 00:50:00	8.0	19.3	39.0	10.3	0.8	4.40E-05	0.5	20	10
7/3/2008 02:05:00	12.0	14.8	75.0	2.8	2.1	2.97E-05	0.9	20	17.5
7/3/2008 03:35:00	16.0	9.5	90.0	-8.5	3.6	3.22E-05	1.3	20	26.5
7/3/2008 05:13:00	20.0	5.0	98.0	-15.0	5.2	2.88E-05	1.1	20	22.5
7/3/2008 06:58:00	24.0	0.5	105.0	-23.5	7.0	2.82E-05	1.1	20	22.5
7/3/2008 08:00:00	0.0	24.8	0.0	24.8	7.0				
7/3/2008 08:12:00	4.0	20.8	12.0	16.8	7.2	1.83E-04	1.0	20	20
7/3/2008 08:55:00	8.0	18.4	43.0	10.4	7.9	4.25E-05	0.6	20	12
7/3/2008 09:14:00	12.0	14.2	79.0	2.2	9.2	3.08E-05	1.1	20	21
7/3/2008 09:46:00	16.0	9.6	62.0	-6.4	10.7	2.92E-05	1.2	20	23
7/3/2008 09:55:00	20.0	5.1	100.0	-14.9	12.4	2.82E-05	1.1	20	22.5
7/3/2008 07:13:00	24.0	0.5	107.0	-23.5	14.2	2.80E-05	1.2	20	23
7/3/2008 08:00:00	0.0	24.8	0.0	24.8	14.2				
7/3/2008 08:12:00	4.0	20.9	12.0	16.9	14.4	1.81E-04	1.0	20	19.5
7/3/2008 08:55:00	8.0	18.5	43.0	10.5	15.1	4.25E-05	0.6	20	12
7/3/2008 09:13:00	12.0	14.5	78.0	2.5	16.4	3.05E-05	1.0	20	20
7/3/2008 09:47:00	16.0	9.8	64.0	-6.2	18.0	2.88E-05	1.2	20	23.5
7/3/2008 09:57:00	20.0	5.2	100.0	-14.8	19.6	2.83E-05	1.3	20	23
7/3/2008 07:16:00	24.0	0.5	109.0	-23.5	21.5	2.78E-05	1.2	20	23.5
7/3/2008 08:00:00	0.0	24.8	0.0	24.8	21.5				
7/3/2008 08:10:00	4.0	21.0	10.0	17.0	21.6	2.14E-04	1.0	20	19
7/3/2008 08:47:00	8.0	18.9	37.0	10.9	22.2	4.70E-05	0.5	20	10.5
7/3/2008 09:54:00	12.0	15.2	67.0	3.2	23.4	3.41E-05	0.9	20	18.5
7/3/2008 09:21:00	16.0	10.5	87.0	-5.5	24.8	3.11E-05	1.2	20	23.5
7/3/2008 09:55:00	20.0	5.8	94.0	-14.2	26.4	3.03E-05	1.2	20	23
7/3/2008 06:38:00	24.0	1.1	103.0	-22.9	28.1	2.93E-05	1.2	20	23.5
7/6/2008 08:00:00	0.0	24.4	0.0	24.4	28.1				
7/6/2008 08:03:14	3.0	18.9	3.1	15.9	28.1	7.47E-04	1.8	15	27.5
7/6/2008 08:36:55	6.0	19.7	33.4	13.7	28.7	1.87E-05	-0.3	15	-4
7/6/2008 09:18:68	8.0	18.3	42.1	10.3	29.4	2.33E-05	0.7	10	7
7/6/2008 09:12:78	10.0	16.5	54.1	6.5	30.3	2.07E-05	0.9	10	9
7/6/2008 09:18:58	12.0	14.5	65.8	2.5	31.4	1.83E-05	1.0	10	10
7/6/2008 09:30:23	14.0	12.2	71.7	-1.9	32.6	1.89E-05	1.2	10	11.5
7/6/2008 09:46:25	16.0	9.7	76.0	-6.3	33.9	1.87E-05	1.3	10	12.5
7/6/2008 07:07:06	18.0	7.5	80.8	-10.5	35.2	1.67E-05	1.1	10	10.8
7/6/2008 08:28:33	20.0	5.3	81.3	-14.7	36.8	1.74E-05	1.1	10	11.2
7/6/2008 09:56:02	22.0	2.9	87.7	-19.1	38.0	1.72E-05	1.2	10	12
7/6/2008 11:26:06	24.0	0.7	90.0	-23.3	39.5	1.65E-05	1.1	10	11
7/6/2008 08:00:00	0.0	24.9	0.0	24.9	39.5				
7/6/2008 09:02:18	3.0	18.3	2.3	15.3	39.6	9.53E-04	2.2	15	33
7/6/2008 09:23:05	6.0	19.6	20.3	13.6	39.9	2.39E-05	-0.4	15	-6.5
7/6/2008 09:47:14	8.0	18.6	24.1	10.6	40.3	3.59E-05	0.5	10	5
7/6/2008 09:24:95	10.0	16.8	37.8	6.8	40.9	2.95E-05	0.9	10	9
7/6/2008 09:11:62	12.0	14.9	47.0	2.9	41.7	2.49E-05	1.0	10	9.5
7/6/2008 09:04:61	14.0	12.5	52.7	-1.5	42.6	2.57E-05	1.2	10	12
7/6/2008 09:58:87	16.0	10.3	55.3	-5.7	43.5	2.40E-05	1.1	10	11
7/6/2008 09:58:56	18.0	7.8	59.7	-10.4	44.5	2.00E-05	1.4	10	13.5
7/6/2008 09:59:11	20.0	5.6	60.6	-14.4	45.5	2.70E-05	1.0	10	10
7/6/2008 07:03:65	22.0	3.2	64.5	-18.8	46.6	2.33E-05	1.2	10	12
7/6/2008 08:11:25	24.0	0.8	67.6	-23.2	47.7	2.29E-05	1.2	10	12
7/6/2008 08:00:00	0.0	24.8	0.0	24.8	47.7				
7/6/2008 08:02:73	3.0	19	2.7	16	47.8	8.88E-04	1.9	15	29
7/6/2008 08:24:21	6.0	19.6	21.5	13.6	48.1	3.17E-05	-0.2	15	-3
7/6/2008 08:50:95	8.0	18.4	26.7	10.4	48.6	3.42E-05	0.6	10	6
7/6/2008 09:31:75	10.0	16.6	40.8	6.6	49.2	2.74E-05	0.9	10	9
7/6/2008 09:20:25	12.0	14.5	48.5	2.5	50.0	2.54E-05	1.1	10	10.5
7/6/2008 09:13:33	14.0	12.1	53.1	-1.9	50.9	2.55E-05	1.2	10	12
7/6/2008 09:11:02	16.0	9.8	57.7	-6.2	51.9	2.38E-05	1.2	10	11.5
7/6/2008 09:10:87	18.0	7.5	59.9	-10.5	52.9	2.33E-05	1.2	10	11.5
7/6/2008 09:13:61	20.0	5.1	62.7	-14.9	53.9	2.34E-05	1.2	10	12
7/6/2008 07:17:56	22.0	2.8	64.0	-19.2	55.0	2.31E-05	1.2	10	11.5
7/6/2008 08:24:52	24.0	0.4	67.0	-23.6	56.1	2.32E-05	1.2	10	12



Hydraulic Conductivity Test - Omaha - Thin Store-and-Release Cover

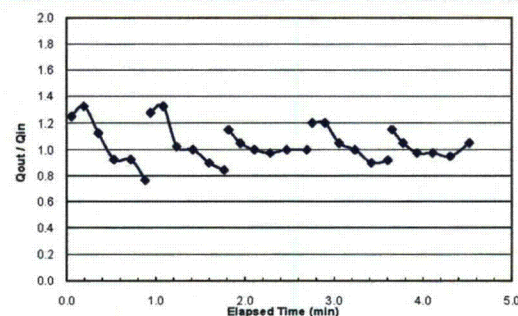
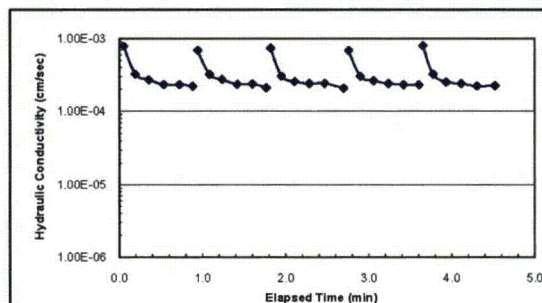
ASTM D 5084 - 00

Sample I.D.	305-mm DCRDF A-1 Shallow	Test Date :	7/9/08
Cell Pressure =	42.7 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	42.4 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	2.4 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	5 cm ²
Hydraulic Gradient, i =	11.1	a _{out} =	5 cm ²
Weight of wet sample =	21150.0 g	Sample Water Content =	24.7% (%)
Wet Density =	1.9 g/cm ³	Dry Density =	1.90 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left(\frac{\Delta H_1}{\Delta H_2} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
k7	30.8	141.98	119.95	24.71%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
7/9/2008 00:00:00	0.0	24.8	0.0	24.8	0.0				
7/9/2008 00:03:15	4.0	19.8	3.1	15.8	0.1	7.88E-04	1.3	20	25
7/9/2008 00:11:56	8.0	14.5	8.4	6.5	0.2	3.20E-04	1.3	20	26.5
7/9/2008 00:21:25	12.0	10.0	9.7	-2.0	0.4	2.67E-04	1.1	20	22.5
7/9/2008 00:31:92	16.0	6.3	10.7	-9.7	0.5	2.31E-04	0.9	20	18.5
7/9/2008 00:43:15	20.0	2.6	11.2	-17.4	0.7	2.30E-04	0.9	20	18.5
7/9/2008 00:52:75	23.4	0.0	9.6	-23.4	0.9	2.19E-04	0.8	17	13
7/9/2008 00:00:00	0.0	24.8	0.0	24.8	0.9				
7/9/2008 00:03:65	4.0	19.7	3.6	15.7	0.9	6.87E-04	1.3	20	25.5
7/9/2008 00:12:14	8.0	14.4	8.5	6.4	1.1	3.17E-04	1.3	20	26.5
7/9/2008 00:21:25	12.0	10.3	9.1	-1.7	1.2	2.71E-04	1.0	20	20.5
7/9/2008 00:32:28	16.0	6.3	11.0	-9.7	1.4	2.32E-04	1.0	20	20
7/9/2008 00:43:15	20.0	2.7	10.9	-17.3	1.6	2.35E-04	0.9	20	18
7/9/2008 00:53:06	23.2	0.0	9.9	-23.2	1.8	2.09E-04	0.8	16	13.5
7/9/2008 00:00:00	0.0	24.8	0.0	24.8	1.8				
7/9/2008 00:03:21	4.0	20.2	3.2	16.2	1.8	7.38E-04	1.2	20	23
7/9/2008 00:11:05	8.0	16.0	7.8	8.0	1.9	3.01E-04	1.1	20	21
7/9/2008 00:20:55	12.0	12.0	9.5	0.0	2.1	2.54E-04	1.0	20	20
7/9/2008 00:31:09	16.0	8.1	10.5	-7.9	2.3	2.37E-04	1.0	20	19.5
7/9/2008 00:42:18	20.0	4.1	11.1	-15.9	2.5	2.40E-04	1.0	20	20
7/9/2008 00:55:90	24.0	0.1	13.7	-23.9	2.7	2.04E-04	1.0	20	20
7/9/2008 00:00:00	0.0	24.8	0.0	24.8	2.7				
7/9/2008 00:03:56	4.0	20.0	3.6	16.0	2.8	6.81E-04	1.2	20	24
7/9/2008 00:12:05	8.0	15.2	8.5	7.2	2.9	2.99E-04	1.2	20	24
7/9/2008 00:21:64	12.0	11.0	9.6	-1.0	3.1	2.59E-04	1.1	20	21
7/9/2008 00:32:33	16.0	7.0	10.7	-9.0	3.2	2.38E-04	1.0	20	20
7/9/2008 00:43:46	20.0	3.4	11.1	-16.6	3.4	2.28E-04	0.9	20	18
7/9/2008 00:54:37	23.7	0.0	10.9	-23.7	3.6	2.28E-04	0.9	18.5	17
7/9/2008 00:00:00	0.0	24.8	0.0	24.8	3.6				
7/9/2008 00:02:96	4.0	20.2	3.0	16.2	3.7	8.00E-04	1.2	20	23
7/9/2008 00:10:36	8.0	16.0	7.4	8.0	3.8	3.19E-04	1.1	20	21
7/9/2008 00:19:87	12.0	12.1	9.5	0.1	3.9	2.50E-04	1.0	20	19.5
7/9/2008 00:30:42	16.0	8.2	10.5	-7.8	4.1	2.37E-04	1.0	20	19.5
7/9/2008 00:42:15	20.0	4.4	11.7	-15.6	4.3	2.21E-04	1.0	20	19
7/9/2008 00:55:06	24.0	0.2	12.9	-23.8	4.5	2.22E-04	1.1	20	21



Hydraulic Conductivity Test - Omaha - Thin Store-and-Release Cover

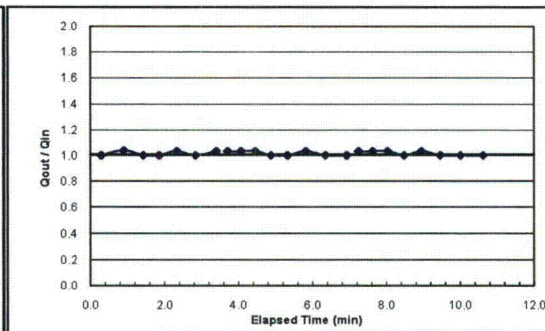
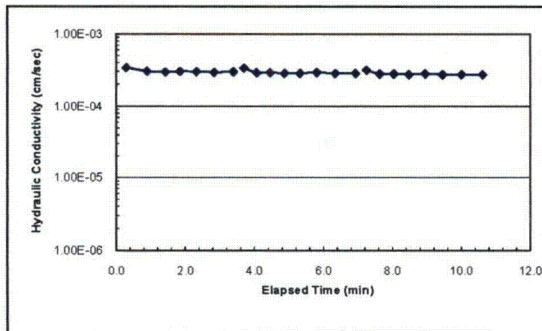
ASTM D 5084 - 00

Sample I.D.	150-mm Omaha DCRDF A1 Shallow 1	Test Date :	7/14/08
Cell Pressure =	42.7 psi	Diameter of Sample, D =	15.2 cm
Inflow Pressure =	41.8 psi	Length of Sample, L =	7.6 cm
Outflow Pressure =	40.6 psi	Area of Sample, A =	182.4 cm ²
Pressure Difference =	1.2 psi	Sample Volume, V =	1390.0 cm ³
Effective Stress =	1.50 psi	a _{in} =	5 cm ²
Hydraulic Gradient, i =	11.1	a _{out} =	5 cm ²
Weight of wet sample =	2366.8 (g)	Sample Water Content =	28.3% (%)
Wet Density =	1.7 g/cm ³	Dry Density =	1.70 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta L} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
B3	30.94	124.91	104.18	28.30%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
7/14/08 00:00.00	0.0	24.8	0.0	24.8	0.0				
7/14/08 00:17.42	3.0	21.8	17.4	18.8	0.3	3.39E-04	1.0	15	15
7/14/08 00:53.57	8.0	16.6	36.2	8.6	0.9	3.01E-04	1.0	25	26
7/14/08 01:25.55	12.0	12.6	32.0	0.6	1.4	2.94E-04	1.0	20	20
7/14/08 01:51.17	15.0	9.6	25.6	-5.4	1.9	2.98E-04	1.0	15	15
7/14/08 02:19.44	18.0	6.5	28.3	-11.5	2.3	2.97E-04	1.0	15	15.5
7/14/08 02:50.30	21.0	3.5	30.9	-17.5	2.8	2.91E-04	1.0	15	15
7/14/08 03:23.83	24.0	0.4	33.5	-23.6	3.4	2.98E-04	1.0	15	15.5
7/14/08 00:00.00	0.0	24.8	0.0	24.8	3.4				
7/14/08 00:17.99	3.0	21.7	18.0	18.7	3.7	3.34E-04	1.0	15	15.5
7/14/08 00:40.06	6.0	18.6	22.1	12.6	4.1	2.89E-04	1.0	15	15.5
7/14/08 01:03.54	9.0	15.5	23.5	6.5	4.5	2.89E-04	1.0	15	15.5
7/14/08 01:28.84	12.0	12.5	25.3	0.5	4.9	2.82E-04	1.0	15	15
7/14/08 01:55.94	15.0	9.5	27.1	-5.5	5.3	2.82E-04	1.0	15	15
7/14/08 02:25.08	18.0	6.4	29.1	-11.6	5.8	2.88E-04	1.0	15	15.5
7/14/08 02:57.10	21.0	3.4	32.0	-17.6	6.3	2.81E-04	1.0	15	15
7/14/08 03:31.99	24.0	0.4	34.9	-23.6	6.9	2.82E-04	1.0	15	15
7/14/08 00:00.00	0.0	24.8	0.0	24.8	6.9				
7/14/08 00:19.24	3.0	21.7	19.2	18.7	7.3	3.12E-04	1.0	15	15.5
7/14/08 00:42.34	6.0	18.6	23.1	12.6	7.6	2.76E-04	1.0	15	15.5
7/14/08 01:06.82	9.0	15.5	24.5	6.5	8.0	2.77E-04	1.0	15	15.5
7/14/08 01:33.00	12.0	12.5	26.2	0.5	8.5	2.72E-04	1.0	15	15
7/14/08 02:01.10	15.0	9.4	28.1	-5.6	8.9	2.77E-04	1.0	15	15.5
7/14/08 02:31.64	18.0	6.4	30.5	-11.6	9.5	2.71E-04	1.0	15	15
7/14/08 03:04.69	21.0	3.4	33.0	-17.6	10.0	2.72E-04	1.0	15	15
7/14/08 03:41.27	24.0	0.4	36.6	-23.6	10.6	2.69E-04	1.0	15	15



Hydraulic Conductivity Test - Omaha - Thin Store-and-Release Cover

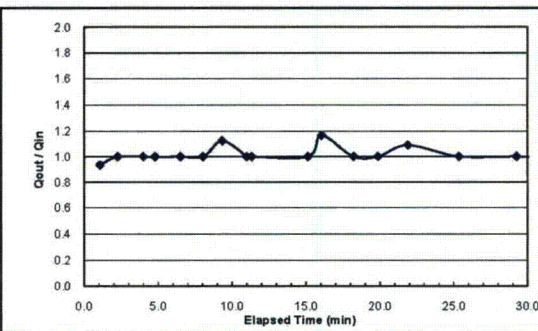
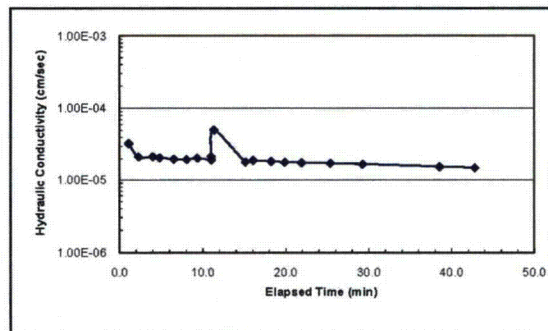
ASTM D 5084 - 00

Sample I.D.	75-mm Omaha DCRDF A1-Shallow 1	Test Date :	7/31/08
Cell Pressure = 38.1 psi		Diameter of Sample, D = 7.6 cm	
Inflow Pressure = 37.5 psi		Length of Sample, L = 3.8 cm	
Outflow Pressure = 37.0 psi		Area of Sample, A = 45.6 cm ²	
Pressure Difference = 0.5 psi		Sample Volume, V = 173.7 cm ³	
Effective Stress = 0.85 psi		a _{in} = 1 cm ²	
Hydraulic Gradient, i = 9.2		a _{out} = 1 cm ²	
Weight of wet sample = 279.9 (g)		Sample Water Content = -405.5% (%)	
Wet Density = 1.6 g/cm ³		Dry Density = 1.68 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left[\frac{(\Delta H_1)}{(\Delta H_2)} \right]$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
k7	30.78	124.8		-405.46%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
7/31/08 00:00.00	0.0	24.0	0.0	24.0	0.0				
7/31/08 01:04.56	1.5	22.6	64.6	21.1	1.1	3.25E-05	0.9	1.5	1.4
7/31/08 02:15.84	2.5	21.6	71.3	19.1	2.3	2.12E-05	1.0	1	1
7/31/08 03:59.87	3.9	20.2	104.0	16.3	4.0	2.13E-05	1.0	1.4	1.4
7/31/08 04:47.68	4.5	19.6	47.8	15.1	4.8	2.06E-05	1.0	0.6	0.6
7/31/08 06:31.33	5.7	18.4	103.6	12.7	6.5	1.97E-05	1.0	1.2	1.2
7/31/08 08:02.78	6.7	17.4	91.4	10.7	8.0	1.95E-05	1.0	1	1
7/31/08 09:20.50	7.5	16.5	77.7	9.0	9.3	2.03E-05	1.1	0.8	0.9
7/31/08 11:00.96	8.5	15.5	100.5	7.0	11.0	1.93E-05	1.0	1	1
7/31/08 00:00.00	0.0	24.0	-661.0	24.0	11.0	2.14E-05	1.0	-8.5	-8.5
7/31/08 00:19.95	0.7	23.3	19.9	22.6	11.3	5.01E-05	1.0	0.7	0.7
7/31/08 04:08.15	3.4	20.6	228.2	17.2	15.1	1.80E-05	1.0	2.7	2.7
7/31/08 05:03.65	4.0	19.9	55.5	15.9	16.1	1.89E-05	1.2	0.6	0.7
7/31/08 07:13.46	5.4	18.5	129.8	13.1	18.2	1.81E-05	1.0	1.4	1.4
7/31/08 08:52.55	6.4	17.5	99.1	11.1	19.9	1.78E-05	1.0	1	1
7/31/08 10:53.75	7.5	16.3	121.2	8.8	21.9	1.76E-05	1.1	1.1	1.2
7/31/08 14:21.73	9.3	14.5	208.0	5.2	25.4	1.72E-05	1.0	1.8	1.8
7/31/08 18:15.84	11.1	12.7	234.1	1.6	29.3	1.67E-05	1.0	1.8	1.8
7/31/08 27:31.15	14.5	9.3	555.3	-5.2	38.5	1.54E-05	1.0	3.4	3.4
7/31/08 31:47.83	15.8	8.0	256.7	-7.8	42.8	1.48E-05	1.0	1.3	1.3



Hydraulic Conductivity Test - Omaha - Thin Store-and-Release Cover

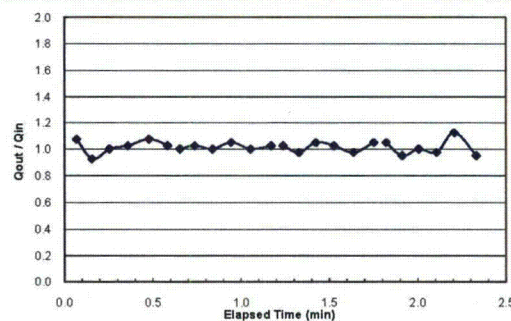
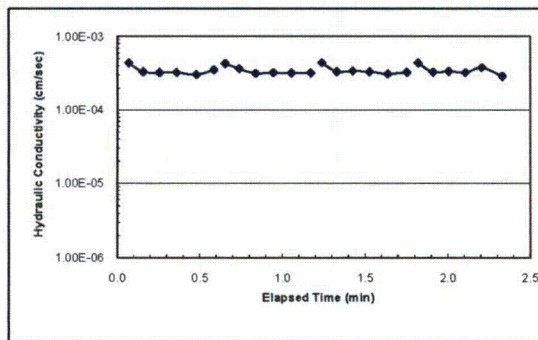
ASTM D 5084 - 00

Sample I.D.	305-mm DCRDF A01-BT2 (Top)	Test Date :	7/9/08
Cell Pressure =	42.7 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	42.4 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	2.4 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	4 cm ²
Hydraulic Gradient, i =	11.1	a _{out} =	4 cm ²
Weight of wet sample =	20900.0 g	Sample Water Content =	24.8% (%)
Wet Density =	1.9 g/cm ³	Dry Density =	1.87 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
B-3	30.87	165.59	138.85	24.76%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
7/14/2008 00:00:00	0.0	24.8	0.0	24.8	0.0				
7/14/2008 00:04:14	4.0	20.5	4.1	16.5	0.1	4.41E-04	1.1	16	17.2
7/14/2008 00:09:44	8.0	16.8	5.3	8.8	0.2	3.34E-04	0.9	16	14.8
7/14/2008 00:15:33	12.0	12.8	5.9	0.8	0.3	3.26E-04	1.0	16	16
7/14/2008 00:21:58	16.0	8.7	6.3	-7.3	0.4	3.26E-04	1.0	16	16.4
7/14/2008 00:28:76	20.0	4.4	7.2	-15.6	0.5	3.06E-04	1.1	16	17.2
7/14/2008 00:35:14	24.0	0.3	6.4	-23.7	0.6	3.55E-04	1.0	16	16.4
7/14/2008 00:00:00	0.0	24.8	0.0	24.8	0.6				
7/14/2008 00:04:08	4.0	20.8	4.1	16.8	0.7	4.31E-04	1.0	16	16
7/14/2008 00:09:14	8.0	16.7	5.1	8.7	0.7	3.68E-04	1.0	16	16.4
7/14/2008 00:15:19	12.0	12.7	6.0	0.7	0.8	3.18E-04	1.0	16	16
7/14/2008 00:21:53	16.0	8.5	6.3	-7.5	0.9	3.26E-04	1.1	16	16.8
7/14/2008 00:28:16	20.0	4.5	6.6	-15.5	1.1	3.20E-04	1.0	16	16
7/14/2008 00:35:15	24.0	0.4	7.0	-23.6	1.2	3.24E-04	1.0	16	16.4
7/14/2008 00:00:00	0.0	24.8	0.0	24.8	1.2				
7/14/2008 00:04:02	4.0	20.7	4.0	16.7	1.2	4.43E-04	1.0	16	16.4
7/14/2008 00:09:42	8.0	16.8	5.4	8.8	1.3	3.36E-04	1.0	16	15.6
7/14/2008 00:15:18	12.0	12.6	5.8	0.6	1.4	3.42E-04	1.1	16	16.8
7/14/2008 00:21:29	16.0	8.5	6.1	-7.5	1.5	3.34E-04	1.0	16	16.4
7/14/2008 00:27:98	20.0	4.6	6.7	-15.4	1.6	3.13E-04	1.0	16	15.6
7/14/2008 00:34:92	24.0	0.4	6.9	-23.6	1.8	3.30E-04	1.1	16	16.8
7/14/2008 00:00:00	0.0	24.8	0.0	24.8	1.8				
7/14/2008 00:04:12	4.0	20.6	4.1	16.6	1.8	4.38E-04	1.1	16	16.8
7/14/2008 00:09:54	8.0	16.8	5.4	8.8	1.9	3.31E-04	1.0	16	15.2
7/14/2008 00:15:21	12.0	12.8	5.7	0.8	2.0	3.39E-04	1.0	16	16
7/14/2008 00:21:31	16.0	8.9	6.1	-7.1	2.1	3.26E-04	1.0	16	15.6
7/14/2008 00:27:25	20.0	4.4	5.9	-15.6	2.2	3.79E-04	1.1	16	18
7/14/2008 00:34:79	24.0	0.6	7.5	-23.4	2.3	2.89E-04	1.0	16	15.2



Hydraulic Conductivity Test - Omaha - Thin Store-and-Release Cover

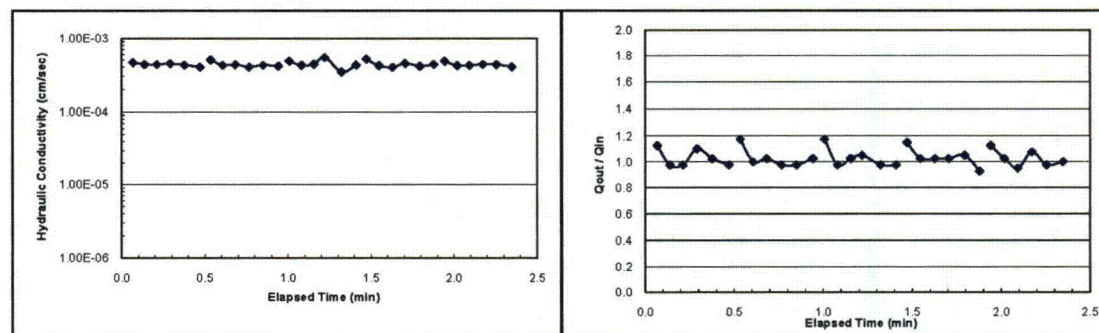
ASTM D 5084 - 00

Sample I.D. 305-mm DCRDF A01- (Top)			Test Date : 7/21/08	
Cell Pressure =	42.7	psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	42.4	psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	2.4	psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5	psi	a _{in} =	4 cm ²
Hydraulic Gradient, i =	11.1		a _{out} =	4 cm ²
Weight of wet sample =	19900.0	g	Sample Water Content =	24.2% (%)
Wet Density =	1.8	g/cm ³	Dry Density =	1.79 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left(\frac{\Delta H_1}{\Delta H_2} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
k7	30.85	153	129.17	24.24%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
7/21/2008 00:00:00	0.0	24.7	0.0	24.7	0.0				
7/21/2008 00:04:08	4.0	20.2	4.1	16.2	0.1	4.59E-04	1.1	16	18
7/21/2008 00:08:29	8.0	16.3	4.2	8.3	0.1	4.32E-04	1.0	16	15.6
7/21/2008 00:12:70	12.0	12.4	4.4	0.4	0.2	4.31E-04	1.0	16	15.6
7/21/2008 00:17:50	16.0	8.0	4.8	-8.0	0.3	4.42E-04	1.1	16	17.6
7/21/2008 00:22:60	20.0	3.9	5.1	-16.1	0.4	4.22E-04	1.0	16	16.4
7/21/2008 00:28:18	24.0	0.0	5.6	-24.0	0.5	3.97E-04	1.0	16	15.6
7/21/2008 00:00:00	0.0	24.8	0.0	24.8	0.5				
7/21/2008 00:03:85	4.0	20.1	3.8	16.1	0.5	4.98E-04	1.2	16	18.8
7/21/2008 00:08:21	8.0	16.1	4.4	8.1	0.6	4.23E-04	1.0	16	16
7/21/2008 00:12:77	12.0	12.0	4.6	0.0	0.7	4.28E-04	1.0	16	16.4
7/21/2008 00:17:79	16.0	8.1	5.0	-7.9	0.8	3.98E-04	1.0	16	15.6
7/21/2008 00:22:76	20.0	4.2	5.0	-15.8	0.8	4.22E-04	1.0	16	15.6
7/21/2008 00:28:31	24.0	0.1	5.5	-23.9	0.9	4.08E-04	1.0	16	16.4
7/21/2008 00:00:00	0.0	24.8	0.0	24.8	0.9				
7/21/2008 00:04:01	4.0	20.1	4.0	16.1	1.0	4.78E-04	1.2	16	18.8
7/21/2008 00:08:36	8.0	16.2	4.3	8.2	1.1	4.18E-04	1.0	16	15.6
7/21/2008 00:12:84	12.0	12.1	4.5	0.1	1.2	4.36E-04	1.0	16	16.4
7/21/2008 00:16:67	16.0	7.9	3.8	-8.1	1.2	5.42E-04	1.1	16	16.8
7/21/2008 00:22:86	20.0	4.0	6.2	-16.0	1.3	3.39E-04	1.0	16	15.6
7/21/2008 00:28:08	24.0	0.1	5.2	-23.9	1.4	4.24E-04	1.0	16	15.6
7/21/2008 00:00:00	0.0	24.8	0.0	24.8	1.4				
7/21/2008 00:03:69	4.0	20.2	3.7	16.2	1.5	5.13E-04	1.2	16	18.4
7/21/2008 00:08:19	8.0	16.1	4.5	8.1	1.5	4.15E-04	1.0	16	16.4
7/21/2008 00:13:15	12.0	12.0	5.0	0.0	1.6	3.94E-04	1.0	16	16.4
7/21/2008 00:17:74	16.0	7.9	4.6	-8.1	1.7	4.47E-04	1.0	16	16.4
7/21/2008 00:23:09	20.0	3.7	5.3	-16.3	1.8	4.08E-04	1.1	16	16.8
7/21/2008 00:28:10	24.0	0.0	5.0	-24.0	1.9	4.31E-04	0.9	16	14.8
7/21/2008 00:00:00	0.0	24.8	0.0	24.8	1.9				
7/21/2008 00:03:91	4.0	20.3	3.9	16.3	1.9	4.79E-04	1.1	16	18
7/21/2008 00:08:41	8.0	16.2	4.5	8.2	2.0	4.15E-04	1.0	16	16.4
7/21/2008 00:12:88	12.0	12.4	4.5	0.4	2.1	4.20E-04	1.0	16	15.2
7/21/2008 00:17:72	16.0	8.1	4.8	-7.9	2.2	4.33E-04	1.1	16	17.2
7/21/2008 00:22:62	20.0	4.2	4.9	-15.8	2.3	4.28E-04	1.0	16	15.6
7/21/2008 00:28:19	24.0	0.2	5.6	-23.8	2.3	4.02E-04	1.0	16	16



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

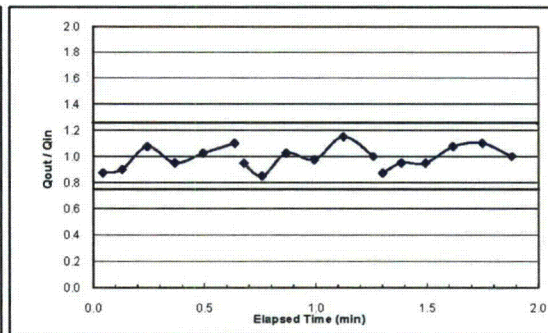
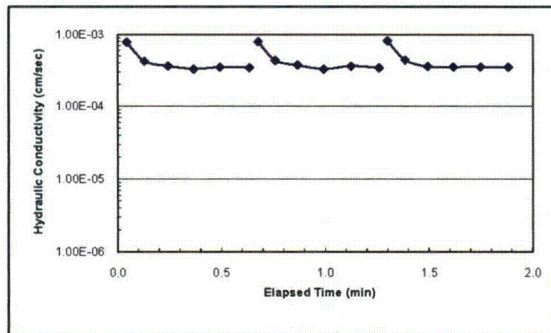
ASTM D 5084 - 00

Sample I.D.		305-mm DCRDF AO2-S1 Deep		Test Date :		5/30/08	
Cell Pressure =	42.7	psi	Diameter of Sample, D =	30.5	cm		
Inflow Pressure =	42.4	psi	Length of Sample, L =	15.2	cm		
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66	cm ²		
Pressure Difference =	2.4	psi	Sample Volume, V =	11120.0	cm ³		
Effective Stress =	1.5	psi	a _{in} =	5	cm ²		
Hydraulic Gradient, i =	11.1		a _{out} =	5	cm ²		
Weight of wet sample =	19800.0	g	Sample Water Content =	24.9%	(%)		
Wet Density =	1.8	g/cm ³	Dry Density =	1.78	g/cm ³		

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
X3	30.4	107.1	91.8	24.92%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
5/30/2008 00:00.00	0.0	24.5	0.0	24.5	0.0				
5/30/2008 00:02.64	4.0	21.0	2.6	17.0	0.0	7.81E-04	0.9	20	17.5
5/30/2008 00:07.78	8.0	17.4	5.1	9.4	0.1	4.23E-04	0.9	20	18
5/30/2008 00:14.64	12.0	13.1	6.9	1.1	0.2	3.62E-04	1.1	20	21.5
5/30/2008 00:22.05	16.0	9.3	7.4	-6.7	0.4	3.30E-04	1.0	20	19
5/30/2008 00:29.68	20.0	5.2	7.6	-14.8	0.5	3.50E-04	1.0	20	20.5
5/30/2008 00:38.14	24.0	0.8	8.5	-23.2	0.6	3.45E-04	1.1	20	22
5/30/2008 00:00.00	0.2	24.6	0.0	24.4	0.6				
5/30/2008 00:02.55	4.0	21.0	2.5	17.0	0.7	7.98E-04	0.9	19	18
5/30/2008 00:07.43	8.0	17.6	4.9	9.6	0.8	4.34E-04	0.9	20	17
5/30/2008 00:13.93	12.0	13.5	6.5	1.5	0.9	3.73E-04	1.0	20	20.5
5/30/2008 00:21.45	16.0	9.6	7.5	-6.4	1.0	3.29E-04	1.0	20	19.5
5/30/2008 00:29.28	20.0	5.0	7.8	-15.0	1.1	3.62E-04	1.2	20	23
5/30/2008 00:37.43	24.0	1.0	8.2	-23.0	1.3	3.41E-04	1.0	20	20
5/30/2008 00:00.00	0.1	24.4	0.0	24.3	1.3				
5/30/2008 00:02.46	4.0	21.0	2.5	17.0	1.3	8.16E-04	0.9	19.5	17
5/30/2008 00:07.52	8.0	17.2	5.1	9.2	1.4	4.42E-04	1.0	20	19
5/30/2008 00:14.06	12.0	13.4	6.5	1.4	1.5	3.57E-04	1.0	20	19
5/30/2008 00:21.46	16.0	9.1	7.4	-6.9	1.6	3.52E-04	1.1	20	21.5
5/30/2008 00:29.33	20.0	4.7	7.9	-15.3	1.7	3.53E-04	1.1	20	22
5/30/2008 00:37.34	24.0	0.7	8.0	-23.3	1.9	3.48E-04	1.0	20	20



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

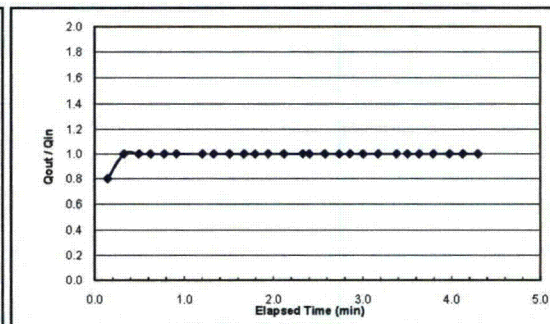
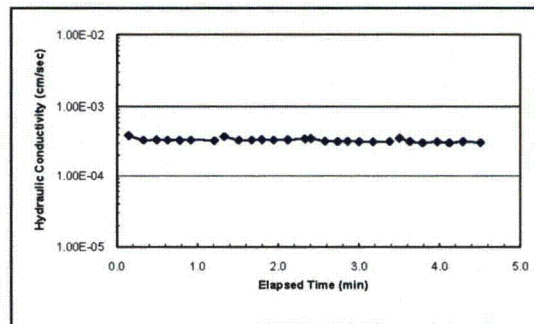
ASTM D 5084 - 00

Sample I.D.	150-mm Omaha DCRDF AO2-S1-Deep		Test Date :	7/15/08	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	15.2	cm
Inflow Pressure =	40.5	psi	Length of Sample, L =	6.4	cm
Outflow Pressure =	40.1	psi	Area of Sample, A =	181.5	cm ²
Pressure Difference =	0.4	psi	Sample Volume, V =	1161.3	cm ³
Effective Stress =	1.70	psi	a _{in} =	1	cm ²
Hydraulic Gradient, i =	4.4		a _{out} =	1	cm ²
Weight of wet sample =	2126.1	(g)	Sample Water Content =	30.0%	(%)
Wet Density =	1.8	g/cm ³	Dry Density =	1.83	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
H1	30.9	139.39	114.35	30.01%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
7/22/08 00:00:00	0.0	24.0	0.0	24.0	0.0				
7/22/08 00:08:68	5.0	20.0	8.7	15.0	0.1	3.85E-04	0.8	5	4
7/22/08 00:19:65	9.0	16.0	11.0	7.0	0.3	3.30E-04	1.0	4	4
7/22/08 00:29:56	12.0	13.0	9.9	1.0	0.5	3.33E-04	1.0	3	3
7/22/08 00:37:46	14.0	11.0	7.9	-3.0	0.6	3.30E-04	1.0	2	2
7/22/08 00:46:75	16.0	9.0	9.3	-7.0	0.8	3.29E-04	1.0	2	2
7/22/08 00:54:87	17.5	7.5	8.1	-10.0	0.9	3.33E-04	1.0	1.5	1.5
7/22/08 01:12:37	20.0	5.0	17.5	-15.0	1.2	3.25E-04	1.0	2.5	2.5
7/22/08 00:00:00	0.0	24.0	0.0	24.0	1.2				
7/22/08 00:07:87	4.0	20.0	7.9	16.0	1.3	3.73E-04	1.0	4	4
7/22/08 00:18:56	8.0	16.0	10.7	8.0	1.5	3.30E-04	1.0	4	4
7/22/08 00:28:25	11.0	13.0	9.7	2.0	1.7	3.30E-04	1.0	3	3
7/22/08 00:35:73	13.0	11.0	7.5	-2.0	1.8	3.36E-04	1.0	2	2
7/22/08 00:44:56	15.0	9.0	8.8	-6.0	1.9	3.32E-04	1.0	2	2
7/22/08 00:55:06	17.0	7.0	10.5	-10.0	2.1	3.35E-04	1.0	2	2
7/22/08 01:07:83	19.0	5.0	12.8	-14.0	2.3	3.44E-04	1.0	2	2
7/22/08 00:00:00	0.0	24.0	-67.8	24.0	2.3				
7/22/08 00:06:18	3.0	21.0	6.2	18.0	2.4	3.49E-04	1.0	3	3
7/22/08 00:16:65	7.0	17.0	10.5	10.0	2.6	3.21E-04	1.0	4	4
7/22/08 00:26:21	10.0	14.0	9.6	4.0	2.7	3.16E-04	1.0	3	3
7/22/08 00:33:59	12.0	12.0	7.4	0.0	2.9	3.18E-04	1.0	2	2
7/22/08 00:42:21	14.0	10.0	8.6	-4.0	3.0	3.14E-04	1.0	2	2
7/22/08 00:52:43	16.0	8.0	10.2	-8.0	3.2	3.13E-04	1.0	2	2
7/22/08 01:04:84	18.0	6.0	12.4	-12.0	3.4	3.15E-04	1.0	2	2
7/22/08 00:00:00	0.0	24.0	-64.8	24.0	3.4				
7/22/08 00:06:15	3.0	21.0	6.1	18.0	3.5	3.51E-04	1.0	3	3
7/22/08 00:13:93	6.0	18.0	7.8	12.0	3.6	3.16E-04	1.0	3	3
00:23.4	9.0	15.0	9.5	6.0	3.8	3.02E-04	1.0	3	3
00:34.3	12.0	12.0	10.9	0.0	4.0	3.12E-04	1.0	3	3
00:43.3	14.0	10.0	9.0	-4.0	4.1	3.01E-04	1.0	2	2
00:53.5	16.0	8.0	10.2	-8.0	4.3	3.13E-04	1.0	2	2
01:06.4	18.0	6.0	12.9	-12.0	4.5	3.03E-04	1.0	2	2



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

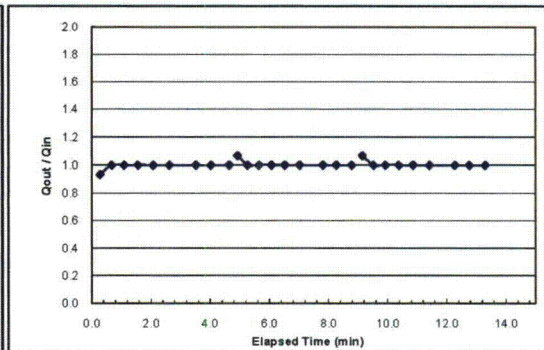
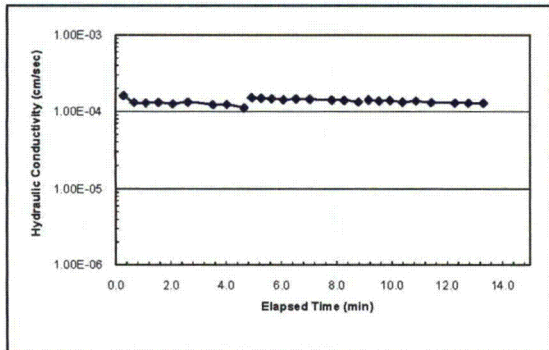
ASTM D 5084 - 00

Sample I.D.	75-mm Omaha DCRDF AO2 S1 Deep	Test Date :	7/15/08
Cell Pressure =	42.1 psi	Diameter of Sample, D =	7.0 cm
Inflow Pressure =	40.3 psi	Length of Sample, L =	3.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	38.3 cm ²
Pressure Difference =	0.3 psi	Sample Volume, V =	121.7 cm ³
Effective Stress =	1.95 psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	6.6	a _{out} =	1 cm ²
Weight of wet sample =	198.1 (g)	Sample Water Content =	-466.6% (%)
Wet Density =	1.6 g/cm ³	Dry Density =	1.71 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
h3	24.42	113.94		-466.58%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
8/1/08 00:00.00	0.0	24.0	0.0	24.0	0.0				
8/1/08 00:17.05	1.5	22.6	17.0	21.1	0.3	1.61E-04	0.9	1.5	1.4
8/1/08 00:40.45	3.0	21.1	23.4	18.1	0.7	1.31E-04	1.0	1.5	1.5
8/1/08 01:05.95	4.5	19.6	25.5	15.1	1.1	1.29E-04	1.0	1.5	1.5
8/1/08 01:33.37	6.0	18.1	27.4	12.1	1.6	1.31E-04	1.0	1.5	1.5
8/1/08 02:04.65	7.5	16.6	31.3	9.1	2.1	1.25E-04	1.0	1.5	1.5
8/1/08 02:37.46	9.0	15.1	32.8	6.1	2.6	1.32E-04	1.0	1.5	1.5
8/1/08 03:31.15	11.0	13.1	53.7	2.1	3.5	1.23E-04	1.0	2	2
8/1/08 04:01.65	12.0	12.1	30.5	0.1	4.0	1.22E-04	1.0	1	1
8/1/08 04:38.65	13.0	11.1	37.0	-1.9	4.6	1.11E-04	1.0	1	1
8/1/08 00:00.00	0.0	24.0	-278.6	24.0	4.6				
8/1/08 00:19.46	1.5	22.4	19.5	20.9	4.9	1.52E-04	1.1	1.5	1.6
8/1/08 00:40.27	3.0	20.9	20.8	17.9	5.3	1.48E-04	1.0	1.5	1.5
8/1/08 01:02.90	4.5	19.4	22.6	14.9	5.6	1.47E-04	1.0	1.5	1.5
8/1/08 01:28.28	6.0	17.9	25.4	11.9	6.1	1.42E-04	1.0	1.5	1.5
8/1/08 01:55.46	7.5	16.4	27.2	8.9	6.5	1.45E-04	1.0	1.5	1.5
8/1/08 02:25.73	9.0	14.9	30.3	5.9	7.0	1.44E-04	1.0	1.5	1.5
8/1/08 03:12.95	11.0	12.9	47.2	1.9	7.8	1.41E-04	1.0	2	2
8/1/08 03:39.92	12.0	11.9	27.0	-0.1	8.3	1.40E-04	1.0	1	1
8/1/08 04:11.11	13.0	10.9	31.2	-2.1	8.8	1.33E-04	1.0	1	1
8/1/08 00:00.00	0.0	24.0	-251.1	24.0	8.8				
8/1/08 00:20.95	1.5	22.4	21.0	20.9	9.1	1.41E-04	1.1	1.5	1.6
8/1/08 00:43.42	3.0	20.9	22.5	17.9	9.5	1.37E-04	1.0	1.5	1.5
8/1/08 01:07.40	4.5	19.4	24.0	14.9	9.9	1.38E-04	1.0	1.5	1.5
8/1/08 01:34.65	6.0	17.9	27.2	11.9	10.4	1.32E-04	1.0	1.5	1.5
8/1/08 02:03.65	7.5	16.4	29.0	8.9	10.9	1.36E-04	1.0	1.5	1.5
8/1/08 02:37.18	9.0	14.9	33.5	5.9	11.4	1.30E-04	1.0	1.5	1.5
8/1/08 03:28.68	11.0	12.9	51.5	1.9	12.3	1.29E-04	1.0	2	2
03:57.9	12.0	11.9	29.2	-0.1	12.8	1.29E-04	1.0	1	1
04:30.4	13.0	10.9	32.5	-2.1	13.3	1.27E-04	1.0	1	1



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

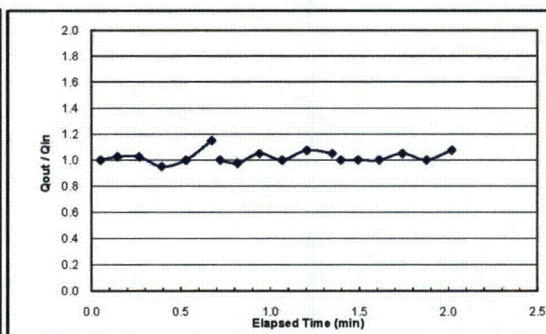
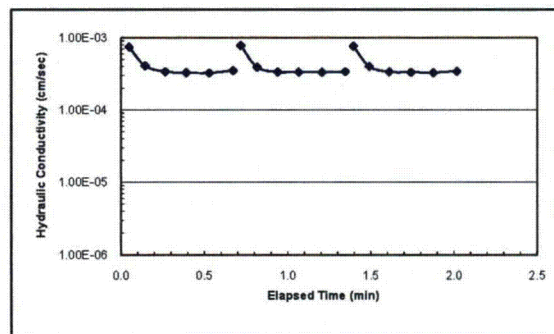
ASTM D 5084 - 00

Sample I.D.	305-mm DCRDF AO2-T2	Test Date :	6/3/08
Cell Pressure =	42.7 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	42.4 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	2.4 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	5 cm ²
Hydraulic Gradient, i =	11.1	a _{out} =	5 cm ²
Weight of wet sample =	19000.0 g	Sample Water Content =	25.4% (%)
Wet Density =	1.7 g/cm ³	Dry Density =	1.70 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
A3	25.14	146.93	122.29	25.36%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
6/3/2008 00:00.00	0.0	24.7	0.0	24.7	0.0				
6/3/2008 00:02.96	4.0	20.7	3.0	16.7	0.0	7.43E-04	1.0	20	20
6/3/2008 00:08.71	8.0	16.6	5.7	8.6	0.1	4.05E-04	1.0	20	20.5
6/3/2008 00:15.95	12.0	12.5	7.2	0.5	0.3	3.36E-04	1.0	20	20.5
6/3/2008 00:23.52	16.0	8.7	7.6	-7.3	0.4	3.25E-04	1.0	20	19
6/3/2008 00:31.73	20.0	4.7	8.2	-15.3	0.5	3.22E-04	1.0	20	20
6/3/2008 00:40.34	24.0	0.1	8.6	-23.9	0.7	3.49E-04	1.2	20	23
6/3/2008 00:00.00	0.0	24.6	0.0	24.6	0.7				
6/3/2008 00:02.83	4.0	20.6	2.8	16.6	0.7	7.78E-04	1.0	20	20
6/3/2008 00:08.65	8.0	16.7	5.8	8.7	0.8	3.90E-04	1.0	20	19.5
6/3/2008 00:16.05	12.0	12.5	7.4	0.5	0.9	3.33E-04	1.1	20	21
6/3/2008 00:23.64	16.0	8.5	7.6	-7.5	1.1	3.32E-04	1.0	20	20
6/3/2008 00:31.95	20.0	4.2	8.3	-15.8	1.2	3.31E-04	1.1	20	21.5
6/3/2008 00:40.45	24.0	0.0	8.5	-24.0	1.3	3.38E-04	1.1	20	21
6/3/2008 00:00.00	0.0	24.7	0.0	24.7	1.3				
6/3/2008 00:02.87	4.0	20.7	2.9	16.7	1.4	7.67E-04	1.0	20	20
6/3/2008 00:08.65	8.0	16.7	5.8	8.7	1.5	3.97E-04	1.0	20	20
6/3/2008 00:15.83	12.0	12.7	7.2	0.7	1.6	3.35E-04	1.0	20	20
6/3/2008 00:23.65	16.0	8.5	7.8	-7.5	1.7	3.30E-04	1.1	20	21
6/3/2008 00:31.75	20.0	4.5	8.1	-15.5	1.9	3.27E-04	1.0	20	20
6/3/2008 00:40.27	24.0	0.2	8.5	-23.8	2.0	3.40E-04	1.1	20	21.5



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

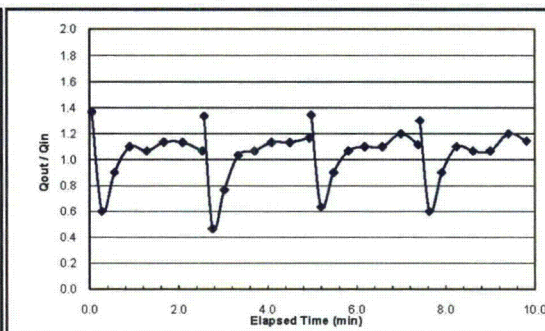
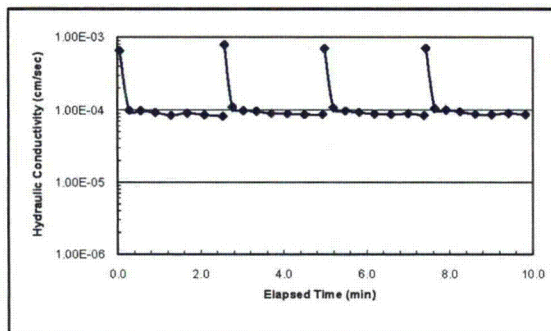
ASTM D 5084 - 00

Sample I.D.	305-mm DCRDF AO2-S2 Shallow	Test Date :	6/12/08
Cell Pressure =	42.7 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	42.4 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	2.4 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	5 cm ²
Hydraulic Gradient, i =	11.1	a _{out} =	5 cm ²
Weight of wet sample =	20000.0 g	Sample Water Content =	26.0% (%)
Wet Density =	1.8 g/cm ³	Dry Density =	1.79 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
RC4-2	24.47	132.74	110.4	26.00%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
6/12/2008 00:00:00	0.0	24.9	0.0	24.9	0.0				
6/12/2008 00:02:00	3.0	20.8	3.0	17.8	0.0	6.58E-04	1.4	15	20.5
6/12/2008 00:16:64	6.0	19.0	13.7	13.0	0.3	9.93E-05	0.6	15	9
6/12/2008 00:33:56	9.0	16.3	16.9	7.3	0.6	9.81E-05	0.9	15	13.5
6/12/2008 00:54:06	12.0	13.0	20.5	1.0	0.9	9.26E-05	1.1	15	16.5
6/12/2008 01:17:02	15.0	9.8	23.0	-5.2	1.3	8.44E-05	1.1	15	16
6/12/2008 01:39:96	18.0	6.4	22.9	-11.6	1.7	9.06E-05	1.1	15	17
6/12/2008 02:05:28	21.0	3.0	25.3	-18.0	2.1	8.55E-05	1.1	15	17
6/12/2008 02:31:84	24.0	-0.2	26.6	-24.2	2.5	8.23E-05	1.1	15	16
6/12/2008 00:00:00	0.0	24.8	0.0	24.8	2.5				
6/12/2008 00:02:42	3.0	20.8	2.4	17.8	2.6	7.93E-04	1.3	15	20
6/12/2008 00:13:75	6.0	19.4	11.3	13.4	2.8	1.10E-04	0.5	15	7
6/12/2008 00:29:40	9.0	17.1	15.6	8.1	3.0	9.83E-05	0.8	15	11.5
6/12/2008 00:48:42	12.0	14.0	19.0	2.0	3.3	9.61E-05	1.0	15	15.5
6/12/2008 01:09:92	15.0	10.8	21.5	-4.2	3.7	8.96E-05	1.1	15	16
6/12/2008 01:33:15	18.0	7.4	23.2	-10.6	4.1	8.89E-05	1.1	15	17
6/12/2008 01:57:90	21.0	4.0	24.7	-17.0	4.5	8.69E-05	1.1	15	17
6/12/2008 02:24:14	24.0	0.5	26.2	-23.5	4.9	8.69E-05	1.2	15	17.5
6/12/2008 00:00:00	0.1	24.8	0.0	24.7	4.9				
6/12/2008 00:02:65	3.0	20.9	2.7	17.9	5.0	7.04E-04	1.3	14.5	19.5
6/12/2008 00:15:55	6.0	19.0	12.9	13.0	5.2	1.07E-04	0.6	15	9.5
6/12/2008 00:32:61	9.0	16.3	17.1	7.3	5.5	9.73E-05	0.9	15	13.5
6/12/2008 00:52:75	12.0	13.1	20.1	1.1	5.8	9.27E-05	1.1	15	16
6/12/2008 01:15:05	15.0	9.8	22.3	-5.2	6.2	8.83E-05	1.1	15	16.5
6/12/2008 01:38:61	18.0	6.5	23.6	-11.5	6.6	8.68E-05	1.1	15	16.5
6/12/2008 02:03:65	21.0	2.9	25.0	-18.1	7.0	8.92E-05	1.2	15	18
6/12/2008 02:26:64	23.6	0.0	23.0	-23.6	7.4	8.42E-05	1.1	13	14.5
6/12/2008 00:00:00	0.0	24.9	0.0	24.9	7.4				
6/12/2008 00:02:67	3.0	21.0	2.7	18.0	7.4	7.08E-04	1.3	15	19.5
6/12/2008 00:15:56	6.0	19.2	12.9	13.2	7.6	1.05E-04	0.6	15	9
6/12/2008 00:32:17	9.0	16.5	16.6	7.5	7.9	9.98E-05	0.9	15	13.5
6/12/2008 00:52:17	12.0	13.2	20.0	1.2	8.2	9.48E-05	1.1	15	16.5
6/12/2008 01:14:25	15.0	10.0	22.1	-5.0	8.6	8.77E-05	1.1	15	16
6/12/2008 01:37:46	18.0	6.8	23.2	-11.2	9.0	8.66E-05	1.1	15	16
6/12/2008 02:02:18	21.0	3.2	24.7	-17.8	9.4	9.02E-05	1.2	15	18
6/12/2008 02:26:55	23.8	0.0	24.4	-23.8	9.8	8.67E-05	1.1	14	16



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

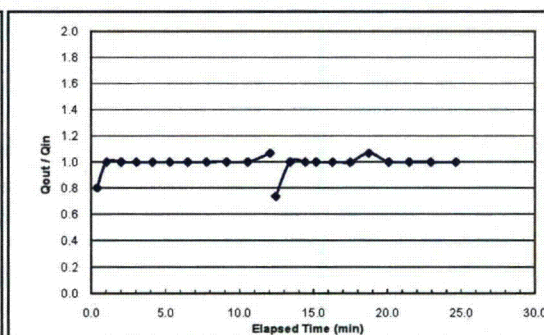
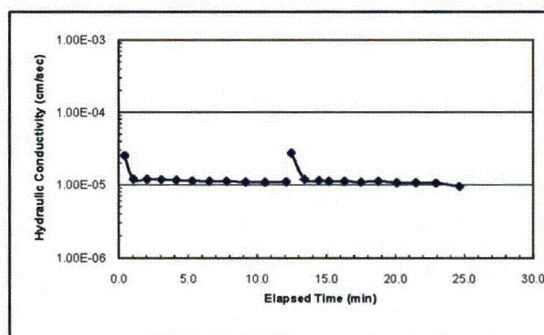
ASTM D 5084 - 00

Sample I.D.	150-mm Omaha DCRDF AO2-S2- Shallow	Test Date :	7/15/08
Cell Pressure =	42.0 psi	Diameter of Sample, D =	15.2 cm
Inflow Pressure =	40.5 psi	Length of Sample, L =	7.6 cm
Outflow Pressure =	39.5 psi	Area of Sample, A =	182.4 cm ²
Pressure Difference =	1.0 psi	Sample Volume, V =	1390.0 cm ³
Effective Stress =	2.00 psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	9.2	a _{out} =	1 cm ²
Weight of wet sample =	2463.2 (g)	Sample Water Content =	29.2% (%)
Wet Density =	1.8 g/cm ³	Dry Density =	1.77 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
K7	30.78	130.37	107.85	29.22%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
7/18/08 00:00.00	0.0	24.0	0.0	24.0	0.0				
7/18/08 00:23.78	1.5	22.8	23.8	21.3	0.4	2.55E-05	0.8	1.5	1.2
7/18/08 01:02.06	2.5	21.8	38.3	19.3	1.0	1.20E-05	1.0	1	1
7/18/08 02:01.11	4.0	20.3	59.0	16.3	2.0	1.20E-05	1.0	1.5	1.5
7/18/08 03:02.84	5.5	18.8	61.7	13.3	3.0	1.19E-05	1.0	1.5	1.5
7/18/08 04:08.02	7.0	17.3	65.2	10.3	4.1	1.17E-05	1.0	1.5	1.5
7/18/08 05:17.46	8.5	15.8	69.4	7.3	5.3	1.14E-05	1.0	1.5	1.5
7/18/08 06:30.52	10.0	14.3	73.1	4.3	6.5	1.13E-05	1.0	1.5	1.5
7/18/08 07:46.33	11.5	12.8	75.8	1.3	7.8	1.13E-05	1.0	1.5	1.5
7/18/08 09:07.92	13.0	11.3	81.6	-1.7	9.1	1.10E-05	1.0	1.5	1.5
7/18/08 10:33.45	14.5	9.8	85.5	-4.7	10.6	1.09E-05	1.0	1.5	1.5
7/18/08 12:04.55	16.0	8.2	91.1	-7.8	12.1	1.11E-05	1.1	1.5	1.6
7/18/08 00:00.00	0.0	24.0	0.0	24.0	12.1				
7/18/08 00:21.05	1.5	22.9	21.1	21.4	12.5	2.77E-05	0.7	1.5	1.1
7/18/08 01:18.87	3.0	21.4	57.8	18.4	13.4	1.20E-05	1.0	1.5	1.5
7/18/08 02:21.14	4.5	19.9	62.3	15.4	14.5	1.15E-05	1.0	1.5	1.5
7/18/08 03:04.87	5.5	18.9	43.7	13.4	15.2	1.13E-05	1.0	1	1
7/18/08 04:12.18	7.0	17.4	67.3	10.4	16.3	1.13E-05	1.0	1.5	1.5
7/18/08 05:24.15	8.5	15.9	72.0	7.4	17.5	1.10E-05	1.0	1.5	1.5
7/18/08 06:39.37	10.0	14.3	75.2	4.3	18.8	1.13E-05	1.1	1.5	1.6
7/18/08 07:59.25	11.5	12.8	79.9	1.3	20.1	1.07E-05	1.0	1.5	1.5
7/18/08 09:22.96	13.0	11.3	83.7	-1.7	21.5	1.07E-05	1.0	1.5	1.5
7/18/08 10:50.56	14.5	9.8	87.6	-4.7	22.9	1.07E-05	1.0	1.5	1.5
7/18/08 12:33.45	16.0	8.3	102.9	-7.7	24.7	9.50E-06	1.0	1.5	1.5



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

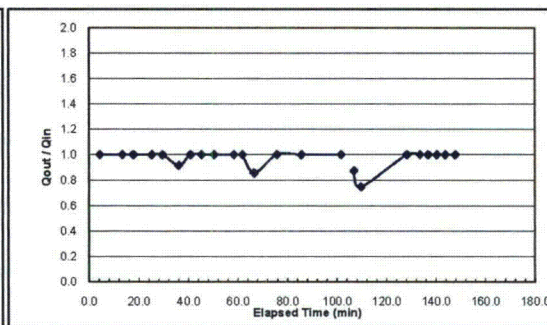
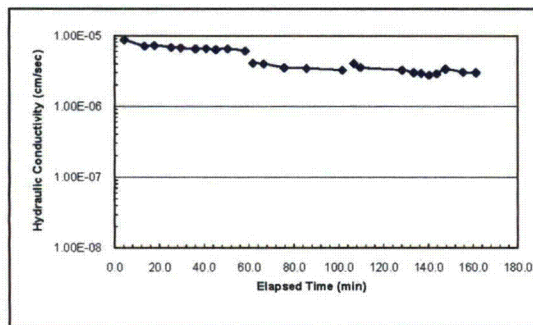
ASTM D 5084 - 00

Sample I.D.	75-mm Omaha DCRDF AO2-S2-Shallow	Test Date :	7/14/08
Cell Pressure =	42.0 psi	Diameter of Sample, D =	7.0 cm
Inflow Pressure =	40.5 psi	Length of Sample, L =	3.8 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	38.3 cm ²
Pressure Difference =	0.5 psi	Sample Volume, V =	146.0 cm ³
Effective Stress =	1.75 psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	9.2	a _{out} =	1 cm ²
Weight of wet sample =	242.3 (g)	Sample Water Content =	-506.3% (%)
Wet Density =	1.7 g/cm ³	Dry Density =	1.75 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
h1	30.84	156.13		-506.26%

Date, Time	Inflow	Outflow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
7/31/08 00:00.00	0.0	24.0	0.0	24.0	0.0				
7/31/08 04:17.50	1.3	22.7	257.5	21.4	4.3	8.68E-06	1.0	1.3	1.3
7/31/08 13:18.42	3.4	20.6	540.9	17.2	13.3	7.09E-06	1.0	2.1	2.1
7/31/08 17:45.60	4.4	19.6	267.2	15.2	17.8	7.25E-06	1.0	1	1
7/31/08 25:13.02	5.9	18.1	447.4	12.2	25.2	6.82E-06	1.0	1.5	1.5
7/31/08 29:28.64	6.7	17.3	255.6	10.6	29.5	6.68E-06	1.0	0.8	0.8
7/31/08 36:03.65	7.9	16.2	395.0	8.3	36.1	6.49E-06	0.9	1.2	1.1
7/31/08 40:50.11	8.7	15.4	286.5	6.7	40.8	6.51E-06	1.0	0.8	0.8
7/31/08 45:16.25	9.4	14.7	266.1	5.3	45.3	6.35E-06	1.0	0.7	0.7
7/31/08 50:24.65	10.2	13.9	308.4	3.7	50.4	6.50E-06	1.0	0.8	0.8
7/31/08 58:21.33	11.3	12.8	476.7	1.5	58.4	6.08E-06	1.0	1.1	1.1
7/31/08 00:00.00	0.0	24.0	-3501.3	24.0	58.4				
7/31/08 03:27.73	0.5	23.5	207.7	23.0	61.9	4.08E-06	1.0	0.5	0.5
7/31/08 08:07.61	1.2	22.9	279.9	21.7	66.5	4.01E-06	0.9	0.7	0.6
7/31/08 17:20.83	2.3	21.8	553.2	19.5	75.7	3.55E-06	1.0	1.1	1.1
7/31/08 27:13.03	3.4	20.7	592.2	17.3	85.6	3.45E-06	1.0	1.1	1.1
7/31/08 43:13.53	5.0	19.1	960.5	14.1	101.6	3.26E-06	1.0	1.6	1.6
7/31/08 00:00.00	0.0	24.0	0.0	24.0	101.6				
7/31/08 05:15.37	0.8	23.3	315.4	22.5	106.9	4.05E-06	0.9	0.8	0.7
7/31/08 08:06.45	1.2	23.0	171.1	21.8	109.7	3.55E-06	0.8	0.4	0.3
7/31/08 26:41.15	3.2	21.0	1114.7	17.8	128.3	3.25E-06	1.0	2	2
7/31/08 31:57.55	3.7	20.5	316.4	16.8	133.6	2.99E-06	1.0	0.5	0.5
7/31/08 35:13.84	4.0	20.2	196.3	16.2	136.8	2.94E-06	1.0	0.3	0.3
7/31/08 38:45.73	4.3	19.9	211.9	15.6	140.4	2.76E-06	1.0	0.3	0.3
7/31/08 42:09.31	4.6	19.6	203.6	15.0	143.8	2.90E-06	1.0	0.3	0.3
7/31/08 46:07.37	5.0	19.2	238.1	14.2	147.7	3.36E-06	1.0	0.4	0.4
53:57.2	5.7	18.5	469.8	12.8	155.6	3.04E-06	1.0	0.7	0.7
59:47.2	6.2	18.0	350.0	11.8	161.4	2.99E-06	1.0	0.5	0.5



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

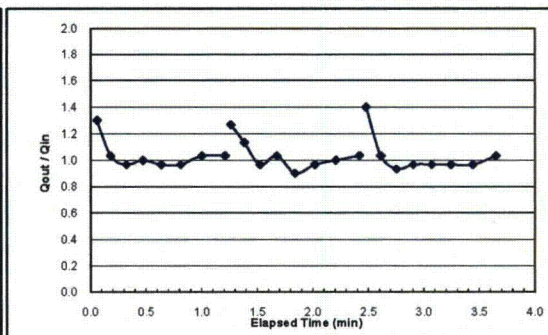
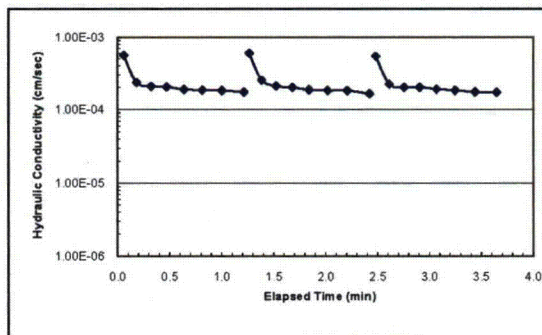
ASTM D 5084 - 00

Sample I.D.	305-mm DCRDF A-2 Top	Test Date :	6/17/08
Cell Pressure =	42.7 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	42.4 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	2.4 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	5 cm ²
Hydraulic Gradient, i =	11.1	a _{out} =	5 cm ²
Weight of wet sample =	19700.0 g	Sample Water Content =	22.5% (%)
Wet Density =	1.8 g/cm ³	Dry Density =	1.77 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
RC4-2	24.47	130.64	111.16	22.47%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
6/17/2008 00:00.00	0.0	24.9	0.0	24.9	0.0				
6/17/2008 00:03.42	3.0	21.0	3.4	18.0	0.1	5.53E-04	1.3	15	19.5
6/17/2008 00:10.84	6.0	17.9	7.4	11.9	0.2	2.33E-04	1.0	15	15.5
6/17/2008 00:19.25	9.0	15.0	8.4	6.0	0.3	2.06E-04	1.0	15	14.5
6/17/2008 00:28.25	12.0	12.0	9.0	0.0	0.5	2.02E-04	1.0	15	15
6/17/2008 00:38.15	15.0	9.1	9.9	-5.9	0.6	1.87E-04	1.0	15	14.5
6/17/2008 00:48.65	18.0	6.2	10.5	-11.8	0.8	1.83E-04	1.0	15	14.5
6/17/2008 01:00.11	21.0	3.1	11.5	-17.9	1.0	1.80E-04	1.0	15	15.5
6/17/2008 01:12.61	24.0	0.0	12.5	-24.0	1.2	1.72E-04	1.0	15	15.5
6/17/2008 00:00.00	0.0	24.8	0.0	24.8	1.2				
6/17/2008 00:03.14	3.0	21.0	3.1	18.0	1.3	5.93E-04	1.3	15	19
6/17/2008 00:10.37	6.0	17.6	7.2	11.6	1.4	2.51E-04	1.1	15	17
6/17/2008 00:18.71	9.0	14.7	8.3	5.7	1.5	2.08E-04	1.0	15	14.5
6/17/2008 00:28.06	12.0	11.6	9.3	-0.4	1.7	1.98E-04	1.0	15	15.5
6/17/2008 00:37.78	15.0	8.9	9.7	-6.1	1.8	1.85E-04	0.9	15	13.5
6/17/2008 00:48.45	18.0	6.0	10.7	-12.0	2.0	1.80E-04	1.0	15	14.5
6/17/2008 00:59.75	21.0	3.0	11.3	-18.0	2.2	1.80E-04	1.0	15	15
6/17/2008 01:12.55	23.9	0.0	12.8	-23.9	2.4	1.62E-04	1.0	14.5	15
6/17/2008 00:00.00	0.0	24.8	0.0	24.8	2.4				
6/17/2008 00:03.68	3.0	20.6	3.7	17.6	2.5	5.37E-04	1.4	15	21
6/17/2008 00:11.55	6.0	17.5	7.9	11.5	2.6	2.20E-04	1.0	15	15.5
6/17/2008 00:20.08	9.0	14.7	8.5	5.7	2.8	2.00E-04	0.9	15	14
6/17/2008 00:29.06	12.0	11.8	9.0	-0.2	2.9	2.00E-04	1.0	15	14.5
6/17/2008 00:38.92	15.0	8.9	9.9	-6.1	3.1	1.88E-04	1.0	15	14.5
6/17/2008 00:49.56	18.0	6.0	10.6	-12.0	3.2	1.81E-04	1.0	15	14.5
6/17/2008 01:01.15	21.0	3.1	11.6	-17.9	3.4	1.72E-04	1.0	15	14.5
6/17/2008 01:13.78	24.0	0.0	12.6	-24.0	3.6	1.70E-04	1.0	15	15.5



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

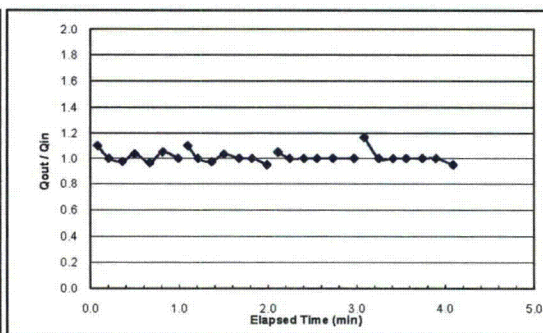
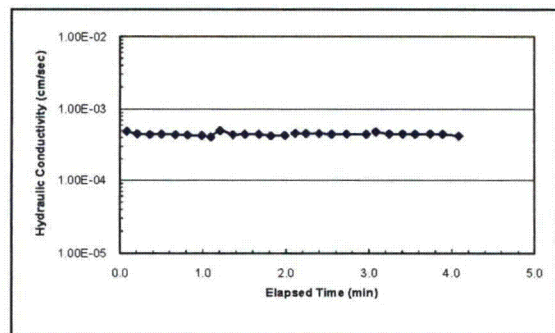
ASTM D 5084 - 00

Sample I.D.	150-mm Omaha DCRDF A2 Top	Test Date :	7/15/08
Cell Pressure = 42.0 psi		Diameter of Sample, D = 15.2 cm	
Inflow Pressure = 40.0 psi		Length of Sample, L = 7.6 cm	
Outflow Pressure = 39.5 psi		Area of Sample, A = 181.5 cm ²	
Pressure Difference = 0.5 psi		Sample Volume, V = 1379.1 cm ³	
Effective Stress = 2.25 psi		a _{in} = 1 cm ²	
Hydraulic Gradient, i = 4.6		a _{out} = 1 cm ²	
Weight of wet sample = 2403.2 (g)		Sample Water Content = 28.5% (%)	
Wet Density = 1.7 g/cm ³		Dry Density = 1.74 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
A3	25.2	135.8	111.3	28.46%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
7/15/08 00:00.00	0.0	24.0	0.0	24.0	0.0				
7/15/08 00:04.82	3.0	20.7	4.8	17.7	0.1	4.89E-04	1.1	3	3.3
7/15/08 00:12.46	7.0	16.7	7.6	9.7	0.2	4.50E-04	1.0	4	4
7/15/08 00:21.61	11.0	12.8	9.2	1.8	0.4	4.43E-04	1.0	4	3.9
7/15/08 00:30.12	14.0	9.7	8.5	-4.3	0.5	4.44E-04	1.0	3	3.1
7/15/08 00:40.22	17.0	6.8	10.1	-10.2	0.7	4.40E-04	1.0	3	2.9
7/15/08 00:48.87	19.0	4.7	8.7	-14.3	0.8	4.34E-04	1.1	2	2.1
7/15/08 00:59.35	21.0	2.7	10.5	-18.3	1.0	4.25E-04	1.0	2	2
7/15/08 00:00.00	0.0	24.0	0.0	24.0	1.0				
7/15/08 00:05.80	3.0	20.7	5.8	17.7	1.1	4.07E-04	1.1	3	3.3
7/15/08 00:12.68	7.0	16.7	6.9	9.7	1.2	4.99E-04	1.0	4	4
7/15/08 00:21.88	11.0	12.8	9.2	1.8	1.4	4.41E-04	1.0	4	3.9
7/15/08 00:30.38	14.0	9.7	8.5	-4.3	1.5	4.44E-04	1.0	3	3.1
7/15/08 00:40.58	17.0	6.7	10.2	-10.3	1.7	4.44E-04	1.0	3	3
7/15/08 00:49.26	19.0	4.7	8.7	-14.3	1.8	4.23E-04	1.0	2	2
7/15/08 00:59.40	21.0	2.8	10.1	-18.2	2.0	4.27E-04	1.0	2	1.9
7/15/08 00:00.00	0.0	24.0	-59.4	24.0	2.0				
7/15/08 00:06.82	4.0	19.8	6.8	15.8	2.1	4.58E-04	1.1	4	4.2
7/15/08 00:14.68	8.0	15.8	7.9	7.8	2.2	4.55E-04	1.0	4	4
7/15/08 00:24.17	12.0	11.8	9.5	-0.2	2.4	4.55E-04	1.0	4	4
7/15/08 00:33.04	15.0	8.8	8.9	-6.2	2.6	4.44E-04	1.0	3	3
7/15/08 00:43.91	18.0	5.8	10.9	-12.2	2.7	4.47E-04	1.0	3	3
7/15/08 00:58.14	21.0	2.8	14.2	-18.2	3.0	4.46E-04	1.0	3	3
7/15/08 00:00.00	0.0	24.0	-58.1	24.0	3.0				
7/15/08 00:05.08	3.0	20.5	5.1	17.5	3.1	4.80E-04	1.2	3	3.5
7/15/08 00:14.86	8.0	15.5	9.8	7.5	3.2	4.51E-04	1.0	5	5
7/15/08 00:24.57	12.0	11.5	9.7	-0.5	3.4	4.48E-04	1.0	4	4
00:33.5	15.0	8.5	8.9	-6.5	3.6	4.46E-04	1.0	3	3
00:44.5	18.0	5.5	11.0	-12.5	3.7	4.48E-04	1.0	3	3
00:53.6	20.0	3.5	9.1	-16.5	3.9	4.46E-04	1.0	2	2
01:05.3	22.0	1.6	11.7	-20.4	4.1	4.21E-04	1.0	2	1.9



Hydraulic Conductivity Test - Omaha - Thick Store-and-Release Cover

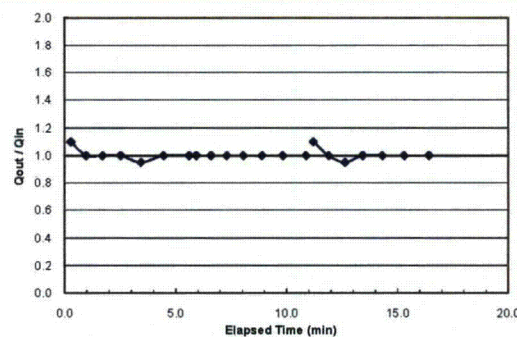
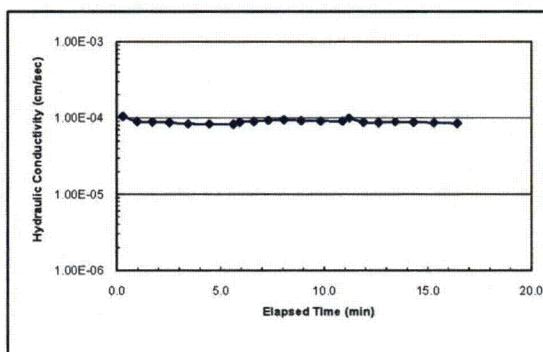
ASTM D 5084 - 00

Sample I.D.	75-mm Omaha DCRDF A2 Top	Test Date :	7/15/08
Cell Pressure = 42.0	psi	Diameter of Sample, D = 7.0	cm
Inflow Pressure = 40.5	psi	Length of Sample, L = 3.8	cm
Outflow Pressure = 40.0	psi	Area of Sample, A = 38.3	cm ²
Pressure Difference = 0.5	psi	Sample Volume, V = 146.0	cm ³
Effective Stress = 1.75	psi	a _{in} = 1	cm ²
Hydraulic Gradient, i = 9.2		a _{out} = 1	cm ²
Weight of wet sample = 252.4	(g)	Sample Water Content = -404.9%	(%)
Wet Density = 1.7	g/cm ³	Dry Density = 1.80	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
6	30.9	125.1		-404.85%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
8/1/08 00:00:00	0.0	24.0	0.0	24.0	0.0				
8/1/08 00:17:23	1.0	22.9	17.2	21.9	0.3	1.04E-04	1.1	1	1.1
00:57.9	3	20.9	40.7	17.9	1.0	8.88E-05	1.0	2	2
8/1/08 01:42:28	5.0	18.9	44.4	13.9	1.7	8.78E-05	1.0	2	2
8/1/08 02:31:55	7.0	16.9	49.3	9.9	2.5	8.58E-05	1.0	2	2
8/1/08 03:25:87	9.0	15.0	54.3	6.0	3.4	8.28E-05	0.9	2	1.9
8/1/08 04:27:25	11.0	13.0	61.4	2.0	4.5	8.28E-05	1.0	2	2
8/1/08 05:36:65	13.0	11.0	69.4	-2.0	5.6	8.16E-05	1.0	2	2
8/1/08 00:00:00	0.0	24.0	-336.7	24.0	5.6				
8/1/08 00:19:45	1.0	23.0	19.5	22.0	5.9	8.79E-05	1.0	1	1
8/1/08 00:59:92	3.0	21.0	40.5	18.0	6.6	8.91E-05	1.0	2	2
8/1/08 01:42:02	5.0	19.0	42.1	14.0	7.3	9.24E-05	1.0	2	2
8/1/08 02:26:95	7.0	17.0	44.9	10.0	8.0	9.39E-05	1.0	2	2
8/1/08 03:17:45	9.0	15.0	50.5	6.0	8.9	9.13E-05	1.0	2	2
8/1/08 04:13:75	11.0	13.0	56.3	2.0	9.8	9.03E-05	1.0	2	2
8/1/08 05:16:56	13.0	11.0	62.8	-2.0	10.9	9.01E-05	1.0	2	2
8/1/08 00:00:00	0.0	24.0	-316.6	24.0	10.9				
8/1/08 00:18:23	1.0	22.9	18.2	21.9	11.2	9.86E-05	1.1	1	1.1
8/1/08 00:59:73	3.0	20.9	41.5	17.9	11.9	8.71E-05	1.0	2	2
8/1/08 01:43:75	5.0	19.0	44.0	14.0	12.6	8.62E-05	0.9	2	1.9
8/1/08 02:31:56	7.0	17.0	47.8	10.0	13.4	8.82E-05	1.0	2	2
8/1/08 03:24:65	9.0	15.0	53.1	6.0	14.3	8.68E-05	1.0	2	2
8/1/08 04:23:73	11.0	13.0	59.1	2.0	15.3	8.60E-05	1.0	2	2
8/1/08 05:31:18	13.0	11.0	67.5	-2.0	16.4	8.39E-05	1.0	2	2



Hydraulic Conductivity Test - Polson - Composite Cover

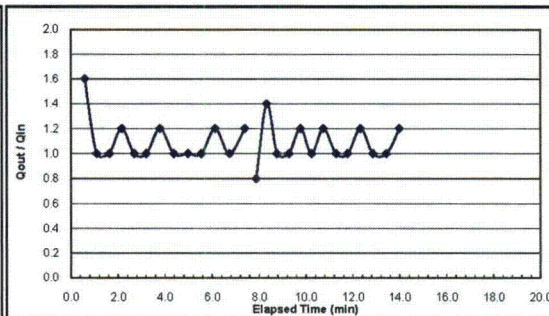
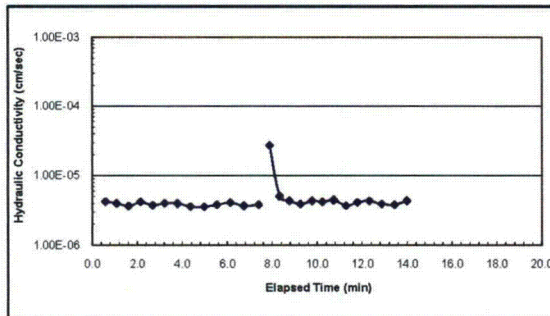
ASTM D 5084 - 00

Sample I.D. 305-mm Polson Conv Below Membrane-1			Test Date : 11/12/08	
Cell Pressure =	41.8	psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.0	psi	Length of Sample, L =	14.0 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	1.0	psi	Sample Volume, V =	10193.3 cm ³
Effective Stress =	1.3	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	5.0		a _{out} =	1 cm ²
Weight of wet sample =	15850.0	g	Sample Water Content =	11.5% (%)
Wet Density =	1.6	g/cm ³	Dry Density =	1.55 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
k11	30.58	94.89	88.27	11.48%

Date, Time	Inflow	Outflow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	4.0	17.5	0.0	13.5	0.0				
0:00:36	4.5	16.7	35.6	12.2	0.6	4.21E-06	1.6	0.5	0.8
0:01:05	5.0	16.2	29.4	11.2	1.1	3.97E-06	1.0	0.5	0.5
0:01:37	5.5	15.7	32.4	10.2	1.6	3.65E-06	1.0	0.5	0.5
0:02:09	6.0	15.1	31.6	9.1	2.1	4.16E-06	1.2	0.5	0.6
0:02:42	6.5	14.6	32.6	8.1	2.7	3.73E-06	1.0	0.5	0.5
0:03:12	7.0	14.1	30.8	7.1	3.2	3.99E-06	1.0	0.5	0.5
0:03:47	7.5	13.5	34.6	6.0	3.8	3.96E-06	1.2	0.5	0.6
0:04:22	8.0	13.0	35.2	5.0	4.4	3.59E-06	1.0	0.5	0.5
0:04:58	8.5	12.5	36.0	4.0	5.0	3.56E-06	1.0	0.5	0.5
0:05:32	9.0	12.0	34.2	3.0	5.5	3.79E-06	1.0	0.5	0.5
0:06:08	9.5	11.4	35.4	1.9	6.1	4.08E-06	1.2	0.5	0.6
0:06:44	10.0	10.9	36.3	0.9	6.7	3.68E-06	1.0	0.5	0.5
0:07:23	10.5	10.3	39.1	-0.2	7.4	3.81E-06	1.2	0.5	0.6
0:08:00	2.0	24.0	-443.1	22.0	7.4				
0:08:29	6.0	20.8	28.6	14.8	7.9	2.72E-05	0.8	4	3.2
0:08:56	6.5	20.1	27.0	13.6	8.3	5.03E-06	1.4	0.5	0.7
0:09:22	7.0	19.6	26.4	12.6	8.8	4.35E-06	1.0	0.5	0.5
0:10:52	7.5	19.1	29.8	11.6	9.3	3.90E-06	1.0	0.5	0.5
0:11:22	8.0	18.5	29.8	10.5	9.8	4.34E-06	1.2	0.5	0.6
0:12:50	8.5	18.0	28.4	9.5	10.2	4.19E-06	1.0	0.5	0.5
0:13:20	9.0	17.4	29.9	8.4	10.7	4.44E-06	1.2	0.5	0.6
0:13:53	9.5	16.9	33.1	7.4	11.3	3.70E-06	1.0	0.5	0.5
0:14:23	10.0	16.4	30.0	6.4	11.8	4.13E-06	1.0	0.5	0.5
0:14:55	10.5	15.8	32.0	5.3	12.3	4.32E-06	1.2	0.5	0.6
0:15:28	11.0	15.3	32.6	4.3	12.9	3.91E-06	1.0	0.5	0.5
0:16:02	11.5	14.8	34.0	3.3	13.4	3.80E-06	1.0	0.5	0.5
0:16:35	12.0	14.2	33.2	2.2	14.0	4.35E-06	1.2	0.5	0.6



Hydraulic Conductivity Test - Polson - Composite Cover

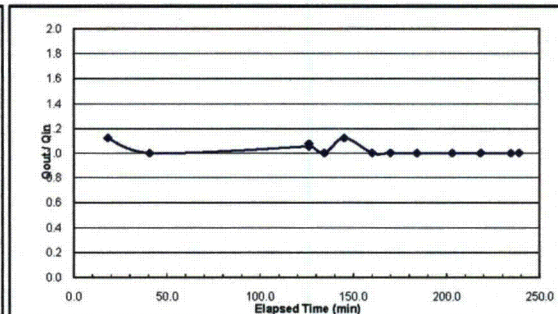
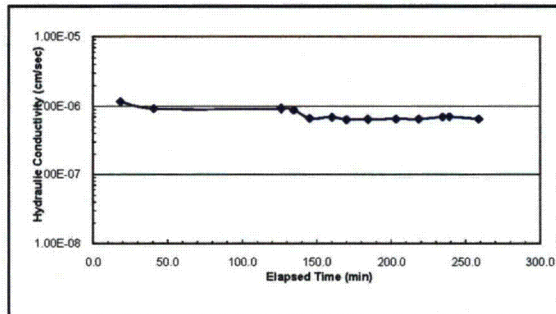
ASTM D 5084 - 00

Sample I.D. 150-mm Polson Conv Below Membrane-1			Test Date : 12/31/08	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	15.2 cm
Inflow Pressure =	40.7	psi	Length of Sample, L =	6.4 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	182.41 cm ²
Pressure Difference =	0.7	psi	Sample Volume, V =	1158.3 cm ³
Effective Stress =	1.7	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	7.8		a _{out} =	1 cm ²
Weight of wet sample =	2207.7	g	Sample Water Content =	26.1% (%)
Wet Density =	1.91	g/cm ³	Dry Density =	1.51 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
A	31	126.36	106.63	26.09%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	1.0	24.0	0.0	23.0	0.0				
0:18:09	3.4	21.3	1088.7	17.9	18.1	1.17E-06	1.1	2.4	2.7
0:40:34	5.7	19.0	1345.7	13.3	40.6	9.18E-07	1.0	2.3	2.3
2:06:08	12.9	11.4	5133.3	-1.5	126.1	9.16E-07	1.1	7.2	7.6
0:00:00	1.3	23.9	-7567.7	22.6	126.1	9.40E-07	1.1	-11.6	-12.5
0:08:22	2.2	23.0	501.8	20.8	134.5	8.80E-07	1.0	0.9	0.9
0:19:03	3.0	22.1	641.2	19.1	145.1	6.67E-07	1.1	0.8	0.9
0:34:06	4.2	20.9	902.6	16.7	160.2	6.89E-07	1.0	1.2	1.2
0:43:54	4.9	20.2	588.1	15.3	170.0	6.35E-07	1.0	0.7	0.7
0:58:05	5.9	19.2	851.4	13.3	184.2	6.44E-07	1.0	1	1
1:17:01	7.2	17.9	1136.0	10.7	203.1	6.51E-07	1.0	1.3	1.3
1:32:12	8.2	16.9	910.9	8.7	218.3	6.49E-07	1.0	1	1
1:48:24	9.3	15.8	972.0	6.5	234.5	6.93E-07	1.0	1.1	1.1
1:52:53	9.6	15.5	268.8	5.9	239.0	7.01E-07	1.0	0.3	0.3
2:12:45	10.8	14.3	1192.2	3.5	258.9	6.50E-07			



Hydraulic Conductivity Test - Polson - Composite Cover

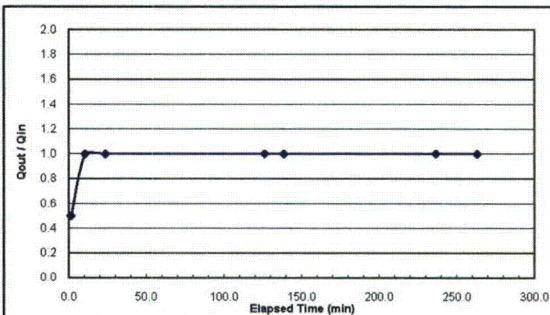
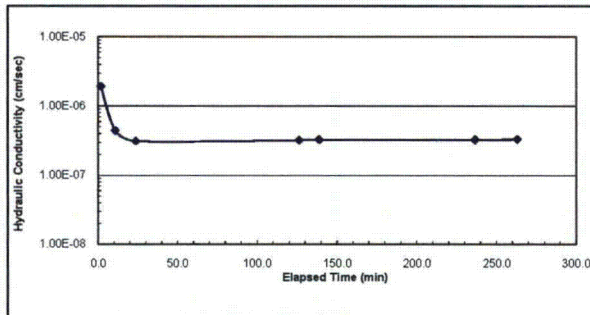
ASTM D 5084 - 00

Sample I.D. 75-mm Polson Conv Below Membrane-1			Test Date : 12/31/08	
Cell Pressure =	41.8	psi	Diameter of Sample, D =	7.6 cm
Inflow Pressure =	40.5	psi	Length of Sample, L =	3.2 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	45.60 cm ²
Pressure Difference =	0.5	psi	Sample Volume, V =	144.8 cm ³
Effective Stress =	1.6	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	11.1		a _{out} =	1 cm ²
Weight of wet sample =	249.5	g	Sample Water Content =	24.1% (%)
Wet Density =	1.72	g/cm ³	Dry Density =	1.39 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
A	31	134.66	114.55	24.07%

Date, Time	Inflow	Outflow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	1.0	24.0	0.0	23.0	0.0				
0:01:33	1.2	23.9	93.0	22.7	1.6	1.93E-06	0.5	0.2	0.1
0:10:38	1.4	23.7	544.8	22.3	10.6	4.43E-07	1.0	0.2	0.2
0:23:34	1.6	23.5	776.5	21.9	23.6	3.13E-07	1.0	0.2	0.2
0:48:59	2.0	23.1	1524.8	21.1	126.1	3.22E-07	1.0	0.4	0.4
1:01:36	2.2	22.9	757.0	20.7	138.7	3.28E-07	1.0	0.2	0.2
2:39:26	3.7	21.4	5870.0	17.7	236.6	3.27E-07	1.0	1.5	1.5
3:05:58	4.1	21.0	1592.0	16.9	263.1	3.33E-07	1.0	0.4	0.4



Hydraulic Conductivity Test - Polson - Composite Cover

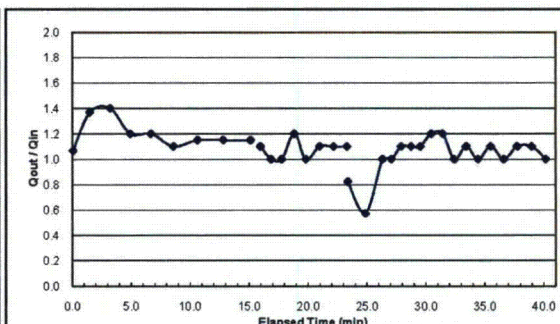
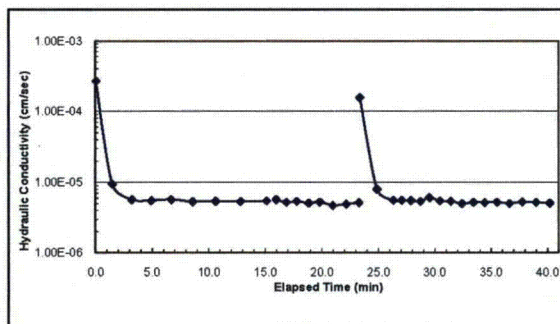
ASTM D 5084 - 00

Sample I.D. 305-mm Conv Below Membrane-4			Test Date : 11/17/08	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.1	psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	1.1	psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	5.1		a _{out} =	1 cm ²
Weight of wet sample =	21800.0	g	Sample Water Content =	21.8% (%)
Wet Density =	2.0	g/cm ³	Dry Density =	1.96 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
BB	30.36	178.34	151.84	21.81%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
12/17/2008 00:00.00	0.0	24.0	0.0	24.0	0.0				
12/17/2008 00:02.46	3.0	20.8	2.5	17.8	0.0	2.68E-04	1.1	3	3.2
12/17/2008 01:28.52	6.0	16.7	86.1	10.7	1.5	9.41E-06	1.4	3	4.1
12/17/2008 03:11.61	8.0	13.9	103.1	5.9	3.2	5.68E-06	1.4	2	2.8
12/17/2008 04:54.56	10.0	11.5	103.0	1.5	4.9	5.51E-06	1.2	2	2.4
12/17/2008 06:39.96	12.0	9.1	105.4	-2.9	6.7	5.69E-06	1.2	2	2.4
12/17/2008 08:34.46	14.0	6.9	114.5	-7.1	8.6	5.30E-06	1.1	2	2.2
12/17/2008 10:37.15	16.0	4.6	122.7	-11.4	10.6	5.38E-06	1.2	2	2.3
12/17/2008 12:48.46	18.0	2.3	131.3	-15.7	12.8	5.36E-06	1.2	2	2.3
12/17/2008 15:07.06	20.0	0.0	138.6	-20.0	15.1	5.45E-06	1.2	2	2.3
12/17/2008 00:00.00	16.0	16.1	0.0	0.1	15.1				
12/17/2008 00:50.56	17.0	15.0	50.6	-2.0	16.0	5.68E-06	1.1	1	1.1
12/17/2008 01:44.61	18.0	14.0	54.1	-4.0	16.9	5.20E-06	1.0	1	1
12/17/2008 02:38.45	19.0	13.0	53.8	-6.0	17.8	5.36E-06	1.0	1	1
12/17/2008 03:42.61	20.0	11.8	64.2	-8.2	18.8	5.10E-06	1.2	1	1.2
12/17/2008 04:41.02	21.0	10.8	58.4	-10.2	19.8	5.25E-06	1.0	1	1
12/17/2008 05:51.52	22.0	9.7	70.5	-12.3	21.0	4.71E-06	1.1	1	1.1
12/17/2008 07:01.37	23.0	8.6	69.9	-14.4	22.1	4.91E-06	1.1	1	1.1
12/17/2008 08:10.05	24.0	7.5	68.7	-16.5	23.3	5.16E-06	1.1	1	1.1
12/17/2008 00:00.00	0.0	24.9	0.0	24.9	23.3				
12/17/2008 00:04.95	4.0	21.6	5.0	17.6	23.4	1.56E-04	0.8	4	3.3
12/17/2008 01:34.95	8.0	19.3	90.0	11.3	24.9	7.97E-06	0.6	4	2.3
12/17/2008 03:01.84	10.0	17.3	86.9	7.3	26.3	5.55E-06	1.0	2	2
12/17/2008 03:46.95	11.0	16.3	45.1	5.3	27.1	5.53E-06	1.0	1	1
12/17/2008 04:35.75	12.0	15.2	48.8	3.2	27.9	5.51E-06	1.1	1	1.1
12/17/2008 05:27.14	13.0	14.1	51.4	1.1	28.7	5.37E-06	1.1	1	1.1
12/17/2008 06:13.64	14.0	13.0	46.5	-1.0	29.5	6.09E-06	1.1	1	1.1
12/17/2008 07:09.78	15.0	11.8	56.1	-3.2	30.4	5.44E-06	1.2	1	1.2
12/17/2008 08:08.05	16.0	10.6	58.3	-5.4	31.4	5.40E-06	1.2	1	1.2
12/17/2008 09:07.15	17.0	9.6	59.1	-7.4	32.4	4.98E-06	1.0	1	1
12/17/2008 10:08.14	18.0	8.5	61.0	-9.5	33.4	5.22E-06	1.1	1	1.1
12/17/2008 11:08.62	19.0	7.5	60.5	-11.5	34.4	5.17E-06	1.0	1	1
12/17/2008 12:13.14	20.0	6.4	64.5	-13.6	35.5	5.24E-06	1.1	1	1.1
12/17/2008 13:19.64	21.0	5.4	66.5	-15.6	36.6	5.00E-06	1.0	1	1
12/17/2008 14:28.18	22.0	4.3	68.5	-17.7	37.8	5.27E-06	1.1	1	1.1
12/17/2008 15:40.62	23.0	3.2	72.4	-19.8	39.0	5.17E-06	1.1	1	1.1
12/17/2008 16:53.52	24.0	2.2	72.9	-21.8	40.2	5.07E-06	1.0	1	1



Hydraulic Conductivity Test - Polson - Store-and-Release Cover

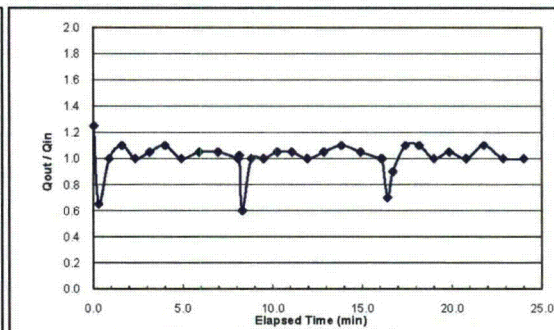
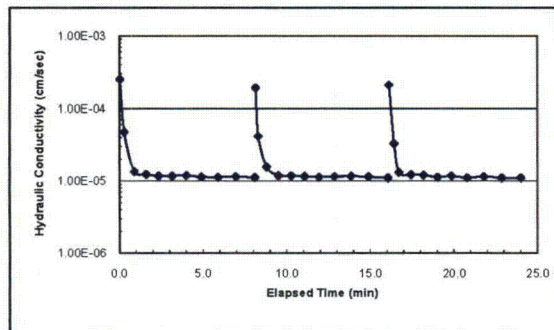
ASTM D 5084 - 00

Sample I.D.	305-mm Alt Upper Silt-2	Test Date :	11/12/08
Cell Pressure =	42.0 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.1 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	1.1 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	5.0	a _{out} =	1 cm ²
Weight of wet sample =	18000.0 g	Sample Water Content =	4.4% (%)
Wet Density =	1.6 g/cm ³	Dry Density =	1.62 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
CC	30.84	171.15	165.22	4.41%

Date, Time	Inflow	Outflow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
11/12/2008 00:00.00	0.0	24.9	0.0	24.9	0.0				
11/12/2008 00:01.90	2.0	22.4	1.9	20.4	0.0	2.50E-04	1.3	2	2.5
11/12/2008 00:17.62	6.0	19.8	15.7	13.8	0.3	4.70E-05	0.6	4	2.6
11/12/2008 00:53.03	8.0	17.8	35.4	9.8	0.9	1.34E-05	1.0	2	2
11/12/2008 01:35.48	10.0	15.6	42.4	5.6	1.6	1.23E-05	1.1	2	2.2
11/12/2008 02:20.40	12.0	13.6	44.9	1.6	2.3	1.17E-05	1.0	2	2
11/12/2008 03:08.34	14.0	11.5	47.9	-2.5	3.1	1.18E-05	1.1	2	2.1
11/12/2008 03:59.60	16.0	9.3	51.3	-6.7	4.0	1.20E-05	1.1	2	2.2
11/12/2008 04:54.09	18.0	7.3	54.5	-10.7	4.9	1.14E-05	1.0	2	2
11/12/2008 05:53.98	20.0	5.2	59.9	-14.8	5.9	1.13E-05	1.1	2	2.1
11/12/2008 06:56.88	22.0	3.1	62.9	-18.9	6.9	1.15E-05	1.1	2	2.1
11/12/2008 08:04.49	24.0	1.1	67.6	-22.9	8.1	1.12E-05	1.0	2	2
11/12/2008 00:00.00	0.0	24.9	0.0	24.9	8.1				
11/12/2008 00:04.57	4.0	20.8	4.6	16.8	8.2	1.91E-04	1.0	4	4.1
11/12/2008 00:13.40	6.0	19.6	8.8	13.6	8.3	4.14E-05	0.6	2	1.2
11/12/2008 00:43.60	8.0	17.6	30.2	9.6	8.8	1.58E-05	1.0	2	2
11/12/2008 01:25.56	10.0	15.6	42.0	5.6	9.5	1.19E-05	1.0	2	2
11/12/2008 02:11.16	12.0	13.5	45.6	1.5	10.3	1.18E-05	1.1	2	2.1
11/12/2008 02:59.88	14.0	11.4	48.7	-2.6	11.1	1.16E-05	1.1	2	2.1
11/12/2008 03:51.59	16.0	9.4	51.7	-6.6	11.9	1.13E-05	1.0	2	2
11/12/2008 04:46.80	18.0	7.3	55.2	-10.7	12.9	1.15E-05	1.1	2	2.1
11/12/2008 05:46.35	20.0	5.1	59.5	-14.9	13.8	1.16E-05	1.1	2	2.2
11/12/2008 06:49.88	22.0	3.0	63.5	-19.0	14.9	1.14E-05	1.1	2	2.1
11/12/2008 07:58.50	24.0	1.0	68.6	-23.0	16.0	1.10E-05	1.0	2	2
11/12/2008 00:00.00	0.0	24.7	0.0	24.7	16.0				
11/12/2008 00:04.15	4.0	20.7	4.2	16.7	16.1	2.08E-04	1.0	4	4
11/12/2008 00:22.16	7.0	18.6	18.0	11.6	16.4	3.27E-05	0.7	3	2.1
11/12/2008 00:39.48	8.0	17.7	17.3	9.7	16.7	1.32E-05	0.9	1	0.9
11/12/2008 01:22.21	10.0	15.5	42.7	5.5	17.4	1.23E-05	1.1	2	2.2
11/12/2008 02:07.94	12.0	13.3	45.7	1.3	18.2	1.21E-05	1.1	2	2.2
11/12/2008 02:57.01	14.0	11.3	49.1	-2.7	19.0	1.13E-05	1.0	2	2
11/12/2008 03:48.18	16.0	9.2	51.2	-6.8	19.9	1.17E-05	1.1	2	2.1
11/12/2008 04:44.22	18.0	7.2	56.0	-10.8	20.8	1.11E-05	1.0	2	2
11/12/2008 05:44.42	20.0	5.0	60.2	-15.0	21.8	1.15E-05	1.1	2	2.2
11/12/2008 06:48.74	22.0	3.0	64.3	-19.0	22.9	1.10E-05	1.0	2	2
11/12/2008 07:57.56	24.0	1.0	68.8	-23.0	24.0	1.10E-05	1.0	2	2



Hydraulic Conductivity Test - Polson - Store-and-Release Cover

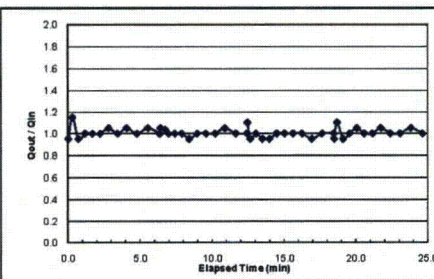
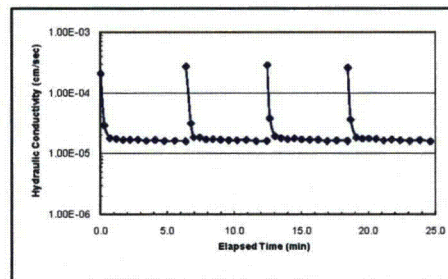
ASTM D 5084 - 00

Sample I.D. 305-mm Alt Upper Silt-3		Test Date : 11/12/08	
Cell Pressure =	42.0 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.1 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	1.1 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	5.0	a _{out} =	1 cm ²
Weight of wet sample =	18000.0 g	Sample Water Content =	5.8% (%)
Wet Density =	1.6 g/cm ³	Dry Density =	1.62 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
#1	30.92	142.34	136.26	5.77%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
11/12/2008 00:00.00	0.0	24.5	0.0	24.5	0.0				
11/12/2008 00:01.96	2.0	22.6	2.0	20.6	0.0	2.10E-04	0.9	2	1.9
11/12/2008 00:18.37	4.0	20.3	16.4	16.3	0.3	2.89E-05	1.2	2	2.3
11/12/2008 00:43.86	6.0	18.4	25.5	12.4	0.7	1.76E-05	1.0	2	1.9
11/12/2008 01:11.74	8.0	16.4	27.9	8.4	1.2	1.73E-05	1.0	2	2
11/12/2008 01:42.35	10.0	14.4	30.6	4.4	1.7	1.65E-05	1.0	2	2
11/12/2008 02:14.29	12.0	12.4	31.9	0.4	2.2	1.66E-05	1.0	2	2
11/12/2008 02:48.77	14.0	10.3	34.5	-3.7	2.8	1.67E-05	1.1	2	2.1
11/12/2008 03:25.75	16.0	8.3	37.0	-7.7	3.4	1.60E-05	1.0	2	2
11/12/2008 04:04.81	18.0	6.2	39.1	-11.8	4.1	1.65E-05	1.1	2	2.1
11/12/2008 04:47.16	20.0	4.2	42.4	-15.8	4.8	1.58E-05	1.0	2	2
11/12/2008 05:33.05	22.0	2.1	45.9	-19.9	5.6	1.60E-05	1.1	2	2.1
11/12/2008 06:22.12	24.0	0.1	49.1	-23.9	6.4	1.57E-05	1.0	2	2
11/12/2008 00:00.00	0.0	24.9	0.0	24.9	6.4				
11/12/2008 00:01.58	2.0	22.8	1.6	20.8	6.4	2.74E-04	1.1	2	2.1
11/12/2008 00:23.25	5.0	19.7	21.7	14.7	6.8	3.13E-05	1.0	3	3.1
11/12/2008 00:36.95	6.0	18.7	12.7	12.7	7.0	1.83E-05	1.0	1	1
11/12/2008 01:02.30	8.0	16.7	26.4	8.7	7.4	1.82E-05	1.0	2	2
11/12/2008 01:32.10	10.0	14.7	29.9	4.7	7.9	1.69E-05	1.0	2	2
11/12/2008 02:02.55	12.0	12.8	30.4	0.8	8.4	1.69E-05	0.9	2	1.9
11/12/2008 02:35.96	14.0	10.8	33.4	-3.2	9.0	1.67E-05	1.0	2	2
11/12/2008 03:11.85	16.0	8.8	35.9	-7.2	9.6	1.64E-05	1.0	2	2
11/12/2008 03:50.10	18.0	6.8	38.2	-11.2	10.2	1.63E-05	1.0	2	2
11/12/2008 04:31.27	20.0	4.7	41.2	-15.3	10.9	1.65E-05	1.1	2	2.1
11/12/2008 05:16.20	22.0	2.7	44.9	-19.3	11.6	1.58E-05	1.0	2	2
11/12/2008 06:04.08	24.0	0.7	47.9	-23.3	12.4	1.59E-05	1.0	2	2
11/12/2008 00:00.00	0.0	24.9	0.0	24.9	12.4				
11/12/2008 00:01.54	2.0	22.7	1.5	20.7	12.5	2.88E-04	1.1	2	2.2
11/12/2008 00:12.94	4.0	20.8	11.4	16.8	12.7	3.76E-05	0.9	2	1.9
11/12/2008 00:37.11	6.0	18.8	24.2	12.8	13.1	1.90E-05	1.0	2	2
11/12/2008 01:03.64	8.0	16.9	26.5	8.9	13.5	1.76E-05	1.0	2	1.9
11/12/2008 01:32.50	10.0	15.0	28.9	5.0	14.0	1.70E-05	0.9	2	1.9
11/12/2008 02:02.76	12.0	13.0	30.3	1.0	14.5	1.74E-05	1.0	2	2
11/12/2008 02:35.62	14.0	11.0	32.9	-3.0	15.0	1.69E-05	1.0	2	2
11/12/2008 03:11.08	16.0	9.0	35.5	-7.0	15.6	1.66E-05	1.0	2	2
11/12/2008 03:48.59	18.0	7.0	37.5	-11.0	16.2	1.66E-05	1.0	2	2
11/12/2008 04:29.35	20.0	5.1	40.8	-14.9	16.9	1.58E-05	1.0	2	1.9
11/12/2008 05:12.95	22.0	3.1	43.6	-18.9	17.7	1.62E-05	1.0	2	2
11/12/2008 06:00.70	24.0	1.1	47.8	-22.9	18.4	1.58E-05	1.0	2	2
11/12/2008 00:00.00	0.0	24.9	0.0	24.9	18.4				
11/12/2008 00:01.58	2.0	23.0	1.6	21.0	18.5	2.60E-04	0.9	2	1.9
11/12/2008 00:14.49	4.0	20.8	12.9	16.8	18.7	3.57E-05	1.1	2	2.2
11/12/2008 00:39.17	6.0	18.9	24.7	12.9	19.1	1.81E-05	1.0	2	1.9
11/12/2008 01:06.82	8.0	16.9	27.7	8.9	19.6	1.73E-05	1.0	2	2
11/12/2008 01:36.56	10.0	14.8	29.7	4.8	20.1	1.73E-05	1.1	2	2.1
11/12/2008 02:07.43	12.0	12.8	30.9	0.8	20.6	1.71E-05	1.0	2	2
11/12/2008 02:41.86	14.0	10.8	34.4	-3.2	21.1	1.62E-05	1.0	2	2
11/12/2008 03:17.85	16.0	8.7	36.0	-7.3	21.7	1.68E-05	1.1	2	2.1
11/12/2008 03:56.20	18.0	6.7	38.4	-11.3	22.4	1.63E-05	1.0	2	2
11/12/2008 04:37.79	20.0	4.7	41.6	-15.3	23.1	1.60E-05	1.0	2	2
11/12/2008 05:22.22	22.0	2.6	44.4	-19.4	23.8	1.64E-05	1.1	2	2.1
11/12/2008 06:11.20	24.0	0.6	49.0	-23.4	24.6	1.56E-05	1.0	2	2



Hydraulic Conductivity Test - Polson - Store-and-Release Cover

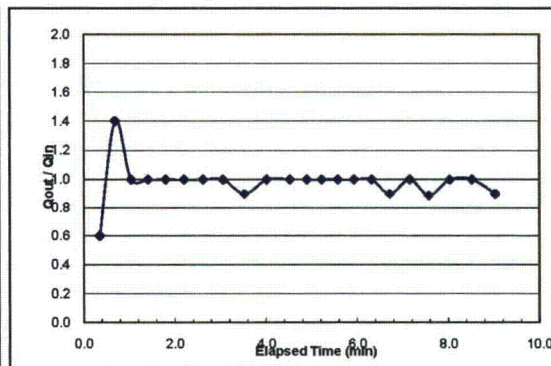
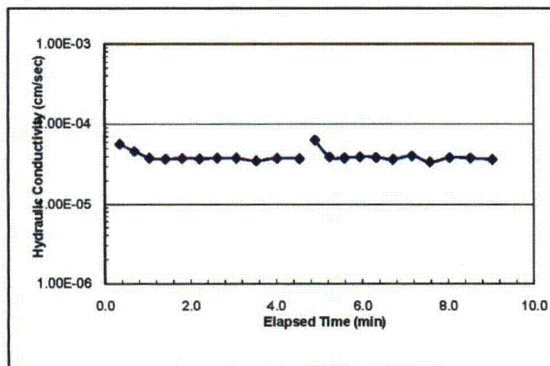
ASTM D 5084 - 00

Sample I.D.	150-mm Polson Alt Upper Silt-3	Test Date :	1/13/09
Cell Pressure = 42.0	psi	Diameter of Sample, D = 15.2	cm
Inflow Pressure = 40.5	psi	Length of Sample, L = 7.6	cm
Outflow Pressure = 40.0	psi	Area of Sample, A = 182.41	cm ²
Pressure Difference = 0.5	psi	Sample Volume, V = 1390.0	cm ³
Effective Stress = 1.8	psi	a _{in} = 1	cm ²
Hydraulic Gradient, i = 4.6		a _{out} = 1	cm ²
Weight of wet sample = 2504.8	g	Sample Water Content = 28.9%	(%)
Wet Density = 1.8	g/cm ³	Dry Density = 1.40	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
A	31.07	122.39	101.93	28.87%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	23.0	0.0	23.0	0.0				
0:00:21	2.0	21.8	20.9	19.8	0.3	5.65E-05	0.6	2	1.2
0:00:41	3.0	20.4	20.1	17.4	0.7	4.63E-05	1.4	1	1.4
0:01:02	4.0	19.4	21.1	15.4	1.0	3.85E-05	1.0	1	1
0:01:25	5.0	18.4	22.6	13.4	1.4	3.73E-05	1.0	1	1
0:01:48	6.0	17.4	23.1	11.4	1.8	3.80E-05	1.0	1	1
0:02:12	7.0	16.4	24.3	9.4	2.2	3.77E-05	1.0	1	1
0:02:37	8.0	15.4	24.9	7.4	2.6	3.85E-05	1.0	1	1
0:03:03	9.0	14.4	26.3	5.4	3.1	3.82E-05	1.0	1	1
0:03:32	10.0	13.5	28.2	3.5	3.5	3.55E-05	0.9	1	0.9
0:04:01	11.0	12.5	29.0	1.5	4.0	3.83E-05	1.0	1	1
0:04:32	12.0	11.5	31.1	-0.5	4.5	3.77E-05	1.0	1	1
0:00:00	0.0	23.0	-271.7	23.0	4.5				
0:00:24	2.0	21.0	23.6	19.0	4.9	6.31E-05	1.0	2	2
0:00:43	3.0	20.0	19.9	17.0	5.2	3.95E-05	1.0	1	1
0:01:05	4.0	19.0	21.3	15.0	5.6	3.83E-05	1.0	1	1
0:01:26	5.0	18.0	21.5	13.0	5.9	3.96E-05	1.0	1	1
0:01:49	6.0	17.0	22.8	11.0	6.3	3.89E-05	1.0	1	1
0:02:13	7.0	16.1	23.8	9.1	6.7	3.69E-05	0.9	1	0.9
0:02:39	8.1	15.0	26.3	6.9	7.2	4.04E-05	1.0	1.1	1.1
0:03:04	9.0	14.2	25.3	5.2	7.6	3.40E-05	0.9	0.9	0.8
0:03:32	10.0	13.2	27.4	3.2	8.0	3.87E-05	1.0	1	1
0:04:01	11.0	12.2	29.4	1.2	8.5	3.80E-05	1.0	1	1
0:04:32	12.0	11.3	30.5	-0.7	9.0	3.68E-05	0.9	1	0.9



Hydraulic Conductivity Test - Polson - Store-and-Release Cover

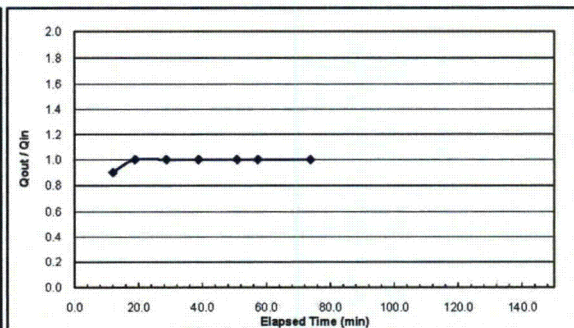
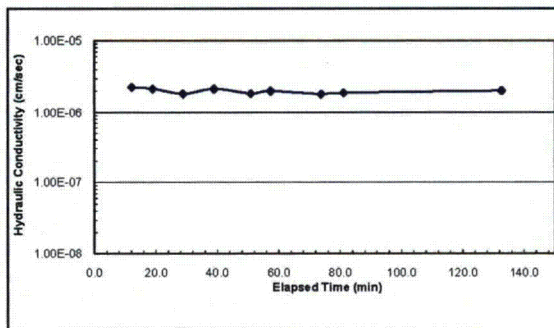
ASTM D 5084 - 00

Sample I.D. 75-mm Polson Alt Upper Silt-3			Test Date : 1/26/09	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	7.0 cm
Inflow Pressure =	40.5	psi	Length of Sample, L =	3.8 cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	38.32 cm ²
Pressure Difference =	0.5	psi	Sample Volume, V =	146.0 cm ³
Effective Stress =	1.8	psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	9.2		a _{out} =	1 cm ²
Weight of wet sample =	275.2	g	Sample Water Content =	30.5% (%)
Wet Density =	1.88	g/cm ³	Dry Density =	1.44 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
64	30.95	124.12	102.33	30.53%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	1.0	24.0	0.0	23.0	0.0				
0:12:03	2.0	23.1	723.2	21.1	12.1	2.28E-06	0.9	1	0.9
0:18:55	2.5	22.6	412.3	20.1	18.9	2.16E-06	1.0	0.5	0.5
0:28:46	3.1	22.0	590.6	18.9	28.8	1.85E-06	1.0	0.6	0.6
0:38:51	3.8	21.3	605.0	17.5	38.9	2.16E-06	1.0	0.7	0.7
0:50:50	4.5	20.6	719.0	16.1	50.8	1.86E-06	1.0	0.7	0.7
0:57:19	4.9	20.2	389.0	15.3	57.3	2.01E-06	1.0	0.4	0.4
1:13:48	5.8	19.3	989.0	13.5	73.8	1.83E-06	1.0	0.9	0.9
1:21:02	6.2	18.9	434.0	12.7	81.0	1.90E-06	1.0	0.4	0.4
2:12:39	9.1	16.1	3097.0	7.0	132.7	2.04E-06	1.0	2.9	2.8



Hydraulic Conductivity Test - Sacramento - Thin Store-and-Release Cover

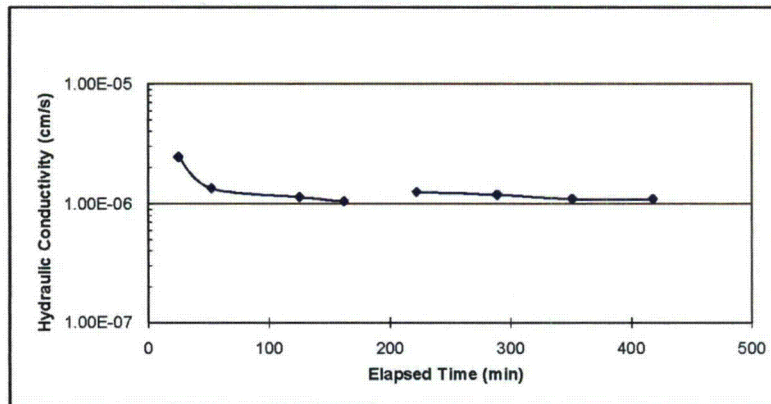
ASTM D 5084 - 00

Sample I.D.	305-mm K#1	Test Date :
Cell Pressure = 20.0 psi		Diameter of Sample, D = 30.5 cm
Inflow Pressure = 17.0 psi		Length of Sample, L = 17.8 cm
Outflow Pressure = 15.0 psi		Area of Sample, A = 730.62 cm ²
Pressure Difference = 2.0 psi		Sample Volume, V = 13005.0 cm ³
Effective Stress = 4.0 psi		a _{in} = 5 cm ²
Hydraulic Gradient, i = 7.9		a _{out} = 5 cm ²
Weight of wet sample = 26308.8 g		Sample Water Content = 27.1 (%)
Wet Density = 2.0 g/cm ³		Dry Density = 1.59 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
7	49.4	383.2	311.96	27.13

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
9:00:00	0.5	22.1	0	21.6	0				
9:25:00	8.1	20.2	1500	12.1	25	2.45E-06	0.3	38	9.5
9:52:00	11.5	18.2	1620	6.7	52	1.35E-06	0.6	17	10
11:05:00	17.9	13	4380	-4.9	125	1.14E-06	0.8	32	26
11:42:00	20.6	10.6	2220	-10	162	1.05E-06	0.9	13.5	12
11:42:00	0.4	23.2	0	22.8	162				
12:42:00	6.8	17.9	3600	11.1	222	1.26E-06	0.8	32	26.5
13:49:00	12.6	12.2	4020	-0.4	289	1.19E-06	1	29	28.5
14:51:00	17.2	7.7	3720	-9.5	351	1.10E-06	1	23	22.5
15:58:00	21.9	3.2	4020	-18.7	418	1.10E-06	1	23.5	22.5



Hydraulic Conductivity Test - Sacramento - Thin Store-and-Release Cover

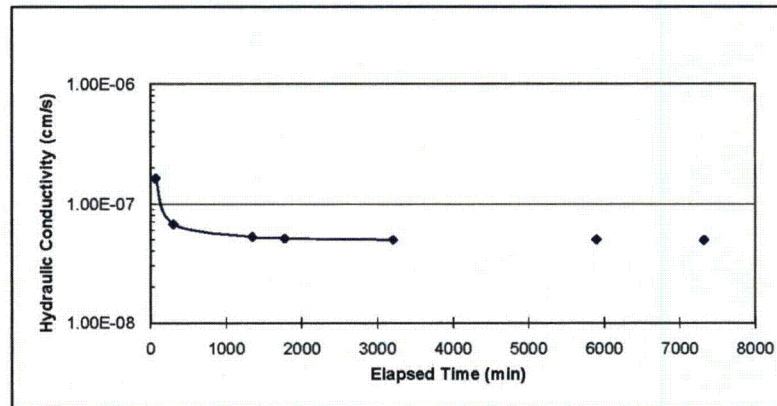
ASTM D 5084 - 00

Sample I.D.	150-mm K#1	Test Date :	12/21/05
Cell Pressure = 20.0	psi	Diameter of Sample, D = 15.2	cm
Inflow Pressure = 17.0	psi	Length of Sample, L = 12.5	cm
Outflow Pressure = 15.0	psi	Area of Sample, A = 181.46	cm ²
Pressure Difference = 2.0	psi	Sample Volume, V = 2268.2	cm ³
Effective Stress = 4.0	psi	a _{in} = 1	cm ²
Hydraulic Gradient, i = 11.3		a _{out} = 1	cm ²
Weight of wet sample = 4776.8	g	Sample Water Content = 17.8	(%)
Wet Density = 2.1	g/cm ³	Dry Density = 1.79	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
4	49.4	441.8	382.64	17.75

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
12/21/2005 11:39	0	24	0	24	0				
12/21/2005 12:45	2.9	23.8	3960	20.9	66	1.64E-07	0.1	14.5	1
12/21/2005 16:40	5.6	22.1	14100	16.5	301	6.71E-08	0.6	13.5	8.5
12/22/2005 10:03	13.4	15.6	62580	2.2	1344	5.22E-08	0.8	39	32.5
12/22/2005 17:09	16.1	13	25560	-3.1	1770	5.07E-08	1	13.5	13
12/23/2005 17:03	24.4	5.3	86040	-19.1	3204	4.92E-08	0.9	41.5	38.5
12/23/2005 17:03	6	23.3	0	17.3	3204				
12/25/2005 13:53	23.2	7.6	161400	-15.6	5894	4.96E-08	0.9	86	78.5
12/25/2005 13:53	9	23.9	0	14.9	5894				
12/26/2005 13:35	18.2	15.2	85320	-3	7316	4.91E-08	0.9	46	43.5
12/27/2005 9:12	24.7	9	70620	-15.7	8493	4.70E-08	1	32.5	31



Hydraulic Conductivity Test - Sacramento - Thin Store-and-Release Cover

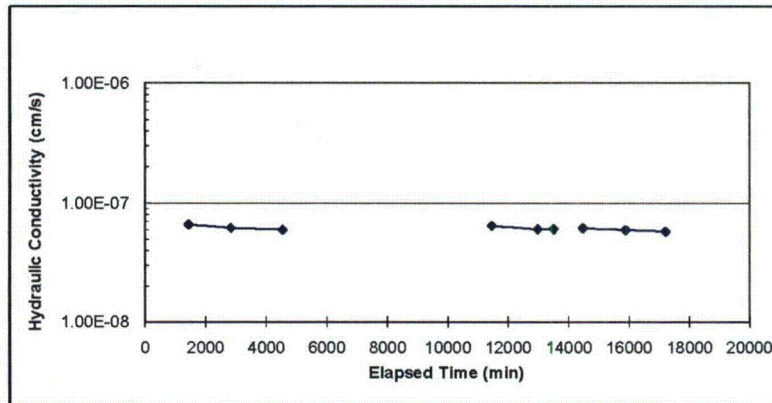
ASTM D 5084 - 00

Sample I.D.	100-mm K#1	Test Date :
Cell Pressure = 20.0 psi	Diameter of Sample, D = 10.2 cm	
Inflow Pressure = 17.0 psi	Length of Sample, L = 10.0 cm	
Outflow Pressure = 15.0 psi	Area of Sample, A = 81.71 cm ²	
Pressure Difference = 2.0 psi	Sample Volume, V = 817.1 cm ³	
Effective Stress = 4.0 psi	a _{in} = 1 cm ²	
Hydraulic Gradient, i = 14.1	a _{out} = 1 cm ²	
Weight of wet sample = 1645.5 g	Sample Water Content = (%)	
Wet Density = 2.0 g/cm ³	Dry Density = 2.01 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
12/28/2005 9:22	0.5	24.1	0	23.6	0.0				
12/29/2005 9:19	8.4	17.5	86220	9.1	1437.0	6.61E-08	0.8	39.5	33
12/30/2005 8:29	14.7	11.8	83400	-2.9	2827.0	6.18E-08	0.9	31.5	28.5
12/31/2005 13:05	21.5	5.5	102960	-16	4543.0	5.99E-08	0.9	34	31.5
1/4/2006 8:45	7	22.4	330000	15.4	10043.0				
1/5/2006 8:17	13.3	15.5	84720	2.2	11455.0	6.43E-08	1.1	31.5	34.5
1/6/2006 9:36	19.5	9.5	91140	-10	12974.0	6.04E-08	1	31	30
1/6/2006 18:23	21.5	7.5	31620	-14	13501.0	6.06E-08	1	10	10
1/6/2006 18:23	7.8	23.8	0	16	13501.0				
1/7/2006 10:27	12.2	19.4	57840	7.2	14465.0	6.16E-08	1	22	22
1/8/2006 10:01	18.1	13.7	84840	-4.4	15879.0	5.94E-08	1	29.5	28.5
1/9/2006 8:05	23.1	8.9	79440	-14.2	17203.0	5.79E-08	1	25	24



Hydraulic Conductivity Test - Sacramento - Thin Store-and-Release Cover

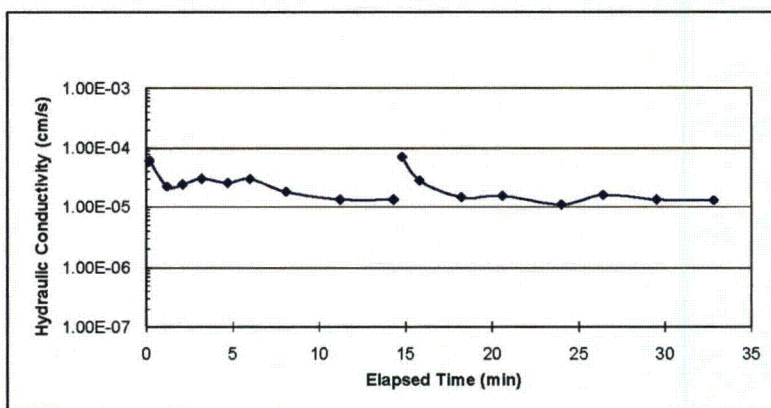
ASTM D 5084 - 00

Sample I.D.	305-mm K#2-L	Test Date :	12/7/05
Cell Pressure = 20.0	psi	Diameter of Sample, D = 30.5	cm
Inflow Pressure = 17.0	psi	Length of Sample, L = 15.2	cm
Outflow Pressure = 15.0	psi	Area of Sample, A = 730.62	cm ²
Pressure Difference = 2.0	psi	Sample Volume, V = 11105.4	cm ³
Effective Stress = 4.0	psi	a _{in} = 5	cm ²
Hydraulic Gradient, i = 9.3		a _{out} = 5	cm ²
Weight of wet sample = 23768.6	g	Sample Water Content = 24.1	(%)
Wet Density = 2.1	g/cm ³	Dry Density = 1.72	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left[\frac{(\Delta H_1)}{(\Delta H_2)} \right]$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
1	50.1	381.1	316.77	24.12

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24	0	24	0				
0:00:10	1.0	23.1	10	22.1	0.2	6.06E-05	0.9	5	4.5
0:01:10	3.0	21	60	18	1.2	2.22E-05	1.05	10	10.5
0:02:04	5.0	19.1	54	14.1	2.1	2.41E-05	0.95	10	9.5
0:03:14	8.0	16	70	8	3.2	3.00E-05	1.03	15	15.5
0:04:40	11.0	12.9	86	1.9	4.7	2.54E-05	1.03	15	15.5
0:05:57	14.0	9.8	77	-4.2	6	2.97E-05	1.03	15	15.5
0:08:05	17.0	6.9	128	-10.1	8.1	1.80E-05	0.97	15	14.5
0:11:10	20.0	3.9	185	-16.1	11.2	1.33E-05	1	15	15
0:14:20	23.0	1	190	-22	14.3	1.33E-05	0.97	15	14.5
0:00:00	0.0	24.5	0	24.5	14.3				
0:00:30	3.0	21	30	18	14.8	6.99E-05	1.17	15	17.5
0:01:30	6.0	19	60	13	15.8	2.79E-05	0.67	15	10
0:03:51	9.0	16.1	141	7.1	18.2	1.45E-05	0.97	15	14.5
0:06:15	12.0	13	144	1	20.6	1.53E-05	1	15	15.5
0:09:38	15.0	10.1	203	-4.9	24	1.09E-05	1	15	14.5
0:12:04	18.0	7.2	146	-10.8	26.4	1.59E-05	1	15	14.5
0:15:07	21.0	4.3	183	-16.7	29.5	1.33E-05	1	15	14.5
0:18:25	24.0	1.4	198	-22.6	32.8	1.29E-05	1	15	14.5



Hydraulic Conductivity Test - Sacramento - Thin Store-and-Release Cover

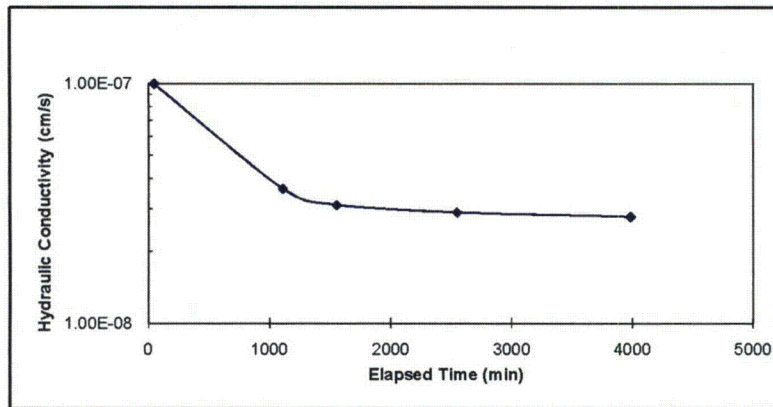
ASTM D 5084 - 00

Sample I.D.	150-mm K#2-L	Test Date :	12/12/05
Cell Pressure = 20.0	psi	Diameter of Sample, D = 15.2	cm
Inflow Pressure = 17.0	psi	Length of Sample, L = 10.0	cm
Outflow Pressure = 15.0	psi	Area of Sample, A = 181.46	cm ²
Pressure Difference = 2.0	psi	Sample Volume, V = 1814.6	cm ³
Effective Stress = 4.0	psi	a _{in} = 1	cm ²
Hydraulic Gradient, i = 14.1		a _{out} = 1	cm ²
Weight of wet sample = 3800.1	g	Sample Water Content = 13.6	(%)
Wet Density = 2.1	g/cm ³	Dry Density = 1.84	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
874	35.1	379.6	338.47	13.56

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
12/12/2005 14:42	0.2	22.7	0	22.5	0				
12/12/2005 15:30	1	21.8	2880	20.8	48	9.97E-08	1.13	4	4.5
12/13/2005 9:13	7.8	15.6	63780	7.8	1111	3.61E-08	0.91	34	31
12/13/2005 16:37	10.2	13.6	26640	3.4	1555	3.10E-08	0.83	12	10
12/14/2005 9:13	15	9.6	59760	-5.4	2551	2.89E-08	0.83	24	20
12/15/2005 9:10	21	4.3	86220	-16.7	3988	2.77E-08	0.88	30	26.5



Hydraulic Conductivity Test - Sacramento - Thin Store-and-Release Cover

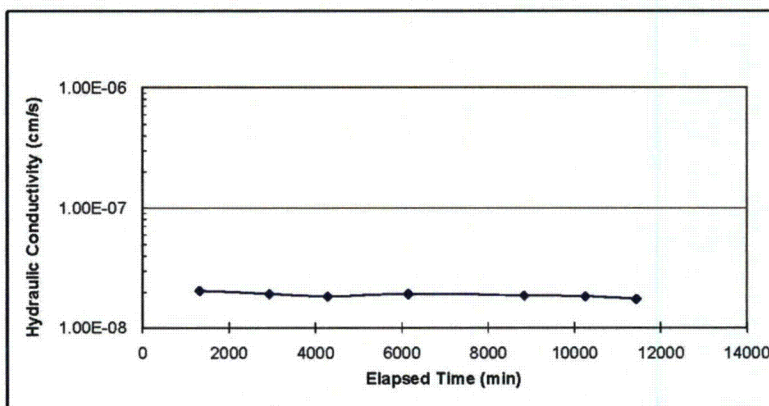
ASTM D 5084 - 00

Sample I.D.	100-mm K#2-L	Test Date :	12/15/05
Cell Pressure = 20.0	psi	Diameter of Sample, D = 10.2	cm
Inflow Pressure = 17.0	psi	Length of Sample, L = 10.0	cm
Outflow Pressure = 15.0	psi	Area of Sample, A = 81.71	cm ²
Pressure Difference = 2.0	psi	Sample Volume, V = 817.1	cm ³
Effective Stress = 4.0	psi	a _{in} = 1	cm ²
Hydraulic Gradient, i = 14.1		a _{out} = 1	cm ²
Weight of wet sample = 1661.6	g	Sample Water Content = 18.8	(%)
Wet Density = 2.0	g/cm ³	Dry Density = 1.71	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
2	50.2	292.2	253.89	18.81

Date, Time	Inflow	Outflow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
12/19/2005 10:33	1.1	24.2	0	23.1	0.0				
12/20/2005 8:37	3.6	22.4	79440	18.8	1324.0	2.07E-08	0.72	12.5	9
12/21/2005 11:35	6	20	97080	14	2942.0	1.94E-08	1	12	12
12/22/2005 10:03	7.9	18.2	80880	10.3	4290.0	1.85E-08	0.95	9.5	9
12/23/2005 17:04	10.4	15.5	111660	5.1	6151.0	1.94E-08	1.08	12.5	13.5
12/25/2005 13:53	14	12.1	161340	-1.9	8840.0	1.88E-08	0.94	18	17
12/26/2005 13:35	15.7	10.3	85320	-5.4	10262.0	1.85E-08	1.06	8.5	9
12/27/2005 9:11	17	8.9	70560	-8.1	11438.0	1.76E-08	1.08	6.5	7



Hydraulic Conductivity Test - Sacramento - Thin Store-and-Release Cover

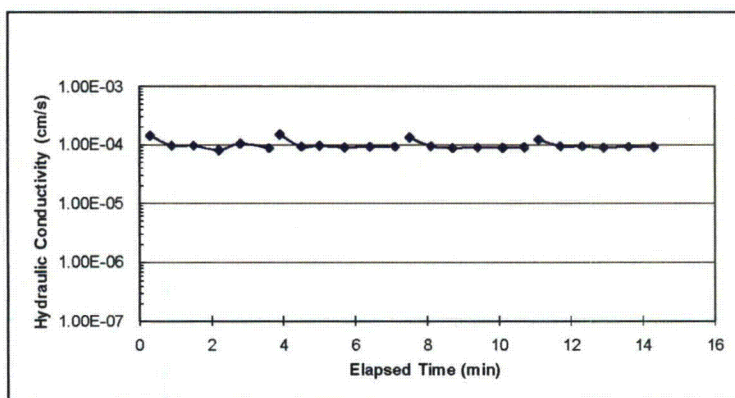
ASTM D 5084 - 00

Sample I.D.	305-mm K#3-L	Test Date :	12/19/05
Cell Pressure = 20.0	psi	Diameter of Sample, D = 30.5	cm
Inflow Pressure = 17.0	psi	Length of Sample, L = 17.8	cm
Outflow Pressure = 15.0	psi	Area of Sample, A = 730.62	cm ²
Pressure Difference = 2.0	psi	Sample Volume, V = 13005.0	cm ³
Effective Stress = 4.0	psi	a _{in} = 5	cm ²
Hydraulic Gradient, i = 7.9		a _{out} = 5	cm ²
Weight of wet sample = 24040.8	g	Sample Water Content = 21.4	(%)
Wet Density = 1.8	g/cm ³	Dry Density = 1.52	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left[\frac{(\Delta H_1)}{(\Delta H_2)} \right]$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
874	34.8	316	266.48	21.37

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24	0	24	0				
0:00:20	4.0	20.5	20	16.5	0.3	1.42E-04	0.9	20	17.5
0:00:53	8.0	16.5	33	8.5	0.9	9.64E-05	1	20	20
0:01:28	12.0	12.5	35	0.5	1.5	9.59E-05	1	20	20
0:02:11	16.0	8.7	43	-7.3	2.2	8.05E-05	1	20	19
0:02:48	20.0	4.5	37	-15.5	2.8	1.04E-04	1.1	20	21
0:03:34	24.0	0.5	46	-23.5	3.6	8.75E-05	1	20	20
0:00:00	0.0	24.3	0	24.3	3.6				
0:00:20	4.0	20.5	20	16.5	3.9	1.48E-04	1	20	19
0:00:53	8.0	16.8	33	8.8	4.5	9.27E-05	0.9	20	18.5
0:01:28	12.0	12.8	35	0.8	5	9.58E-05	1	20	20
0:02:07	16.0	8.9	39	-7.1	5.7	8.98E-05	1	20	19.5
0:02:49	20.0	4.7	42	-15.3	6.4	9.19E-05	1.1	20	21
0:03:33	24.0	0.6	44	-23.4	7.1	9.25E-05	1	20	20.5
0:00:00	0.0	24.2	0	24.2	7.1				
0:00:25	4.0	19.5	25	15.5	7.5	1.32E-04	1.2	20	23.5
0:00:59	8.0	15.5	34	7.5	8.1	9.42E-05	1	20	20
0:01:35	12.0	12	36	0	8.7	8.79E-05	0.9	20	17.5
0:02:16	16.0	7.8	41	-8.2	9.4	8.92E-05	1.1	20	21
0:02:59	20.0	3.8	43.0	-16.2	10.1	8.83E-05	1.0	20	20
0:03:33	23.0	0.7	34.0	-22.3	10.7	9.00E-05	1.0	15	15.5
0:00:00	0.0	24.0	0.0	24.0	10.7				
0:00:25	4.0	20.0	25.0	16.0	11.1	1.21E-04	1.0	20	20
0:00:59	8.0	16.0	34.0	8.0	11.7	9.39E-05	1.0	20	20
0:01:35	12.0	12.0	36.0	0.0	12.3	9.36E-05	1.0	20	20
0:02:15	16.0	8.0	40.0	-8.0	12.9	8.92E-05	1.0	20	20
0:02:57	20.0	3.8	42.0	-16.2	13.6	9.25E-05	1.1	20	21
0:03:40	24.0	0.0	43.0	-24.0	14.3	9.17E-05	1.0	20	19



Hydraulic Conductivity Test - Sacramento - Thin Store-and-Release Cover

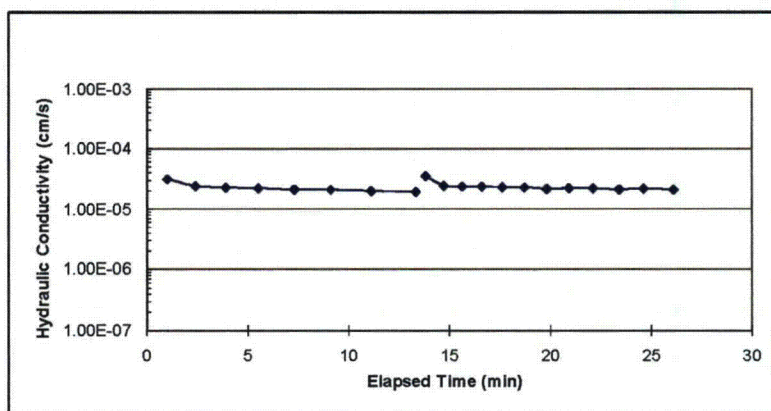
ASTM D 5084 - 00

Sample I.D.	305-mm K#5-L	Test Date :	12/7/05
Cell Pressure = 20.0	psi	Diameter of Sample, D = 30.5	cm
Inflow Pressure = 17.0	psi	Length of Sample, L = 15.2	cm
Outflow Pressure = 15.0	psi	Area of Sample, A = 730.62	cm ²
Pressure Difference = 2.0	psi	Sample Volume, V = 11105.4	cm ³
Effective Stress = 4.0	psi	a _{in} = 5	cm ²
Hydraulic Gradient, i = 9.3		a _{out} = 5	cm ²
Weight of wet sample = 22770.7	g	Sample Water Content = 15.7	(%)
Wet Density = 2.1	g/cm ³	Dry Density = 1.77	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
874	34.9	314.4	276.57	15.65

Date, Time	Inflow	Outflow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24	0	24	0				
0:00:58	3.0	21.4	58	18.4	1	3.12E-05	0.9	15	13
0:02:21	6.0	18.4	83	12.4	2.4	2.42E-05	1	15	15
0:03:51	9.0	15.5	90	6.5	3.9	2.28E-05	1	15	14.5
0:05:29	12.0	12.5	98	0.5	5.5	2.22E-05	1	15	15
0:07:16	15.0	9.5	107	-5.5	7.3	2.12E-05	1	15	15
0:09:07	18.0	6.6	111	-11.4	9.1	2.10E-05	1	15	14.5
0:11:06	21.0	3.8	119	-17.2	11.1	2.01E-05	0.9	15	14
0:13:20	24.0	0.8	134	-23.2	13.3	1.94E-05	1	15	15
0:00:00	0.0	24.5	0	24.5	13.3				
0:00:30	2.0	23.2	30	21.2	13.8	3.51E-05	0.7	10	6.5
0:01:22	4.0	21.3	52	17.3	14.7	2.45E-05	0.9	10	9.5
0:02:18	6.0	19.3	56	13.3	15.6	2.39E-05	1	10	10
0:03:16	8.0	17.3	58	9.3	16.6	2.37E-05	1	10	10
0:04:17	10.0	15.3	61	5.3	17.6	2.31E-05	1	10	10
0:05:20	12.0	13.3	63	1.3	18.7	2.30E-05	1	10	10
0:06:29	14.0	11.3	69	-2.7	19.8	2.16E-05	1	10	10
0:07:36	16.0	9.4	67	-6.6	20.9	2.23E-05	1	10	9.5
0:08:46	18.0	7.5	70	-10.5	22.1	2.20E-05	1	10	9.5
0:10:03	20.0	5.5	77.0	-14.5	23.4	2.12E-05	1.0	10	10
0:11:18	22.0	3.6	75.0	-18.4	24.6	2.19E-05	1.0	10	9.5
0:12:43	24.0	1.5	85.0	-22.5	26.1	2.10E-05	1.1	10	10.5



Hydraulic Conductivity Test - Sacramento - Thick Store-and-Release Cover

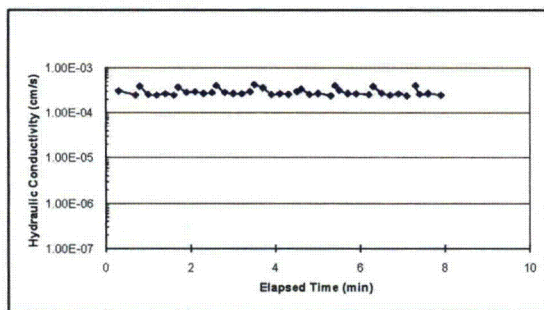
ASTM D 5084 - 00

Sample I.D.	305-mm K#4-L	Test Date :	11/29/05
Cell Pressure =	20.0 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	17.0 psi	Length of Sample, L =	16.5 cm
Outflow Pressure =	15.0 psi	Area of Sample, A =	730.62 cm ²
Pressure Difference =	2.0 psi	Sample Volume, V =	12055.2 cm ³
Effective Stress =	4.0 psi	a _{in} =	4 cm ²
Hydraulic Gradient, i =	8.5	a _{out} =	4 cm ²
Weight of wet sample =	20185.2 g	Sample Water Content =	24.2 (%)
Wet Density =	1.7 g/cm ³	Dry Density =	1.35 g/cm ³

$$K_s = \frac{a_{in} * a_{out} * L}{(a_{in} + a_{out}) * A * \Delta} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
874	34.9	262.3	218.04	24.17

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.0	0	24.0	0				
0:00:15	10.0	18.0	15	8	0.3	3.08E-04	0.6	40	24
0:00:40	20.0	9.0	25	-11	0.7	2.48E-04	0.9	40	36
0:00:00	0.0	24.5	0	24.5	0				
0:00:08	5.0	18.5	8	13.9	0.8	3.90E-04	1.2	20	24
0:00:18	10.0	15.0	10	5	1	2.57E-04	0.7	20	14
0:00:31	15.0	10.0	13	-5	1.2	2.48E-04	1	20	20
0:00:44	20.0	5.0	13	-15	1.4	2.67E-04	1	20	20
0:00:58	24.0	1.0	12	-23	1.6	2.48E-04	1	16	16
0:00:00	0.0	24.5	0	24.5	1.6				
0:00:08	5.0	19.0	8	14	1.7	3.72E-04	1.1	20	22
0:00:18	10.0	14.5	10	4.5	1.9	2.87E-04	0.9	20	18
0:00:29	15.0	9.5	11	-5.5	2.1	2.94E-04	1	20	20
0:00:42	20.0	4.5	13	-15.5	2.3	2.68E-04	1	20	20
0:00:54	24.5	0.0	12	-24.5	2.5	2.81E-04	1	18	18
0:00:00	0.0	24.5	0	24.5	2.5				
0:00:07	5.0	19.5	7	14.5	2.6	4.04E-04	1	20	20
0:00:17	10.0	15.0	10	5	2.8	2.89E-04	0.9	20	18
0:00:29	15.0	10.0	12	-5	3	2.68E-04	1	20	20
0:00:42	20.0	5.0	13.0	-15.0	3.2	2.67E-04	1.0	20	20
0:00:54	24.5	0.0	12.0	-24.5	3.4	2.96E-04	1.1	18	20
0:00:00	0.0	24.5	0	24.5	3.4				
0:00:07	5.0	19.0	7.0	14.0	3.5	4.25E-04	1.1	20	22
0:00:15	10.0	14.5	8.0	4.5	3.7	3.59E-04	0.9	20	18
0:00:27	15.0	10.0	12.0	-5.0	3.9	2.55E-04	0.9	20	18
0:00:40	20.0	5.0	13.0	-15.0	4.1	2.67E-04	1.0	20	20
0:00:53	24.5	0.5	13.0	-24.0	4.3	2.59E-04	1.0	18	18
0:00:00	0.0	24.5	0.0	24.5	4.3				
0:00:10	5.0	19.0	10.0	14.0	4.5	2.97E-04	1.1	20	22
0:00:19	10.0	14.0	9.0	4.0	4.6	3.36E-04	1.0	20	20
0:00:31	15.0	9.5	12.0	-5.5	4.8	2.56E-04	0.9	20	18
0:00:44	20.0	4.5	13.0	-15.5	5.0	2.68E-04	1.0	20	20
0:00:58	24.5	0.0	14.0	-24.5	5.3	2.41E-04	1.0	18	18
0:00:00	0.0	24.5	0.0	24.5	5.3				
0:00:07	5.0	19.5	7.0	14.5	5.4	4.04E-04	1.0	20	20
0:00:16	10.0	15.0	9.0	5.0	5.5	3.18E-04	0.9	20	18
0:00:28	15.0	10.0	12.0	-5.0	5.7	2.68E-04	1.0	20	20
0:00:41	20.0	5.0	13.0	-15.0	5.9	2.67E-04	1.0	20	20
0:00:55	24.5	0.0	14.0	-24.5	6.2	2.54E-04	1.1	18	20
0:00:00	0.0	24.5	0.0	24.5	6.2				
0:00:07	5.0	20.0	7.0	15.0	6.3	3.83E-04	0.9	20	18
0:00:18	10.0	15.0	11.0	5.0	6.5	2.73E-04	1.0	20	20
0:00:31	15.0	10.0	13.0	-5.0	6.7	2.48E-04	1.0	20	20
0:00:44	20.0	5.0	13.0	-15.0	6.9	2.67E-04	1.0	20	20
0:00:58	24.5	0.5	14.0	-24.0	7.1	2.40E-04	1.0	18	18
0:00:00	0.0	24.5	0.0	24.5	7.1				
0:00:07	5.0	19.5	7.0	14.5	7.3	4.04E-04	1.0	20	20
0:00:18	10.0	15.0	11.0	5.0	7.4	2.60E-04	0.9	20	18
0:00:30	15.0	10.0	12.0	-5.0	7.6	2.68E-04	1.0	20	20
0:00:44	20.0	5.0	14.0	-15.0	7.9	2.48E-04	1.0	20	20



Hydraulic Conductivity Test - Sacramento - Thick Store-and-Release Cover

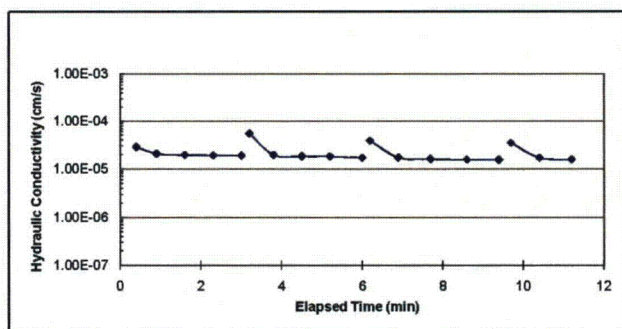
ASTM D 5084 - 00

Sample I.D.	305-mm K#6-L	Test Date :	12/7/05
Cell Pressure = 20.0	psi	Diameter of Sample, D = 30.5	cm
Inflow Pressure = 17.0	psi	Length of Sample, L = 15.2	cm
Outflow Pressure = 15.0	psi	Area of Sample, A = 730.62	cm ²
Pressure Difference = 2.0	psi	Sample Volume, V = 11105.4	cm ³
Effective Stress = 4.0	psi	a _{in} = 1	cm ²
Hydraulic Gradient, i = 9.3		a _{out} = 1	cm ²
Weight of wet sample = 20729.5	g	Sample Water Content = 32.2	(%)
Wet Density = 1.9	g/cm ³	Dry Density = 1.41	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
874	35	342.7	267.68	32.24

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24	0	24	0				
0:00:22	5.0	19.5	22	14.5	0.4	2.82E-05	0.9	5	4.5
0:00:56	10.0	14.5	34	4.5	0.9	2.05E-05	1	5	5
0:01:35	15.0	9.4	39	-5.6	1.6	1.93E-05	1	5	5.1
0:02:18	20.0	4.3	43	-15.7	2.3	1.89E-05	1	5	5.1
0:02:58	24.3	0	40	-24.3	3	1.88E-05	1	4.3	4.3
0:00:00	0.0	24.5	0	24.5	3				
0:00:12	5.0	19.5	12	14.5	3.2	5.44E-05	1	5	5
0:00:48	10.0	14.5	36	4.5	3.8	1.93E-05	1	5	5
0:01:29	15.0	9.5	41	-5.5	4.5	1.82E-05	1	5	5
0:02:14	20.0	4.5	45	-15.5	5.2	1.78E-05	1	5	5
0:02:59	24.3	0	45	-24.3	6	1.69E-05	1	4.3	4.5
0:00:00	0.0	24.5	0	24.5	6				
0:00:17	5.0	19.5	17	14.5	6.2	3.84E-05	1	5	5
0:00:58	10.0	14.5	41	4.5	6.9	1.70E-05	1	5	5
0:01:45	15.0	9.5	47	-5.5	7.7	1.59E-05	1	5	5
0:02:37	20.0	4.5	52	-15.5	8.6	1.54E-05	1	5	5
0:03:28	24.5	0	51	-24.5	9.4	1.53E-05	1	4.5	4.5
0:00:00	0.0	24.5	0	24.5	9.4				
0:00:19	5.0	19.5	19.0	14.5	9.7	3.43E-05	1.0	5	5
0:01:00	10.0	14.8	41.0	4.6	10.4	1.88E-05	1.0	5	4.9
0:01:48	15.0	9.7	48.0	-5.3	11.2	1.54E-05	1.0	5	4.9
0:02:41	20.0	4.5	53.0	-15.5	12.1	1.54E-05	1.0	5	5.2
0:03:36	24.5	0.0	55.0	-24.5	13.0	1.42E-05	1.0	4.5	4.5
0:00:00	0.0	24.5	0.0	24.5	13.0				
0:00:16	5.0	19.2	16.0	14.2	13.3	4.20E-05	1.1	5	5.3
0:00:58	10.0	14.2	42.0	4.2	14.0	1.66E-05	1.0	5	5
0:01:46	15.0	9.2	48.0	-5.8	14.8	1.56E-05	1.0	5	5
0:02:41	20.0	4.0	55.0	-16.0	15.7	1.49E-05	1.0	5	5.2
0:03:28	24.0	0.0	47.0	-24.0	16.5	1.47E-05	1.0	4	4
0:00:00	0.0	24.5	0.0	24.5	16.5				
0:00:18	5.0	19.7	18.0	14.7	16.8	3.55E-05	1.0	5	4.8
0:01:02	10.0	14.8	44.0	4.8	17.5	1.56E-05	1.0	5	4.9
0:01:53	15.0	9.8	51.0	-5.2	18.4	1.46E-05	1.0	5	5
0:02:49	20.0	4.5	56.0	-15.5	19.3	1.47E-05	1.1	5	5.3
0:03:45	24.5	0.0	56.0	-24.5	20.2	1.39E-05	1.0	4.5	4.5
0:00:00	0.0	24.5	0.0	24.5	20.2				
0:00:17	5	20	17	15	20.5	3.64E-05	0.9	5	4.5
0:01:03	10	15	46	5	21.3	1.51E-05	1	5	5
0:01:55	15	10	52	-5	22.2	1.43E-05	1	5	5
0:02:52	20	5	57	-15	23.1	1.40E-05	1	5	5
0:03:52	25	0	60	-25	24.1	1.44E-05	1	5	5



Hydraulic Conductivity Test - Sacramento - Thick Store-and-Release Cover

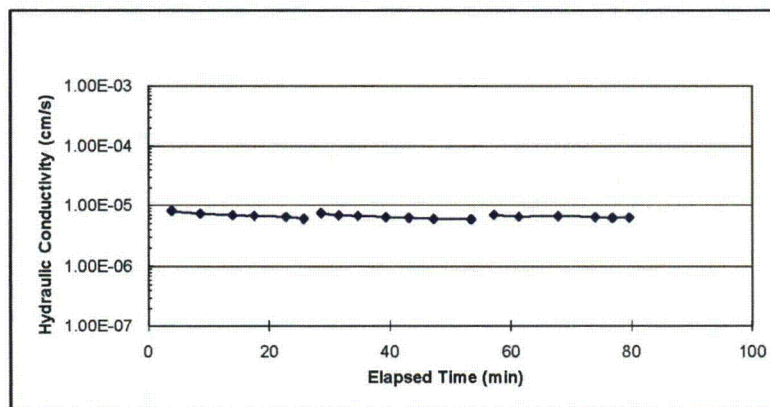
ASTM D 5084 - 00

Sample I.D.	150-mm K#6-L	Test Date :	12/7/05
Cell Pressure = 20.0 psi		Diameter of Sample, D = 15.2 cm	
Inflow Pressure = 17.0 psi		Length of Sample, L = 11.5 cm	
Outflow Pressure = 15.0 psi		Area of Sample, A = 181.46 cm ²	
Pressure Difference = 2.0 psi		Sample Volume, V = 2086.8 cm ³	
Effective Stress = 4.0 psi		a _{in} = 1 cm ²	
Hydraulic Gradient, i = 12.2		a _{out} = 1 cm ²	
Weight of wet sample = 4042.5 g		Sample Water Content = 31.1 (%)	
Wet Density = 1.9 g/cm ³		Dry Density = 1.48 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
10	51	399.95	317.17	31.10

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24	0	24	0				
0:03:47	5.0	19.7	227	14.7	3.8	8.07E-06	0.9	5	4.3
0:08:29	10.0	14.9	282	4.9	8.5	7.28E-06	1	5	4.8
0:13:53	15.0	10	324	-5	13.9	6.85E-06	1	5	4.9
0:17:30	18.0	6.9	217	-11.1	17.5	6.68E-06	1	3	3.1
0:22:49	22.0	2.8	319	-19.2	22.8	6.38E-06	1	4	4.1
0:25:41	24.0	0.9	172	-23.1	25.7	5.98E-06	1	2	1.9
0:00:00	0.8	24.5	0	23.7	25.7				
0:02:52	4.0	21.2	172	17.2	28.6	7.39E-06	1	3.2	3.3
0:05:48	7.0	18.3	176	11.3	31.5	6.82E-06	1	3	2.9
0:08:58	10.0	15.3	190	5.3	34.7	6.68E-06	1	3	3
0:13:37	14.0	11.3	279	-2.7	39.3	6.37E-06	1	4	4
0:17:23	17.0	8.3	226	-8.7	43.1	6.20E-06	1	3	3
0:21:29	20.0	5.3	246	-14.7	47.2	5.96E-06	1	3	3
0:27:45	24.2	1	376	-23.2	53.4	5.86E-06	1	4.2	4.3
0:00:00	0.0	24.5	0	24.5	53.4				
0:03:43	4.0	20.6	223	16.6	57.2	6.93E-06	1	4	3.9
0:07:51	8.0	16.8	248	8.8	61.3	6.47E-06	1	4	3.8
0:14:24	14.0	10.9	393	-3.1	67.8	6.65E-06	1	6	5.9
0:20:36	19.0	6.0	372.0	-13.0	74.0	6.33E-06	1.0	5	4.9
0:23:23	21.0	3.9	167.0	-17.1	76.8	6.16E-06	1.1	2	2.1
0:26:10	23.0	1.9	167.0	-21.1	79.6	6.21E-06	1.0	2	2



Hydraulic Conductivity Test - Sacramento - Thick Store-and-Release Cover

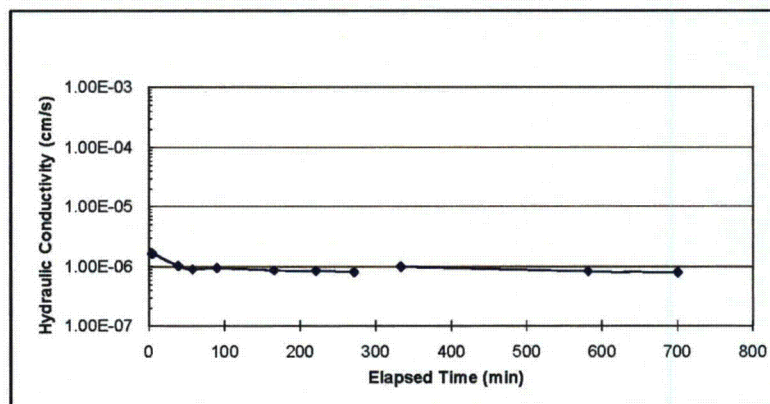
ASTM D 5084 - 00

Sample I.D.	100-mm K#6-L	Test Date :
Cell Pressure = 20.0 psi		Diameter of Sample, D = 10.2 cm
Inflow Pressure = 17.0 psi		Length of Sample, L = 11.5 cm
Outflow Pressure = 15.0 psi		Area of Sample, A = 81.71 cm ²
Pressure Difference = 2.0 psi		Sample Volume, V = 939.7 cm ³
Effective Stress = 4.0 psi		a _{in} = 1 cm ²
Hydraulic Gradient, i = 12.2		a _{out} = 1 cm ²
Weight of wet sample = 1812.6 g		Sample Water Content = (%)
Wet Density = 1.9 g/cm ³		Dry Density = 1.93 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
10	51.1	292.9		

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.2	24.3	0	24.1	0				
0:04:22	1.0	24.1	262	23.1	4.4	1.65E-06	0.2	0.8	0.2
0:38:35	3.8	22.1	2053	18.3	38.6	1.03E-06	0.7	2.8	2
0:57:44	5.0	21	1149	16	57.7	9.00E-07	0.9	1.2	1.1
1:29:59	7.0	19	1935	12	90	9.48E-07	1	2	2
2:45:30	11.2	15	4531	3.8	165.5	8.64E-07	1	4.2	4
3:41:07	14.1	12.2	3337	-1.9	221.1	8.56E-07	1	2.9	2.8
4:31:33	16.5	9.9	3026	-6.6	271.6	8.08E-07	1	2.4	2.3
0:00:00	0.0	24.1	0	24.1	271.6				
1:02:12	4.8	20.5	3732	15.7	333.8	9.94E-07	0.8	4.8	3.6
5:10:22	17.4	8.1	14890	-9.3	581.9	8.30E-07	1	12.6	12.4
7:09:10	22.4	3	7128	-19.4	700.7	7.96E-07	1	5	5.1



Hydraulic Conductivity Test - Sacramento - Thick Store-and-Release Cover

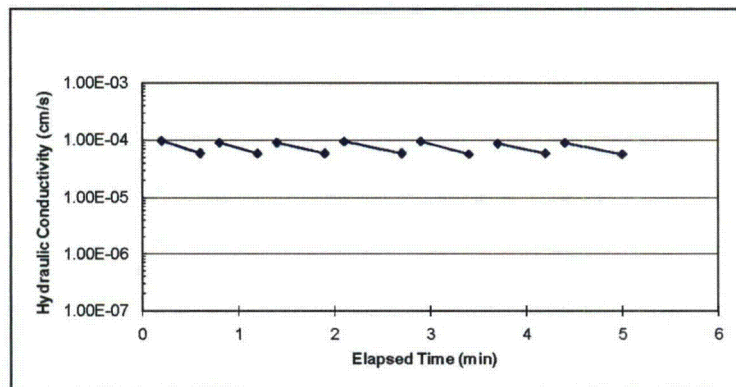
ASTM D 5084 - 00

Sample I.D.	305-mm K#7-L	Test Date :	11/22/05
Cell Pressure = 20.0 psi		Diameter of Sample, D = 30.5 cm	
Inflow Pressure = 17.0 psi		Length of Sample, L = 12.7 cm	
Outflow Pressure = 15.0 psi		Area of Sample, A = 730.62 cm ²	
Pressure Difference = 2.0 psi		Sample Volume, V = 9278.8 cm ³	
Effective Stress = 4.0 psi		a _{in} = 1 cm ²	
Hydraulic Gradient, i = 11.1		a _{out} = 1 cm ²	
Weight of wet sample = 17690.4 g		Sample Water Content = 27.1 (%)	
Wet Density = 1.9 g/cm ³		Dry Density = 1.50 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
10	51.12	480.74	389.15	27.10

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	0.0	24.7	0	24.7	0				
0:00:11	10.0	15.8	11	5.8	0.2	9.60E-05	0.9	10	8.9
0:00:33	20.0	5.5	22	-14.5	0.6	5.90E-05	1	10	10.3
0:00:00	0.0	24.5	0	24.5	0.6				
0:00:14	10.0	12.5	14	2.5	0.8	8.89E-05	1.2	10	12
0:00:37	20.0	2	23	-18	1.2	5.85E-05	1.1	10	10.5
0:00:00	0.0	24.5	0	24.5	1.2				
0:00:13	10.0	14	13	4	1.4	8.87E-05	1.1	10	10.5
0:00:45	24.0	0	32	-24	1.9	5.85E-05	1	14	14
0:00:00	0.0	24.5	0	24.5	1.9				
0:00:12	10.0	14.5	12	4.5	2.1	9.36E-05	1	10	10
0:00:45	24.5	0	33	-24.5	2.7	5.88E-05	1	14.5	14.5
0:00:00	0.0	24.5	0	24.5	2.7				
0:00:12	10.0	14.5	12	4.5	2.9	9.36E-05	1	10	10
0:00:46	24.5	0	34	-24.5	3.4	5.70E-05	1	14.5	14.5
0:00:00	0.0	24.5	0	24.5	3.4				
0:00:13	10.0	14.5	13	4.5	3.7	8.64E-05	1	10	10
0:00:46	24.5	0	33	-24.5	4.2	5.88E-05	1	14.5	14.5
0:00:00	0.0	24.5	0	24.5	4.2				
0:00:13	10.0	14.0	13.0	4.0	4.4	8.87E-05	1.1	10	10.5
0:00:46	24.0	0.0	33.0	-24.0	5.0	5.67E-05	1.0	14	14
0:00:00	0.0	24.5	0.0	24.5	5.0				
0:00:13	10.0	14.5	13.0	4.5	5.2	8.64E-05	1.0	10	10
0:00:47	24.5	0.0	34.0	-24.5	5.8	5.70E-05	1.0	14.5	14.5
0:00:00	0.0	24.5	0.0	24.5	5.8				
0:00:13	10.0	14.0	13.0	4.0	6.0	8.87E-05	1.1	10	10.5
0:00:43	24.0	0.0	30.0	-24.0	6.5	6.24E-05	1.0	14	14
0:00:00	0.0	24.5	0.0	24.5	6.5				
0:00:12	10.0	14.5	12.0	4.5	6.7	9.36E-05	1.0	10	10
0:00:45	24.5	0.0	33.0	-24.5	7.2	5.88E-05	1.0	14.5	14.5



Hydraulic Conductivity Test - Sacramento - Thick Store-and-Release Cover

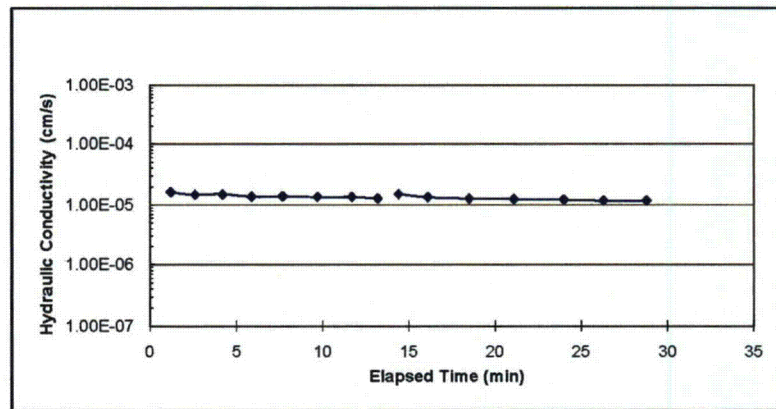
ASTM D 5084 - 00

Sample I.D.	150-mm K#7-L	Test Date :
Cell Pressure = 20.0 psi		Diameter of Sample, D = 15.2 cm
Inflow Pressure = 17.0 psi		Length of Sample, L = 12.7 cm
Outflow Pressure = 15.0 psi		Area of Sample, A = 181.46 cm ²
Pressure Difference = 2.0 psi		Sample Volume, V = 2304.5 cm ³
Effective Stress = 4.0 psi		a _{in} = 1 cm ²
Hydraulic Gradient, i = 11.1		a _{out} = 1 cm ²
Weight of wet sample = 4478.6 g		Sample Water Content = 26.9 (%)
Wet Density = 1.9 g/cm ³		Dry Density = 1.53 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
4	50	412.3	335.61	26.85

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	1.0	23.5	0	22.5	0				
0:01:11	4.0	21.2	71	17.2	1.2	1.62E-05	0.8	3	2.3
0:02:38	7.0	18.5	87	11.5	2.6	1.47E-05	0.9	3	2.7
0:04:10	10.0	15.6	92	5.6	4.2	1.50E-05	1	3	2.9
0:05:55	13.0	12.7	105	-0.3	5.9	1.37E-05	1	3	2.9
0:07:43	16.0	9.8	108	-6.2	7.7	1.38E-05	1	3	2.9
0:09:39	19.0	6.9	116	-12.1	9.7	1.35E-05	1	3	2.9
0:11:40	22.0	4	121	-18	11.7	1.35E-05	1	3	2.9
0:13:10	24.0	2	90	-22	13.2	1.28E-05	1	2	2
0:00:00	0.5	24	0	23.5	13.2				
0:01:16	3.0	21.2	76	18.2	14.4	1.50E-05	1.1	2.5	2.8
0:02:56	6.0	18.2	100	12.2	16.1	1.34E-05	1	3	3
0:05:19	10.0	14.4	143	4.4	18.5	1.27E-05	1	4	3.8
0:07:57	14.0	10.4	158	-3.6	21.1	1.25E-05	1	4	4
0:10:48	18.0	6.4	171	-11.6	24	1.22E-05	1	4	4
0:13:08	21.0	3.4	140	-17.6	26.3	1.18E-05	1	3	3
0:15:36	24.0	0.4	148	-23.6	28.8	1.18E-05	1	3	3



Hydraulic Conductivity Test - Sacramento - Thick Store-and-Release Cover

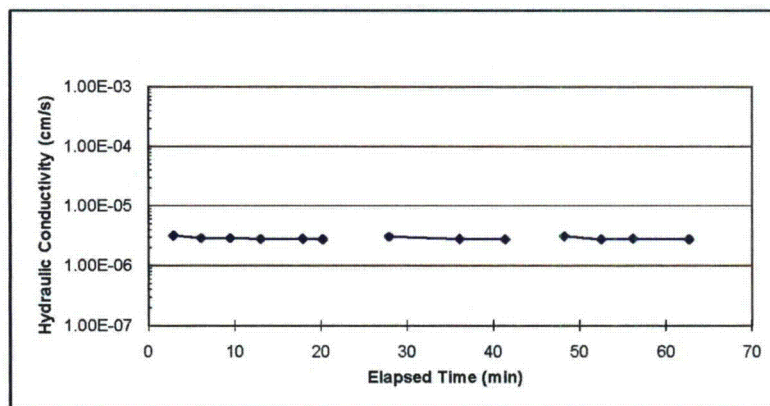
ASTM D 5084 - 00

Sample I.D.	305-mm K#8-L	Test Date :	11/22/05
Cell Pressure = 20.0 psi		Diameter of Sample, D = 30.5 cm	
Inflow Pressure = 17.0 psi		Length of Sample, L = 15.2 cm	
Outflow Pressure = 15.0 psi		Area of Sample, A = 730.62 cm ²	
Pressure Difference = 2.0 psi		Sample Volume, V = 11105.4 cm ³	
Effective Stress = 4.0 psi		a _{in} = 1 cm ²	
Hydraulic Gradient, i = 9.3		a _{out} = 1 cm ²	
Weight of wet sample = 21319.2 g		Sample Water Content = 30.6 (%)	
Wet Density = 1.9 g/cm ³		Dry Density = 1.47 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can	WT of Can + Wet Soil	WT of Can + Dry Soil	Water Content
	(g)	(g)	(g)	(%)
10	51.12	404.58	321.77	30.60

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	23	0	23	0				
0:02:53	4.0	18.6	173	14.6	2.9	3.18E-06	1.1	4	4.4
0:06:04	8.0	14.6	191	6.6	6.1	2.89E-06	1	4	4
0:09:27	12.0	10.6	203	-1.4	9.5	2.87E-06	1	4	4
0:13:01	16.0	6.9	214	-9.1	13	2.78E-06	0.9	4	3.7
0:17:54	21.0	2	293	-19	17.9	2.79E-06	1	5	4.9
0:20:11	23.3	0	137	-23.3	20.2	2.74E-06	0.9	2.3	2
0:00:00	0.0	24.5	0	24.5	20.2				
0:07:44	10.0	13.6	464	3.6	27.9	3.05E-06	1.1	10	10.9
0:15:53	19.0	4.9	489	-14.1	36.1	2.80E-06	1	9	8.7
0:21:15	24.4	0	322	-24.4	41.4	2.75E-06	0.9	5.4	4.9
0:00:00	0.0	25	0	25	41.4				
0:06:46	9.0	15.2	406	6.2	48.2	3.10E-06	1.1	9	9.8
0:11:05	14.0	10.5	259	-3.5	52.5	2.76E-06	0.9	5	4.7
0:14:45	18.0	6.6	220	-11.4	56.2	2.82E-06	1	4	3.9
0:21:14	24.5	0.5	389	-24	62.7	2.75E-06	0.9	6.5	6.1



Hydraulic Conductivity Test - Underwood - Thick Clay Cover

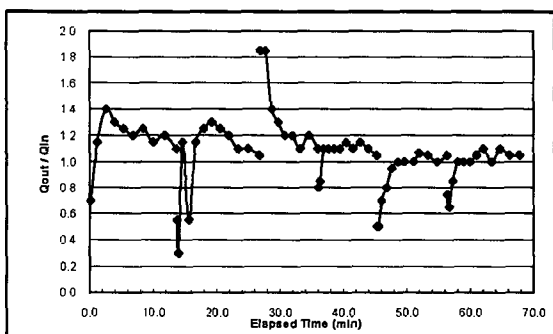
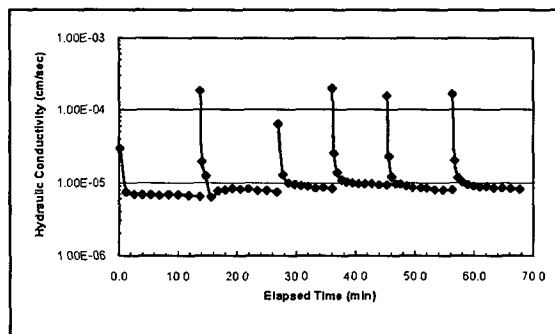
ASTM D 5084 - 00

Sample I.D.		305-mm CC5 - Clay Top 1		Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5	cm
Inflow Pressure =	41.1	psi	Length of Sample, L =	15.2	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66	cm ²
Pressure Difference =	1.1	psi	Sample Volume, V =	11120.0	cm ³
Effective Stress =	1.5	psi	a _{in} =	1	cm ²
Hydraulic Gradient, i =	5.0		a _{out} =	1	cm ²
Weight of wet sample =	24750.0	g	Sample Water Content =	11.6%	(%)
Wet Density =	2.2	g/cm ³	Dry Density =	2.22	g/cm ³

$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$				
Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
NS-2	24.88	162.34	148	11.65%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
9/2/2008 00:00.00	0.0	24.9	0.0	24.9	0.0				
9/2/2008 00:11.88	2.0	23.5	11.9	21.5	0.2	3.01E-05	0.7	2	1.4
9/2/2008 01:15.02	4.0	21.2	63.1	17.2	1.3	7.44E-06	1.2	2	2.3
9/2/2008 02:34.58	6.0	18.4	79.6	12.4	2.6	6.93E-06	1.4	2	2.8
9/2/2008 03:56.41	8.0	15.8	81.8	7.8	3.9	6.80E-06	1.3	2	2.6
9/2/2008 05:21.48	10.0	13.3	85.1	3.3	5.4	6.76E-06	1.3	2	2.5
9/2/2008 06:50.30	12.0	10.9	88.8	-1.1	6.8	6.69E-06	1.2	2	2.4
9/2/2008 08:24.52	14.0	8.4	94.2	-5.6	8.4	6.85E-06	1.3	2	2.5
9/2/2008 10:01.48	16.0	6.1	97.0	-9.9	10.0	6.77E-06	1.2	2	2.3
9/2/2008 11:49.42	18.0	3.7	107.9	-14.3	11.8	6.64E-06	1.2	2	2.4
9/2/2008 13:43.77	20.0	1.5	114.4	-18.5	13.7	6.42E-06	1.1	2	2.2
9/2/2008 00:00.00	0.0	24.7	0.0	24.7	13.7				
9/2/2008 00:01.79	2.0	23.6	1.8	21.6	13.8	1.82E-04	0.5	2	1.1
9/2/2008 00:16.03	4.0	23.0	14.2	19.0	14.0	1.98E-05	0.3	2	0.6
9/2/2008 00:55.03	6.0	20.7	39.0	14.7	14.6	1.24E-05	1.2	2	2.3
9/2/2008 01:52.64	8.0	19.6	57.6	11.6	15.6	6.29E-06	0.5	2	1.1
9/2/2008 03:00.55	10.0	17.3	67.9	7.3	16.7	7.72E-06	1.2	2	2.3
9/2/2008 04:13.75	12.0	14.8	73.2	2.8	18.0	7.90E-06	1.3	2	2.5
9/2/2008 05:29.30	14.0	12.2	75.6	-1.8	19.2	8.29E-06	1.3	2	2.6
9/2/2008 06:48.81	16.0	9.7	79.5	-6.3	20.5	8.19E-06	1.3	2	2.5
9/2/2008 08:11.06	18.0	7.3	82.3	-10.7	21.9	8.26E-06	1.2	2	2.4
9/2/2008 09:39.67	20.0	5.1	88.6	-14.9	23.4	7.81E-06	1.1	2	2.2
9/2/2008 11:14.74	22.0	2.9	95.1	-19.1	25.0	7.80E-06	1.1	2	2.2
9/2/2008 12:58.77	24.0	0.8	104.0	-23.2	26.7	7.48E-06	1.1	2	2.1
9/2/2008 00:00.00	0.0	24.9	0.0	24.9	26.7				
9/2/2008 00:09.46	2.0	21.2	9.5	19.2	26.9	6.41E-05	1.9	2	3.7
9/2/2008 00:59.08	4.0	17.5	49.6	13.5	27.7	1.30E-05	1.9	2	3.7
9/2/2008 01:57.00	6.0	14.7	57.9	8.7	28.7	9.92E-06	1.4	2	2.8
9/2/2008 02:58.00	8.0	12.1	61.0	4.1	29.7	9.54E-06	1.3	2	2.6
9/2/2008 04:03.00	10.0	9.7	65.0	-0.3	30.8	9.05E-06	1.2	2	2.4
9/2/2008 05:13.00	12.0	7.3	70.0	-4.7	31.9	8.91E-06	1.2	2	2.4
9/2/2008 06:28.00	14.0	5.1	75.0	-8.9	33.2	8.43E-06	1.1	2	2.2
9/2/2008 07:50.00	16.0	2.7	82.0	-13.3	34.5	8.61E-06	1.2	2	2.4
9/2/2008 09:17.00	18.0	0.5	87.0	-17.5	36.0	8.30E-06	1.1	2	2.2
9/2/2008 00:00.00	0.0	24.9	0.0	24.9	36.0				
9/2/2008 00:01.91	2.0	23.3	1.9	21.3	36.0	1.98E-04	0.8	2	1.6
9/2/2008 00:17.65	4.0	21.6	15.7	17.6	36.3	2.57E-05	0.9	2	1.7
9/2/2008 00:52.24	6.0	19.4	34.6	13.4	36.9	1.38E-05	1.1	2	2.2
9/2/2008 01:37.89	8.0	17.2	45.6	9.2	37.6	1.10E-05	1.1	2	2.2
9/2/2008 02:29.27	10.0	15.0	51.4	5.0	38.5	1.03E-05	1.1	2	2.2
9/2/2008 03:25.39	12.0	12.8	56.1	0.8	39.4	9.88E-06	1.1	2	2.2
9/2/2008 04:27.42	14.0	10.5	62.0	-3.5	40.4	9.67E-06	1.2	2	2.3
9/2/2008 05:31.72	16.0	8.3	64.3	-7.7	41.5	9.67E-06	1.1	2	2.2
9/2/2008 06:40.72	18.0	6.0	69.0	-12.0	42.7	9.81E-06	1.2	2	2.3
9/2/2008 07:55.90	20.0	3.8	75.2	-16.2	43.9	9.40E-06	1.1	2	2.2
9/2/2008 09:15.20	22.0	1.7	79.3	-20.3	45.2	9.32E-06	1.1	2	2.1
9/2/2008 00:00.00	0.0	24.0	0.0	24.0	45.2				
9/2/2008 00:02.03	2.0	23.0	2.0	21.0	45.3	1.56E-04	0.5	2	1
9/2/2008 00:16.16	4.0	22.0	14.1	18.0	45.5	2.32E-05	0.5	2	1
9/2/2008 00:47.75	6.0	20.6	31.6	14.6	46.0	1.22E-05	0.7	2	1.4
9/2/2008 01:31.24	8.0	19.0	43.5	11.0	46.8	9.71E-06	0.8	2	1.6
9/2/2008 02:21.45	10.0	17.1	50.2	7.1	47.6	9.52E-06	0.9	2	1.9
9/2/2008 03:18.31	12.0	15.1	56.9	3.1	48.6	9.04E-06	1.0	2	2
9/2/2008 04:21.31	14.0	13.1	63.0	-0.9	49.6	8.58E-06	1.0	2	2
9/2/2008 05:46.26	16.5	10.6	85.0	-5.9	51.0	8.45E-06	1.0	2.5	2.5
9/2/2008 06:41.95	18.0	9.0	55.7	-9.0	51.9	8.46E-06	1.1	1.5	1.6

9/2/2008 08:04.00	20.0	6.9	82.1	-13.1	53.3	8.01E-06	1.1	2	2.1
9/2/2008 09:30.06	22.0	4.9	86.1	-17.1	54.7	7.95E-06	1.0	2	2
9/2/2008 11:04.16	24.0	2.8	94.1	-21.2	56.3	7.98E-06	1.1	2	2.1
9/3/2008 00:00.00	0.0	24.0	0.0	24.0	56.3				
9/3/2008 00:02.24	2.0	22.5	2.2	20.5	56.4	1.66E-04	0.8	2	1.5
9/3/2008 00:20.03	4.0	21.2	17.8	17.2	56.6	2.04E-05	0.7	2	1.3
9/3/2008 00:55.98	6.0	19.5	36.0	13.5	57.2	1.17E-05	0.9	2	1.7
9/3/2008 01:42.60	8.0	17.5	46.6	9.5	58.0	1.02E-05	1.0	2	2
9/3/2008 02:35.52	10.0	15.5	52.9	5.5	58.9	9.43E-06	1.0	2	2
9/3/2008 03:33.60	12.0	13.5	58.1	1.5	59.9	9.03E-06	1.0	2	2
9/3/2008 04:38.04	14.0	11.4	64.4	-2.6	60.9	8.79E-06	1.1	2	2.1
9/3/2008 05:47.25	16.0	9.2	69.2	-6.8	62.1	8.87E-06	1.1	2	2.2
9/3/2008 07:00.25	18.0	7.2	73.0	-10.8	63.3	8.49E-06	1.0	2	2
9/3/2008 08:21.71	20.0	5.0	81.5	-15.0	64.7	8.51E-06	1.1	2	2.2
9/3/2008 09:49.14	22.0	2.9	87.4	-19.1	66.1	8.28E-06	1.1	2	2.1
9/3/2008 11:24.21	24.0	0.8	95.1	-23.2	67.7	8.19E-06	1.1	2	2.1



Hydraulic Conductivity Test - Underwood - Thick Clay Cover

ASTM D 5084 - 00

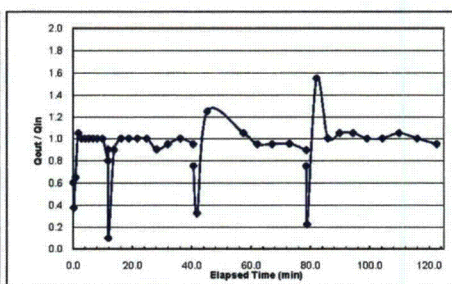
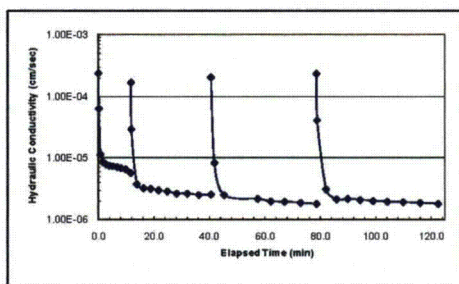
Sample I.D.		305-mm CC5- Clay Top 2		Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5	cm
Inflow Pressure =	41.1	psi	Length of Sample, L =	15.2	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66	cm ²
Pressure Difference =	1.1	psi	Sample Volume, V =	11120.0	cm ³
Effective Stress =	1.5	psi	a _{in} =	1	cm ²
Hydraulic Gradient, i =	5.0		a _{out} =	1	cm ²
Weight of wet sample =	23900.0	g	Sample Water Content =	12.1%	(%)
Wet Density =	2.1	g/cm ³	Dry Density =	2.15	g/cm ³

$$K_s = \frac{a_m * a_{out}}{(a_m + a_{out})} \frac{L}{A * \Delta t} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
MV-3	50.54	431.49	390.23	12.15%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
8/20/2008 00:00:00	0.0	24.9	0.0	24.9	0.0				
8/20/2008 00:01:40	2.0	23.7	1.4	21.7	0.0	2.40E-04	0.6	2	1.2
8/20/2008 00:10:08	6.0	22.2	9.5	16.2	0.2	6.37E-05	0.4	4	1.5
8/20/2008 00:44:72	8.0	20.9	33.8	12.9	0.7	1.12E-05	0.7	2	1.3
8/20/2008 01:42:92	10.0	18.8	58.2	8.8	1.7	8.45E-06	1.1	2	2.1
8/20/2008 02:47:60	12.0	16.8	64.7	4.8	2.8	7.78E-06	1.0	2	2
8/20/2008 03:58:50	14.0	14.8	70.9	0.8	4.0	7.46E-06	1.0	2	2
8/20/2008 05:14:82	16.0	12.8	76.3	-3.2	5.2	7.30E-06	1.0	2	2
8/20/2008 06:38:04	18.0	10.8	83.2	-7.2	6.6	7.07E-06	1.0	2	2
8/20/2008 08:10:10	20.0	8.8	92.1	-11.2	8.2	6.77E-06	1.0	2	2
8/20/2008 09:51:81	22.0	6.8	101.7	-15.2	9.9	6.52E-06	1.0	2	2
8/20/2008 11:43:92	24.0	5.2	112.1	-18.8	11.7	5.67E-06	0.8	2	1.6
8/21/2008 00:00:00	0.0	24.8	0.0	24.8	11.7				
8/21/2008 00:02:36	2.0	23.0	2.4	21.0	11.8	1.70E-04	0.9	2	1.8
8/21/2008 00:10:60	4.0	22.8	8.2	18.8	11.9	2.90E-05	0.1	2	0.2
8/21/2008 02:04:35	6.0	21.0	113.8	15.0	13.8	3.75E-06	0.9	2	1.8
8/21/2008 04:28:42	8.0	19.0	144.1	11.0	16.2	3.25E-06	1.0	2	2
8/21/2008 07:04:45	10.0	17.0	156.0	7.0	18.8	3.14E-06	1.0	2	2
8/21/2008 09:56:32	12.0	15.0	171.9	3.0	21.7	2.99E-06	1.0	2	2
8/21/2008 13:06:60	14.0	13.0	190.3	-1.0	24.8	2.84E-06	1.0	2	2
8/21/2008 16:31:14	16.0	11.2	204.5	-4.8	28.3	2.65E-06	0.9	2	1.8
8/21/2008 20:14:22	18.0	9.3	223.1	-8.7	32.0	2.63E-06	0.9	2	1.9
8/21/2008 24:28:10	20.0	7.3	253.9	-12.7	36.2	2.51E-06	1.0	2	2
8/21/2008 28:49:32	22.0	5.4	261.2	-16.6	40.6	2.53E-06	1.0	2	1.9
8/21/2008 00:00:00	0.0	24.9	0.0	24.9	40.6				
8/21/2008 00:01:80	2.0	23.4	1.8	21.4	40.6	2.04E-04	0.8	2	1.5
8/21/2008 01:13:18	6.0	22.1	71.4	16.1	41.8	8.17E-06	0.3	4	1.3
8/21/2008 04:41:60	8.0	19.6	208.4	11.6	45.2	2.50E-06	1.3	2	2.5
8/21/2008 16:52:29	14.0	13.3	730.7	-0.7	57.4	2.16E-06	1.1	6	6.3
8/21/2008 21:32:84	16.0	11.4	280.6	-4.6	62.1	1.97E-06	1.0	2	1.9
8/21/2008 26:33:99	18.0	9.5	301.1	-8.5	67.1	1.94E-06	1.0	2	1.9
8/21/2008 32:21:94	20.0	7.5	347.9	-12.6	72.9	1.88E-06	1.0	2.1	2
8/21/2008 38:03:06	22.0	5.8	341.1	-16.2	78.6	1.78E-06	0.9	1.9	1.7
8/21/2008 00:00:00	0.0	24.8	0.0	24.8	78.6				
8/21/2008 00:01:57	2.0	23.3	1.6	21.3	78.6	2.35E-04	0.8	2	1.5
8/21/2008 00:14:75	6.0	22.4	13.2	16.4	78.9	4.09E-05	0.2	4	0.9
8/21/2008 03:26:44	8.0	19.3	191.7	11.3	82.0	3.09E-06	1.6	2	3.1
8/21/2008 07:17:22	10.0	17.3	230.8	7.3	85.9	2.12E-06	1.0	2	2
8/21/2008 11:20:02	12.0	15.2	242.8	3.2	89.9	2.17E-06	1.1	2	2.1
8/21/2008 15:45:36	14.0	13.1	265.3	-0.9	94.4	2.09E-06	1.1	2	2.1
8/21/2008 20:28:18	16.0	11.1	282.8	-4.9	99.1	2.02E-06	1.0	2	2
8/21/2008 25:36:95	18.0	9.1	308.8	-9.9	104.2	1.95E-06	1.0	2	2
8/21/2008 31:18:50	20.0	7.0	341.6	-13.0	109.9	1.92E-06	1.1	2	2.1
8/21/2008 37:23:46	22.0	5.0	365.0	-17.0	116.0	1.87E-06	1.0	2	2
8/21/2008 43:59:60	24.0	3.1	396.1	-20.9	122.6	1.80E-06	1.0	2	1.9

Note:
The highlighted data was recorded prior to a membrane leak.
All other data was recorded following membrane replacement.



Hydraulic Conductivity Test - Underwood - Thick Clay Cover

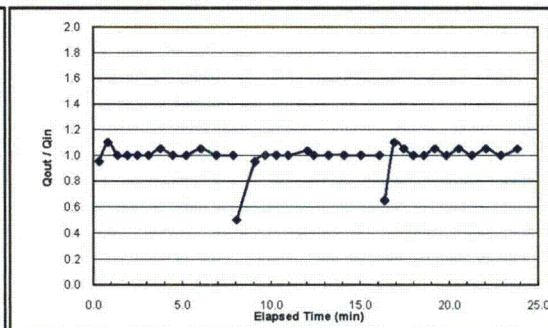
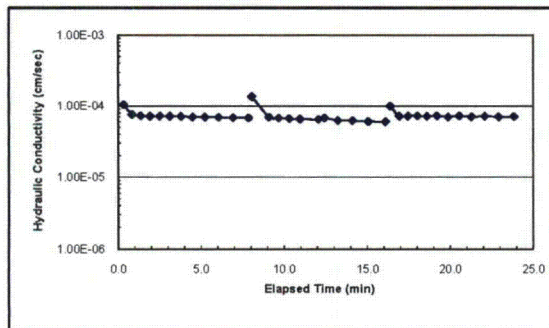
ASTM D 5084 - 00

Sample I.D.	305-mm CC5 - Clay Bottom	Test Date :	10/2/08
Cell Pressure =	42.0 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.1 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	1.1 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	5 cm ²
Hydraulic Gradient, i =	5.0	a _{out} =	5 cm ²
Weight of wet sample =	22600.0 g	Sample Water Content =	15.3% (%)
Wet Density =	2.0 g/cm ³	Dry Density =	2.03 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
G	30.8	157.28	140.54	15.25%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
10/2/2008 00:00.00	0.0	24.7	0.0	24.7	0.0				
10/2/2008 00:19.73	2.0	22.8	19.7	20.8	0.3	1.04E-04	0.9	10	9.5
10/2/2008 00:50.11	4.0	20.6	30.4	16.6	0.8	7.61E-05	1.1	10	11
10/2/2008 01:21.65	6.0	18.6	31.5	12.6	1.4	7.29E-05	1.0	10	10
10/2/2008 01:55.14	8.0	16.6	33.5	8.6	1.9	7.19E-05	1.0	10	10
10/2/2008 02:30.14	10.0	14.6	35.0	4.6	2.5	7.21E-05	1.0	10	10
10/2/2008 03:06.96	12.0	12.6	36.8	0.6	3.1	7.20E-05	1.0	10	10
10/2/2008 03:47.02	14.0	10.5	40.1	-3.5	3.8	7.15E-05	1.1	10	10.5
10/2/2008 04:29.28	16.0	8.5	42.3	-7.5	4.5	6.99E-05	1.0	10	10
10/2/2008 05:14.18	18.0	6.5	44.9	-11.5	5.2	6.98E-05	1.0	10	10
10/2/2008 06:03.28	20.0	4.4	49.1	-15.6	6.1	6.96E-05	1.1	10	10.5
10/2/2008 06:55.52	22.0	2.4	52.2	-19.6	6.9	6.83E-05	1.0	10	10
10/2/2008 07:51.73	24.0	0.4	56.2	-23.6	7.9	6.81E-05	1.0	10	10
10/2/2008 00:00.00	0.0	24.8	0.0	24.8	7.9				
10/2/2008 00:11.62	2.0	23.8	11.6	21.8	8.1	1.36E-04	0.5	10	5
10/2/2008 01:13.84	6.0	20.0	62.2	14.0	9.1	6.96E-05	1.0	20	19
10/2/2008 01:48.84	8.0	18.0	35.0	10.0	9.7	6.77E-05	1.0	10	10
10/2/2008 02:26.23	10.0	16.0	37.4	6.0	10.3	6.64E-05	1.0	10	10
10/2/2008 03:05.95	12.0	14.0	39.7	2.0	11.0	6.56E-05	1.0	10	10
10/2/2008 04:11.52	15.0	10.9	65.6	-4.1	12.1	6.47E-05	1.0	15	15.5
10/2/2008 04:33.12	16.0	9.9	21.6	-6.1	12.4	6.80E-05	1.0	5	5
10/2/2008 05:22.02	18.0	7.9	48.9	-10.1	13.2	6.27E-05	1.0	10	10
10/2/2008 06:14.42	20.0	5.9	52.4	-14.1	14.1	6.22E-05	1.0	10	10
10/2/2008 07:11.62	22.0	3.9	57.2	-18.1	15.1	6.08E-05	1.0	10	10
10/2/2008 08:13.73	24.0	1.9	62.1	-22.1	16.1	6.00E-05	1.0	10	10
10/2/2008 00:00.00	0.0	24.8	0.0	24.8	16.1				
10/2/2008 00:17.34	2.0	23.5	17.3	21.5	16.4	1.00E-04	0.7	10	6.5
10/2/2008 00:49.25	4.0	21.3	31.9	17.3	16.9	7.19E-05	1.1	10	11
10/2/2008 01:21.61	6.0	19.2	32.4	13.2	17.5	7.24E-05	1.1	10	10.5
10/2/2008 01:54.61	8.0	17.2	33.0	9.2	18.0	7.24E-05	1.0	10	10
10/2/2008 02:29.61	10.0	15.2	35.0	5.2	18.6	7.16E-05	1.0	10	10
10/2/2008 03:06.73	12.0	13.1	37.1	1.1	19.2	7.27E-05	1.1	10	10.5
10/2/2008 03:46.25	14.0	11.1	39.5	-2.9	19.9	7.02E-05	1.0	10	10
10/2/2008 04:27.56	16.0	9.0	41.3	-7.0	20.6	7.28E-05	1.1	10	10.5
10/2/2008 05:11.73	18.0	7.0	44.2	-11.0	21.3	7.04E-05	1.0	10	10
10/2/2008 05:59.05	20.0	4.9	47.3	-15.1	22.1	7.17E-05	1.1	10	10.5
10/2/2008 06:49.34	22.0	2.9	50.3	-19.1	22.9	7.03E-05	1.0	10	10
10/2/2008 07:44.25	24.0	0.8	54.9	-23.2	23.8	7.09E-05	1.1	10	10.5



Hydraulic Conductivity Test - Underwood - Thick Clay Cover

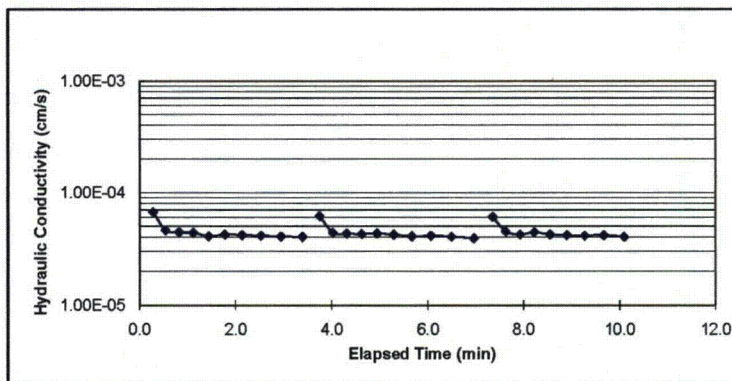
ASTM D 5084 - 00

Sample I.D.			150-mm CC5-Clay-Bottom		Test Date :	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	15.2	cm	
Inflow Pressure =	40.5	psi	Length of Sample, L =	6.1	cm	
Outflow Pressure =	40.0	psi	Area of Sample, A =	182.41	cm ²	
Pressure Difference =	0.5	psi	Sample Volume, V =	1112.0	cm ³	
Effective Stress =	1.8	psi	a _{in} =	1	cm ²	
Hydraulic Gradient, i =	5.8		a _{out} =	1	cm ²	
Weight of wet sample =	2041.3	g	Sample Water Content =	18.1	(%)	
Wet Density =	1.8	g/cm ³	Dry Density =	1.55	g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
62	30.97	125.63	111.1	18.13

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q _{out} / Q _{in}	Q _{in}	Q _{out}
			(sec)	(cm)	(min)	(cm/sec)			
0:00:00	8.0	24.0	0.0	16.0	0.0				
0:00:17	10.0	22.7	16.8	12.7	0.3	6.64E-05	0.7	2	1.3
0:00:32	11.0	21.7	15.6	10.7	0.5	4.58E-05	1.0	1	1
0:00:49	12.0	20.7	16.9	8.7	0.8	4.40E-05	1.0	1	1
0:01:07	13.0	19.7	17.9	6.7	1.1	4.36E-05	1.0	1	1
0:01:26	14.0	18.8	19.1	4.8	1.4	4.06E-05	0.9	1	0.9
0:01:47	15.0	17.8	20.3	2.8	1.8	4.22E-05	1.0	1	1
0:02:08	16.0	16.8	21.7	0.8	2.1	4.17E-05	1.0	1	1
0:02:32	17.0	15.8	23.3	-1.2	2.5	4.11E-05	1.0	1	1
0:02:57	18.0	14.8	25.1	-3.2	2.9	4.04E-05	1.0	1	1
0:03:24	19.0	13.8	27.0	-5.2	3.4	4.00E-05	1.0	1	1
0:00:00	8.0	24.0	-203.7	16.0	3.4				
0:00:21	10.0	22.2	21.1	12.2	3.8	6.13E-05	0.9	2	1.8
0:00:38	11.0	21.2	16.5	10.2	4.0	4.36E-05	1.0	1	1
0:00:55	12.0	20.2	17.6	8.2	4.3	4.29E-05	1.0	1	1
0:01:14	13.0	19.2	18.6	6.2	4.6	4.25E-05	1.0	1	1
0:01:33	14.0	18.2	19.2	4.2	4.9	4.30E-05	1.0	1	1
0:01:54	15.0	17.2	20.8	2.2	5.3	4.19E-05	1.0	1	1
0:02:16	16.0	16.2	22.6	0.2	5.7	4.06E-05	1.0	1	1
0:02:40	17.0	15.2	23.7	-1.8	6.1	4.10E-05	1.0	1	1
0:03:06	18.0	14.2	25.6	-3.8	6.5	4.03E-05	1.0	1	1
0:03:34	19.0	13.2	28.2	-5.8	7.0	3.90E-05	1.0	1	1
0:00:00	8.0	24.0	-214.0	16.0	7.0				
0:00:21	10.0	22.2	21.4	12.2	7.4	6.03E-05	0.9	2	1.8
0:00:38	11.0	21.2	16.1	10.2	7.6	4.47E-05	1.0	1	1
0:00:55	12.0	20.2	17.9	8.2	7.9	4.21E-05	1.0	1	1
0:01:13	13.0	19.2	18.0	6.2	8.2	4.39E-05	1.0	1	1
0:01:33	14.0	18.2	19.7	4.2	8.6	4.20E-05	1.0	1	1
0:01:54	15.0	17.2	21.0	2.2	8.9	4.15E-05	1.0	1	1
0:02:16	16.0	16.2	22.4	0.2	9.3	4.11E-05	1.0	1	1
0:02:40	17.0	15.2	23.5	-1.8	9.7	4.15E-05	1.0	1	1
0:03:06	18.0	14.2	25.8	-3.8	10.1	4.01E-05	1.0	1	1



Hydraulic Conductivity Test - Underwood - Thick Clay Cover

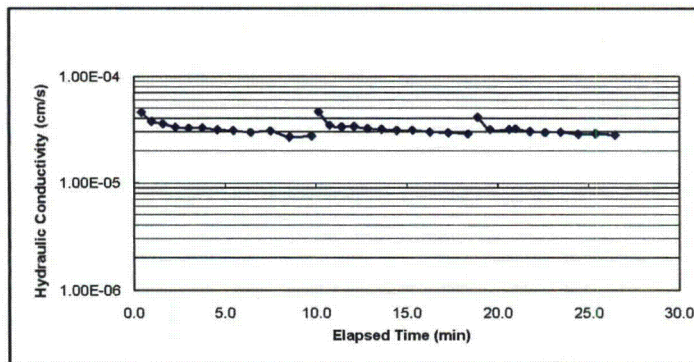
ASTM D 5084 - 00

Sample I.D.	75-mm CC5-Clay Bottom	Test Date :	11.03.08
Cell Pressure = 42.0	psi	Diameter of Sample, D = 7.6	cm
Inflow Pressure = 40.5	psi	Length of Sample, L = 3.2	cm
Outflow Pressure = 40.0	psi	Area of Sample, A = 45.60	cm ²
Pressure Difference = 0.5	psi	Sample Volume, V = 144.8	cm ³
Effective Stress = 1.8	psi	a _{in} = 1	cm ²
Hydraulic Gradient, i = 11.1		a _{out} = 1	cm ²
Weight of wet sample = 233.3	g	Sample Water Content = 21.6	(%)
Wet Density = 1.6	g/cm ³	Dry Density = 1.32	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
14	30.73	100.58	88.15	21.65

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	1.0	23.8	0.0	22.8	0.0				
0:00:24	2.0	23.0	24.2	21.0	0.4	4.54E-05	0.8	1	0.8
0:00:58	3.0	22.0	33.8	19.0	1.0	3.73E-05	1.0	1	1
0:01:35	4.0	21.0	36.9	17.0	1.6	3.55E-05	1.0	1	1
0:02:16	5.0	20.0	41.2	15.0	2.3	3.30E-05	1.0	1	1
0:03:00	6.0	19.0	43.7	13.0	3.0	3.24E-05	1.0	1	1
0:03:45	7.0	18.0	45.4	11.0	3.8	3.25E-05	1.0	1	1
0:04:35	8.0	17.0	49.6	9.0	4.6	3.11E-05	1.0	1	1
0:05:27	9.0	16.0	52.5	7.0	5.5	3.07E-05	1.0	1	1
0:06:25	10.0	15.0	57.4	5.0	6.4	2.95E-05	1.0	1	1
0:07:29	11.1	13.9	64.7	2.8	7.5	3.03E-05	1.0	1.1	1.1
0:08:33	12.0	13.0	63.3	1.0	8.5	2.67E-05	1.0	0.9	0.9
0:09:45	13.0	12.0	72.3	-1.0	9.7	2.74E-05	1.0	1	1
0:00:00	1.0	24.0	-585.0	23.0	9.7				
0:00:26	2.0	23.0	26.5	21.0	10.1	4.60E-05	1.0	1	1
0:01:03	3.0	22.0	36.7	19.0	10.8	3.44E-05	1.0	1	1
0:01:43	4.0	21.0	39.4	17.0	11.4	3.33E-05	1.0	1	1
0:02:23	5.0	20.0	40.7	15.0	12.1	3.35E-05	1.0	1	1
0:03:07	6.0	19.0	44.2	13.0	12.8	3.20E-05	1.0	1	1
0:03:54	7.0	18.0	46.8	11.0	13.6	3.16E-05	1.0	1	1
0:04:44	8.0	17.0	50.2	9.0	14.4	3.07E-05	1.0	1	1
0:05:37	9.0	16.0	52.3	7.0	15.3	3.09E-05	1.0	1	1
0:06:34	10.0	15.0	56.9	5.0	16.3	2.98E-05	1.0	1	1
0:07:34	11.0	14.0	60.5	3.0	17.3	2.94E-05	1.0	1	1
0:08:39	12.0	13.0	65.4	1.0	18.4	2.86E-05	1.0	1	1
0:00:00	1.0	24.0	-519.5	23.0	18.4				
0:00:30	2.0	23.0	29.8	21.0	18.9	4.09E-05	1.0	1	1
0:01:10	3.0	22.0	40.2	19.0	19.6	3.14E-05	1.0	1	1
0:02:13	4.5	20.5	63.1	16.0	20.6	3.15E-05	1.0	1.5	1.5
0:02:35	5.0	20.0	21.6	15.0	21.0	3.18E-05	1.0	0.5	0.5
0:03:22	6.0	19.0	47.1	13.0	21.8	3.01E-05	1.0	1	1
0:04:12	7.0	18.0	50.2	11.0	22.6	2.94E-05	1.0	1	1
0:05:04	8.0	17.0	51.9	9.0	23.5	2.97E-05	1.0	1	1
0:06:01	9.0	16.0	56.8	7.0	24.4	2.84E-05	1.0	1	1
0:07:00	10.0	15.0	58.9	5.0	25.4	2.87E-05	1.0	1	1
0:08:03	11.0	14.0	63.8	3.0	26.5	2.79E-05	1.0	1	1



Hydraulic Conductivity Test - Underwood - Thin Clay Cover

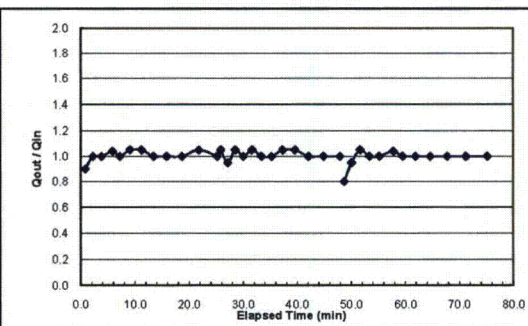
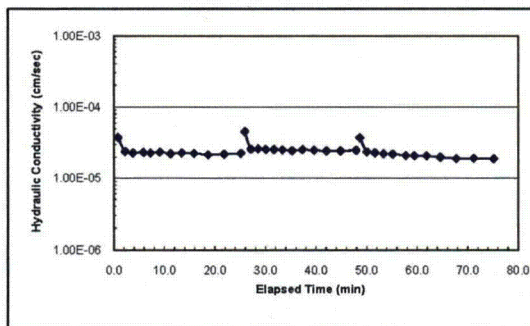
ASTM D 5084 - 00

Sample I.D.			305-mm CC3 - Clay Middle			Test Date : 9/29/08		
Cell Pressure =	41.9	psi	Diameter of Sample, D =			30.5	cm	
Inflow Pressure =	40.8	psi	Length of Sample, L =			10.8	cm	
Outflow Pressure =	40.0	psi	Area of Sample, A =			729.66	cm ²	
Pressure Difference =	0.8	psi	Sample Volume, V =			7876.7	cm ³	
Effective Stress =	1.5	psi	a_{in} =			5	cm ²	
Hydraulic Gradient, i =	5.0		a_{out} =			5	cm ²	
Weight of wet sample =	15750.0	g	Sample Water Content =			14.0%	(%)	
Wet Density =	2.0	g/cm ³	Dry Density =			2.00	g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
44	30.35	125.33	113.7	13.95%

Date, Time	Inflow	OutFlow	Δt	H	Time	K	Q_{out} / Q_{in}	Q_{in}	Q_{out}
			(sec)	(cm)	(min)	(cm/sec)			
9/29/2008 00:00.00	0.0	24.8	0.0	24.8	0.0				
9/29/2008 00:48.53	2.0	23.0	48.5	21.0	0.8	3.77E-05	0.9	10	9
9/29/2008 02:12.61	4.0	21.0	84.1	17.0	2.2	2.41E-05	1.0	10	10
9/29/2008 03:46.15	6.0	19.0	93.5	13.0	3.8	2.29E-05	1.0	10	10
9/29/2008 05:51.53	8.5	16.4	125.4	7.9	5.9	2.34E-05	1.0	12.5	13
9/29/2008 07:11.78	10.0	14.9	80.2	4.9	7.2	2.29E-05	1.0	7.5	7.5
9/29/2008 09:04.84	12.0	12.8	113.1	0.8	9.1	2.36E-05	1.1	10	10.5
9/29/2008 11:12.55	14.0	10.7	127.7	-3.3	11.2	2.25E-05	1.1	10	10.5
9/29/2008 13:25.03	16.0	8.7	132.5	-7.3	13.4	2.30E-05	1.0	10	10
9/29/2008 15:51.53	18.0	6.7	146.5	-11.3	15.9	2.26E-05	1.0	10	10
9/29/2008 18:40.30	20.0	4.7	168.8	-15.3	18.7	2.16E-05	1.0	10	10
9/29/2008 21:47.78	22.0	2.6	187.5	-19.4	21.8	2.21E-05	1.1	10	10.5
9/29/2008 25:08.56	24.0	0.6	200.8	-23.4	25.1	2.27E-05	1.0	10	10
9/29/2008 00:00.00	0.0	24.8	0.0	24.8	25.1				
9/29/2008 00:43.45	2.0	22.7	43.5	20.7	25.9	4.55E-05	1.1	10	10.5
9/29/2008 01:59.75	4.0	20.8	76.3	16.8	27.1	2.60E-05	0.9	10	9.5
9/29/2008 03:23.95	6.0	18.7	84.2	12.7	28.5	2.62E-05	1.1	10	10.5
9/29/2008 04:52.78	8.0	16.7	88.8	8.7	30.0	2.58E-05	1.0	10	10
9/29/2008 06:30.61	10.0	14.6	97.8	4.6	31.7	2.56E-05	1.1	10	10.5
9/29/2008 08:13.87	12.0	12.6	103.3	0.6	33.4	2.53E-05	1.0	10	10
9/29/2008 10:07.61	14.0	10.6	113.7	-3.4	35.3	2.48E-05	1.0	10	10
9/29/2008 12:10.36	16.0	8.5	122.7	-7.5	37.3	2.55E-05	1.1	10	10.5
9/29/2008 14:26.28	18.0	6.4	135.9	-11.6	39.6	2.51E-05	1.1	10	10.5
9/29/2008 16:56.46	20.0	4.4	150.2	-15.6	42.1	2.44E-05	1.0	10	10
9/29/2008 19:42.87	22.0	2.4	166.4	-19.6	44.9	2.45E-05	1.0	10	10
9/29/2008 22:45.95	24.0	0.4	183.1	-23.6	47.9	2.50E-05	1.0	10	10
9/29/2008 00:00.00	0.0	24.9	0.0	24.9	47.9				
9/29/2008 00:46.34	2.0	23.3	46.3	21.3	48.7	3.73E-05	0.8	10	8
9/29/2008 02:09.33	4.0	21.4	83.0	17.4	50.1	2.37E-05	1.0	10	9.5
9/29/2008 03:44.28	6.0	19.3	95.0	13.3	51.6	2.30E-05	1.1	10	10.5
9/29/2008 05:26.23	8.0	17.3	101.9	9.3	53.3	2.22E-05	1.0	10	10
9/29/2008 07:15.34	10.0	15.3	109.1	5.3	55.2	2.21E-05	1.0	10	10
9/29/2008 09:53.11	12.5	12.7	157.8	0.2	57.8	2.11E-05	1.0	12.5	13
9/29/2008 11:33.34	14.0	11.2	100.2	-2.8	59.5	2.10E-05	1.0	7.5	7.5
9/29/2008 13:57.84	16.0	9.2	144.5	-6.8	61.9	2.08E-05	1.0	10	10
9/29/2008 16:42.68	18.0	7.2	164.8	-10.8	64.6	1.99E-05	1.0	10	10
9/29/2008 19:51.56	20.0	5.2	188.9	-14.8	67.8	1.90E-05	1.0	10	10
9/29/2008 23:18.15	22.0	3.2	206.6	-18.8	71.2	1.93E-05	1.0	10	10
9/29/2008 27:13.75	24.0	1.2	235.6	-22.8	75.1	1.90E-05	1.0	10	10



Hydraulic Conductivity Test - Underwood - Thin Clay Cover

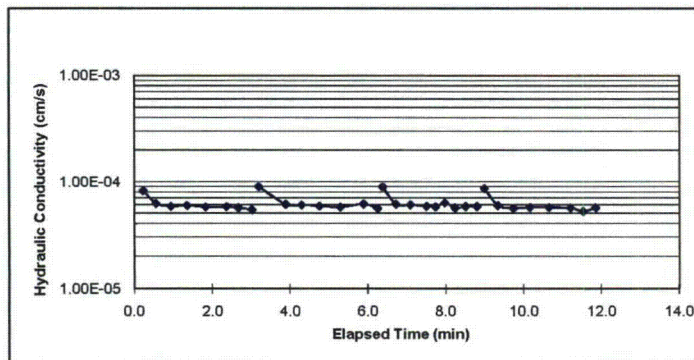
ASTM D 5084 - 00

Sample I.D.	150-mm CC3-Clay-Middle	Test Date :
Cell Pressure = 42.0 psi	Diameter of Sample, D = 15.2 cm	
Inflow Pressure = 40.4 psi	Length of Sample, L = 5.1 cm	
Outflow Pressure = 40.0 psi	Area of Sample, A = 182.41 cm ²	
Pressure Difference = 0.4 psi	Sample Volume, V = 926.7 cm ³	
Effective Stress = 1.8 psi	a _{in} = 1 cm ²	
Hydraulic Gradient, i = 5.5	a _{out} = 1 cm ²	
Weight of wet sample = 1656.2 g	Sample Water Content = 18.7 (%)	
Wet Density = 1.8 g/cm ³	Dry Density = 1.51 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
MB	30.74	121.2	106.96	18.68

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:14	2.0	22.0	13.6	20.0	0.2	8.15E-05	1.0	2	2
0:00:33	4.0	20.0	19.6	16.0	0.6	6.17E-05	1.0	2	2
0:00:56	6.0	18.0	22.9	12.0	0.9	5.78E-05	1.0	2	2
0:01:21	8.0	16.0	24.9	8.0	1.3	5.88E-05	1.0	2	2
0:01:50	10.0	14.0	28.8	4.0	1.8	5.67E-05	1.0	2	2
0:02:22	12.0	12.0	32.3	0.0	2.4	5.73E-05	1.0	2	2
0:02:40	13.0	11.0	18.3	-2.0	2.7	5.61E-05	1.0	1	1
0:03:01	14.0	10.0	20.6	-4.0	3.0	5.37E-05	1.0	1	1
0:00:00	0.0	24.0	-181.0	24.0	3.0				
0:00:11	2.0	22.3	11.5	20.3	3.2	8.95E-05	0.9	2	1.7
0:00:53	6.0	18.3	41.7	12.3	3.9	6.03E-05	1.0	4	4
0:01:18	8.0	16.3	24.4	8.3	4.3	5.95E-05	1.0	2	2
0:01:45	10.0	14.3	27.8	4.3	4.8	5.82E-05	1.0	2	2
0:02:18	12.0	12.3	32.2	0.3	5.3	5.70E-05	1.0	2	2
0:02:53	14.0	10.2	35.8	-3.8	5.9	6.06E-05	1.1	2	2.1
0:03:15	15.0	9.2	21.6	-5.8	6.2	5.54E-05	1.0	1	1
0:00:00	0.0	24.0	-194.8	24.0	6.2				
0:00:11	2.0	22.5	10.8	20.5	6.4	8.93E-05	0.8	2	1.5
0:00:31	4.0	20.4	20.2	16.4	6.7	6.07E-05	1.1	2	2.1
0:00:54	6.0	18.3	22.5	12.3	7.1	5.97E-05	1.1	2	2.1
0:01:19	8.0	16.3	25.1	8.3	7.5	5.79E-05	1.0	2	2
0:01:32	9.0	15.3	13.7	6.3	7.7	5.73E-05	1.0	1	1
0:01:46	10.0	14.2	14.0	4.2	8.0	6.24E-05	1.1	1	1.1
0:02:02	11.0	13.2	15.9	2.2	8.2	5.60E-05	1.0	1	1
0:02:19	12.0	12.2	16.4	0.2	8.5	5.78E-05	1.0	1	1
0:02:36	13.0	11.2	17.6	-1.8	8.8	5.78E-05	1.0	1	1
0:00:00	0.0	24.0	-156.3	24.0	8.8				
0:00:12	2.0	22.4	11.6	20.4	9.0	8.58E-05	0.8	2	1.6
0:00:32	4.0	20.3	20.9	16.3	9.3	5.89E-05	1.1	2	2.1
0:00:56	6.0	18.3	23.7	12.3	9.7	5.55E-05	1.0	2	2
0:01:22	8.0	16.3	25.6	8.3	10.2	5.66E-05	1.0	2	2
0:01:51	10.0	14.2	29.4	4.2	10.7	5.65E-05	1.1	2	2.1
0:02:24	12.0	12.2	32.9	0.2	11.2	5.59E-05	1.0	2	2
0:02:44	13.0	11.2	19.6	-1.8	11.5	5.20E-05	1.0	1	1
0:03:03	14.0	10.2	19.6	-3.8	11.9	5.62E-05	1.0	1	1



Hydraulic Conductivity Test - Underwood - Thin Clay Cover

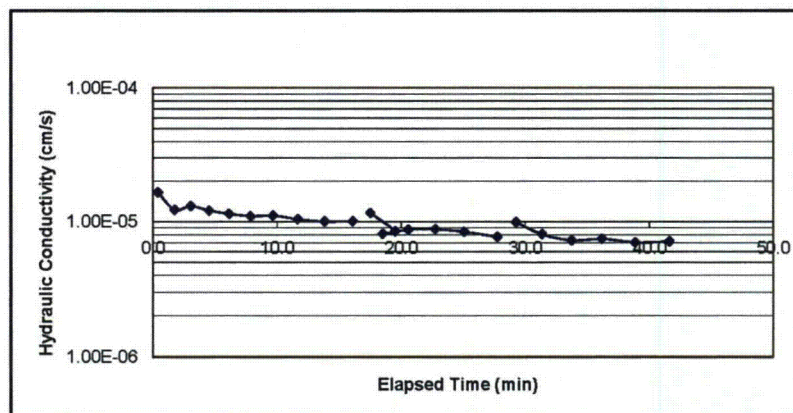
ASTM D 5084 - 00

Sample I.D.	75-mm CC3 Clay-Middle	Test Date :	10.13.08
Cell Pressure =	42.0 psi	Diameter of Sample, D =	7.6 cm
Inflow Pressure =	40.5 psi	Length of Sample, L =	2.5 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	45.60 cm ²
Pressure Difference =	0.5 psi	Sample Volume, V =	115.8 cm ³
Effective Stress =	1.8 psi	a _{in} =	1 cm ²
Hydraulic Gradient, i =	13.8	a _{out} =	1 cm ²
Weight of wet sample =	191.4 g	Sample Water Content =	25.4 (%)
Wet Density =	1.7 g/cm ³	Dry Density =	1.32 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta L} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
7	30.38	103.03	88.32	25.39

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.5	23.8	0.0	23.3	0.0				
0:00:23	1.0	23.5	23.3	22.5	0.4	1.65E-05	0.6	0.5	0.3
0:01:44	2.0	22.5	80.8	20.5	1.7	1.22E-05	1.0	1	1
0:03:03	3.0	21.5	78.5	18.5	3.0	1.30E-05	1.0	1	1
0:04:31	4.0	20.5	88.0	16.5	4.5	1.20E-05	1.0	1	1
0:06:07	5.0	19.5	96.3	14.5	6.1	1.14E-05	1.0	1	1
0:07:51	6.0	18.5	104.6	12.5	7.9	1.09E-05	1.0	1	1
0:09:39	7.0	17.5	107.9	10.5	9.7	1.11E-05	1.0	1	1
0:11:39	8.0	16.5	119.7	8.5	11.7	1.04E-05	1.0	1	1
0:13:50	9.0	15.5	130.4	6.5	13.8	1.00E-05	1.0	1	1
0:16:06	10.0	14.5	136.3	4.5	16.1	1.01E-05	1.0	1	1
0:00:00	1.0	24.0	-965.8	23.0	16.1				
0:01:24	2.0	23.0	84.4	21.0	17.5	1.15E-05	1.0	1	1
0:03:24	3.0	22.0	119.3	19.0	19.5	8.46E-06	1.0	1	1
0:05:33	4.0	21.0	129.1	17.0	18.5	8.11E-06	1.0	1	1
0:07:38	5.0	20.0	125.1	15.0	20.6	8.70E-06	1.0	1	1
0:09:47	6.0	19.0	129.1	13.0	22.7	8.78E-06	1.0	1	1
0:12:07	7.0	18.0	140.4	11.0	25.1	8.41E-06	1.0	1	1
0:14:48	8.0	17.0	160.4	9.0	27.7	7.69E-06	1.0	1	1
0:00:00	1.0	24.0	-887.8	23.0	27.7				
0:01:33	2.0	23.1	93.2	21.1	29.3	9.92E-06	0.9	1	0.9
0:03:38	3.0	22.1	125.0	19.1	31.3	8.07E-06	1.0	1	1
0:06:02	4.0	21.1	143.7	17.1	33.7	7.28E-06	1.0	1	1
0:08:28	5.0	20.1	145.9	15.1	36.2	7.45E-06	1.0	1	1
0:11:09	6.0	19.1	160.8	13.1	38.8	7.03E-06	1.0	1	1
0:13:54	7.0	18.1	165.2	11.1	41.6	7.14E-06	1.0	1	1



Hydraulic Conductivity Test - Underwood - Store-and-Release Cover

ASTM D 5084 - 00

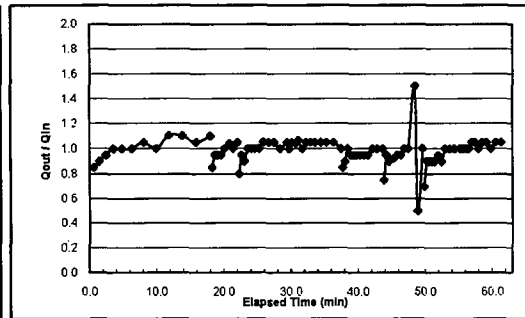
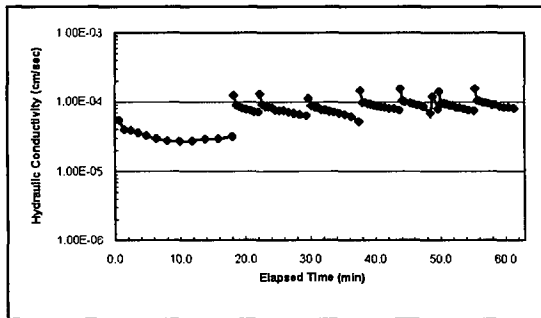
Sample I.D.	305-mm ET-Soil Top 1	Test Date :	10/27/08
Cell Pressure =	42.0 psi	Diameter of Sample, D =	30.5 cm
Inflow Pressure =	41.1 psi	Length of Sample, L =	15.2 cm
Outflow Pressure =	40.0 psi	Area of Sample, A =	729.66 cm ²
Pressure Difference =	1.1 psi	Sample Volume, V =	11120.0 cm ³
Effective Stress =	1.5 psi	a _{in} =	5 cm ²
Hydraulic Gradient, i =	5.0	a _{out} =	5 cm ²
Weight of wet sample =	21650.0 g	Sample Water Content =	12.4% (%)
Wet Density =	1.9 g/cm ³	Dry Density =	1.94 g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
X2	30.92	168.15	153.02	12.39%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
10/27/2008 00:00.00	0.0	24.8	0.0	24.8	0.0				
10/27/2008 00:36.09	2.0	23.1	36.1	21.1	0.6	5.40E-05	0.9	10	8.5
10/27/2008 01:28.70	4.0	21.3	52.6	17.3	1.5	3.95E-05	0.9	10	9
10/27/2008 02:26.14	6.0	19.4	57.4	13.4	2.4	3.87E-05	1.0	10	9.5
10/27/2008 03:33.04	8.0	17.4	66.9	9.4	3.6	3.56E-05	1.0	10	10
10/27/2008 04:50.02	10.0	15.4	77.0	5.4	4.8	3.25E-05	1.0	10	10
10/27/2008 06:19.12	12.0	13.4	89.1	1.4	6.3	2.95E-05	1.0	10	10
10/27/2008 08:03.10	14.0	11.3	104.0	-2.7	8.1	2.73E-05	1.1	10	10.5
10/27/2008 09:57.40	16.1	9.2	114.3	-6.9	10.0	2.69E-05	1.0	10.5	10.5
10/27/2008 11:50.19	18.0	7.1	112.8	-10.9	11.8	2.75E-05	1.1	9.5	10.5
10/27/2008 13:50.05	20.0	4.9	119.9	-15.1	13.8	2.90E-05	1.1	10	11
10/27/2008 15:54.20	22.0	2.8	124.1	-19.2	15.9	2.92E-05	1.1	10	10.5
10/27/2008 18:00.36	24.0	0.6	126.2	-23.4	18.0	3.17E-05	1.1	10	11
10/27/2008 00:00.00	0.0	24.9	0.0	24.9	18.0				
10/27/2008 00:15.71	2.0	23.2	15.7	21.2	18.3	1.24E-04	0.9	10	8.5
10/27/2008 00:39.67	4.0	21.3	24.0	17.3	18.7	8.91E-05	0.9	10	9.5
10/27/2008 01:05.91	6.0	19.4	26.2	13.4	19.1	8.48E-05	1.0	10	9.5
10/27/2008 01:34.80	8.0	17.5	28.9	9.5	19.6	8.04E-05	0.9	10	9.5
10/27/2008 02:06.67	10.0	15.5	31.9	5.5	20.1	7.83E-05	1.0	10	10
10/27/2008 02:51.27	12.5	12.9	44.6	0.4	20.9	7.55E-05	1.0	12.5	13
10/27/2008 03:20.47	14.0	11.4	29.2	-2.6	21.3	7.14E-05	1.0	7.5	7.5
10/27/2008 04:02.17	16.0	9.3	41.7	-6.7	22.0	7.18E-05	1.1	10	10.5
10/27/2008 00:00.00	0.0	24.9	0.0	24.9	22.0				
10/27/2008 00:14.61	2.0	23.3	14.6	21.3	22.3	1.30E-04	0.8	10	8
10/27/2008 00:37.92	4.0	21.4	23.3	17.4	22.7	9.14E-05	1.0	10	9.5
10/27/2008 01:03.21	6.0	19.6	25.3	13.6	23.1	8.56E-05	0.9	10	9
10/27/2008 01:31.07	8.0	17.6	27.9	9.6	23.6	8.54E-05	1.0	10	10
10/27/2008 02:02.65	10.1	15.5	31.6	5.4	24.1	8.30E-05	1.0	10.5	10.5
10/27/2008 02:35.38	12.0	13.6	32.7	1.6	24.6	7.61E-05	1.0	9.5	9.5
10/27/2008 03:12.28	14.0	11.6	36.9	-2.4	25.2	7.47E-05	1.0	10	10
10/27/2008 03:52.26	16.0	9.5	40.0	-6.5	25.9	7.47E-05	1.1	10	10.5
10/27/2008 04:37.05	18.0	7.4	44.8	-10.6	26.7	7.07E-05	1.1	10	10.5
10/27/2008 05:26.78	20.0	5.3	49.7	-14.7	27.5	6.78E-05	1.1	10	10.5
10/27/2008 06:20.75	22.0	3.3	54.0	-18.7	28.4	6.51E-05	1.0	10	10
10/27/2008 07:22.05	24.0	1.2	61.3	-22.8	29.4	6.30E-05	1.1	10	10.5
10/27/2008 00:00.00	0.0	24.8	0.0	24.8	29.4				
10/27/2008 00:18.84	2.0	22.8	18.8	20.8	29.7	1.12E-04	1.0	10	10
10/27/2008 00:44.46	4.0	20.7	25.6	16.7	30.2	8.80E-05	1.1	10	10.5
10/27/2008 01:20.10	6.5	18.1	35.6	11.6	30.7	8.27E-05	1.0	12.5	13
10/27/2008 01:42.54	8.0	16.5	22.4	8.5	31.1	8.36E-05	1.1	7.5	8
10/27/2008 02:15.55	10.0	14.5	33.0	4.5	31.7	7.65E-05	1.0	10	10
10/27/2008 02:51.16	12.0	12.4	35.6	0.4	32.3	7.65E-05	1.1	10	10.5
10/27/2008 03:30.60	14.0	10.3	39.4	-3.7	32.9	7.28E-05	1.1	10	10.5
10/27/2008 04:13.66	16.0	8.2	43.1	-7.8	33.6	7.06E-05	1.1	10	10.5
10/27/2008 05:00.94	18.0	6.1	47.3	-11.9	34.4	6.83E-05	1.1	10	10.5
10/27/2008 05:53.45	20.0	4.0	52.5	-16.0	35.3	6.55E-05	1.1	10	10.5
10/27/2008 06:54.08	22.0	1.9	60.6	-20.1	36.3	6.08E-05	1.1	10	10.5
10/27/2008 08:05.35	23.9	0.0	71.3	-23.9	37.5	5.14E-05	1.0	9.5	9.5
10/27/2008 00:00.00	0.0	24.9	0.0	24.9	37.5				
10/27/2008 00:13.30	2.0	23.2	13.3	21.2	37.7	1.46E-04	0.9	10	8.5
10/27/2008 00:34.57	4.0	21.4	21.3	17.4	38.1	9.77E-05	0.9	10	9
10/27/2008 00:57.90	6.0	19.4	23.3	13.4	38.5	9.78E-05	1.0	10	10
10/27/2008 01:22.61	8.0	17.5	24.7	9.5	38.9	9.40E-05	0.9	10	9.5
10/27/2008 01:48.93	10.0	15.6	26.3	5.6	39.3	9.24E-05	1.0	10	9.5
10/27/2008 02:17.60	12.0	13.7	28.7	1.7	39.8	8.90E-05	1.0	10	9.5
10/27/2008 02:48.48	14.0	11.8	30.9	-2.2	40.3	8.69E-05	0.9	10	9.5
10/27/2008 03:21.61	16.0	9.9	33.1	-6.1	40.9	8.53E-05	1.0	10	9.5
10/27/2008 03:57.31	18.0	8.0	35.7	-10.0	41.5	8.37E-05	1.0	10	9.5
10/27/2008 04:37.88	20.0	6.0	40.6	-14.0	42.1	8.02E-05	1.0	10	10
10/27/2008 05:21.25	22.0	4.0	43.4	-18.0	42.9	8.00E-05	1.0	10	10

10/27/2008 08:10.18	24.0	2.0	48.9	-22.0	43.7	7.60E-05	1.0	10	10
10/27/2008 00:00.00	0.0	24.7	0.0	24.7	43.7				
10/27/2008 00:11.91	2.0	23.2	11.9	21.2	43.9	1.55E-04	0.8	10	7.5
10/27/2008 00:32.41	4.0	21.3	20.5	17.3	44.2	1.04E-04	0.9	10	9.5
10/27/2008 00:54.10	6.0	19.5	21.7	13.5	44.6	9.99E-05	0.9	10	9
10/27/2008 01:42.48	10.0	15.8	48.4	5.8	45.4	9.68E-05	0.9	20	18.5
10/27/2008 02:09.78	12.0	13.9	27.3	1.9	45.8	9.32E-05	1.0	10	9.5
10/27/2008 02:39.57	14.0	12.0	29.8	-2.0	46.3	8.98E-05	1.0	10	9.5
10/27/2008 03:12.30	16.0	10.0	32.7	-6.0	46.9	8.84E-05	1.0	10	10
10/27/2008 03:47.87	18.0	8.0	35.6	-10.0	47.5	8.61E-05	1.0	10	10
10/27/2008 04:48.30	20.0	5.0	60.4	-15.0	48.5	6.79E-05	1.5	10	15
10/27/2008 05:10.28	22.0	4.0	22.0	-18.0	48.8	1.10E-04	0.5	10	5
10/27/2008 05:57.54	24.0	2.0	47.3	-22.0	49.6	7.87E-05	1.0	10	10
10/27/2008 00:00.00	0.0	24.6	0.0	24.6	49.6				
10/27/2008 00:12.72	2.0	23.2	12.7	21.2	49.8	1.41E-04	0.7	10	7
10/27/2008 00:34.18	4.0	21.4	21.5	17.4	50.2	9.68E-05	0.9	10	9
10/27/2008 00:57.10	6.0	19.6	22.9	13.6	50.8	9.45E-05	0.9	10	9
10/27/2008 01:21.42	8.0	17.8	24.3	9.8	51.0	9.28E-05	0.9	10	9
10/27/2008 01:47.74	10.0	16.0	26.3	6.0	51.4	8.97E-05	0.9	10	9
10/27/2008 02:16.40	12.0	14.1	28.7	2.1	51.9	8.88E-05	1.0	10	9.5
10/27/2008 02:47.82	14.0	12.3	31.4	-1.7	52.4	8.27E-05	0.9	10	9
10/27/2008 03:22.80	16.0	10.3	35.0	-5.7	53.0	8.24E-05	1.0	10	10
10/27/2008 04:01.52	18.0	8.3	38.7	-9.7	53.7	7.88E-05	1.0	10	10
10/27/2008 04:44.58	20.0	6.3	43.1	-13.7	54.4	7.52E-05	1.0	10	10
10/27/2008 05:31.08	22.0	4.3	46.5	-17.7	55.1	7.43E-05	1.0	10	10
10/27/2008 00:00.00	0.0	24.7	0.0	24.7	55.1				
10/27/2008 00:13.72	2.0	22.7	13.7	20.7	55.4	1.54E-04	1.0	10	10
10/27/2008 00:34.77	4.0	20.7	21.0	16.7	55.7	1.05E-04	1.0	10	10
10/27/2008 00:57.15	6.0	18.7	22.4	12.7	56.1	1.03E-04	1.0	10	10
10/27/2008 01:21.66	8.0	16.7	24.5	8.7	56.5	9.81E-05	1.0	10	10
10/27/2008 01:48.26	10.0	14.6	26.6	4.6	57.0	9.72E-05	1.1	10	10.5
10/27/2008 02:16.88	12.0	12.5	28.6	0.5	57.4	9.50E-05	1.1	10	10.5
10/27/2008 02:47.92	14.0	10.5	31.0	-3.5	57.9	9.01E-05	1.0	10	10
10/27/2008 03:21.25	16.0	8.4	33.3	-7.6	58.5	9.09E-05	1.1	10	10.5
10/27/2008 03:58.34	18.0	6.3	37.1	-11.7	59.1	8.68E-05	1.1	10	10.5
10/27/2008 04:38.62	20.0	4.3	40.3	-15.7	59.8	8.30E-05	1.0	10	10
10/27/2008 05:23.12	22.0	2.2	44.5	-19.8	60.5	8.23E-05	1.1	10	10.5
10/27/2008 06:11.99	24.0	0.1	48.9	-23.9	61.3	8.06E-05	1.1	10	10.5



Hydraulic Conductivity Test - Underwood - Store-and-Release Cover

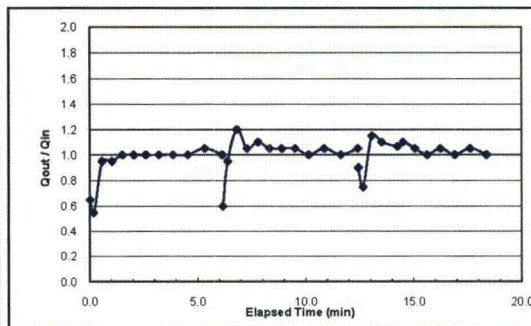
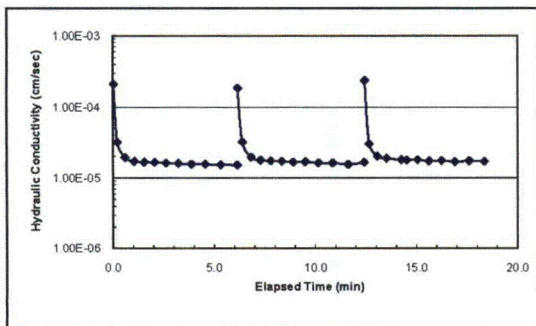
ASTM D 5084 - 00

Sample I.D.		305-mm ET - Soil Top 2		Test Date : 8/18/08	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5	cm
Inflow Pressure =	41.1	psi	Length of Sample, L =	15.2	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66	cm ²
Pressure Difference =	1.1	psi	Sample Volume, V =	11120.0	cm ³
Effective Stress =	1.5	psi	a _{in} =	1	cm ²
Hydraulic Gradient, i =	5.0		a _{out} =	1	cm ²
Weight of wet sample =	21550.0	g	Sample Water Content =	11.3%	(%)
Wet Density =	1.9	g/cm ³	Dry Density =	1.94	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
MV-3	30.84	182.71	167.28	11.31%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
8/20/2008 00:00.00	0.0	24.9	0.0	24.9	0.0				
8/20/2008 00:01.62	2.0	23.6	1.6	21.6	0.0	2.14E-04	0.6	2	1.3
8/20/2008 00:12.22	4.0	22.5	10.6	18.5	0.2	3.17E-05	0.6	2	1.1
8/20/2008 00:35.02	6.0	20.6	22.8	14.6	0.6	1.93E-05	0.9	2	1.9
8/20/2008 01:01.99	8.0	18.7	27.0	10.7	1.0	1.70E-05	1.0	2	1.9
8/20/2008 01:31.54	10.0	16.7	29.6	6.7	1.5	1.87E-05	1.0	2	2
8/20/2008 02:02.81	12.0	14.7	31.3	2.7	2.0	1.65E-05	1.0	2	2
8/20/2008 02:36.62	14.0	12.7	33.8	-1.3	2.6	1.61E-05	1.0	2	2
8/20/2008 03:12.57	16.0	10.7	35.9	-5.3	3.2	1.59E-05	1.0	2	2
8/20/2008 03:51.72	18.0	8.7	39.2	-9.3	3.9	1.55E-05	1.0	2	2
8/20/2008 04:33.20	20.0	6.7	41.5	-13.3	4.6	1.55E-05	1.0	2	2
8/20/2008 05:19.45	22.0	4.6	46.2	-17.4	5.3	1.52E-05	1.1	2	2.1
8/20/2008 06:08.20	24.0	2.6	48.8	-21.4	6.1	1.51E-05	1.0	2	2
8/20/2008 06:00.00	0.0	24.9	0.0	24.9	6.1				
8/20/2008 00:01.78	2.0	23.7	1.8	21.7	6.2	1.89E-04	0.6	2	1.2
8/20/2008 00:15.18	4.0	21.8	13.4	17.8	6.4	3.17E-05	0.9	2	1.9
8/20/2008 00:41.01	6.0	19.4	25.8	13.4	6.8	1.94E-05	1.2	2	2.4
8/20/2008 01:08.89	8.0	17.3	27.9	9.3	7.3	1.75E-05	1.1	2	2.1
8/20/2008 01:39.46	10.0	15.1	30.6	5.1	7.8	1.72E-05	1.1	2	2.2
8/20/2008 02:11.35	12.0	13.0	31.9	1.0	8.3	1.69E-05	1.1	2	2.1
8/20/2008 02:45.80	14.0	10.9	34.5	-3.1	8.9	1.65E-05	1.1	2	2.1
8/20/2008 03:21.85	16.0	8.8	36.0	-7.2	9.5	1.67E-05	1.1	2	2.1
8/20/2008 04:00.52	18.0	6.8	38.7	-11.2	10.1	1.61E-05	1.0	2	2
8/20/2008 04:42.95	20.0	4.7	42.4	-15.3	10.9	1.60E-05	1.1	2	2.1
8/20/2008 05:29.01	22.0	2.7	46.1	-19.3	11.6	1.54E-05	1.0	2	2
8/20/2008 06:16.81	24.0	0.6	47.6	-23.4	12.4	1.64E-05	1.1	2	2.1
8/20/2008 06:00.00	0.0	24.9	0.0	24.9	12.4				
8/20/2008 00:01.67	2.0	23.1	1.7	21.1	12.4	2.40E-04	0.9	2	1.8
8/20/2008 00:14.48	4.0	21.6	12.8	17.6	12.7	2.99E-05	0.8	2	1.5
8/20/2008 00:38.98	6.0	19.3	24.5	13.3	13.1	2.00E-05	1.2	2	2.3
8/20/2008 01:05.88	8.0	17.1	26.9	9.1	13.5	1.87E-05	1.1	2	2.2
8/20/2008 01:50.10	11.0	13.9	44.2	2.9	14.2	1.78E-05	1.1	3	3.2
8/20/2008 02:05.96	12.0	12.8	15.9	0.8	14.5	1.77E-05	1.1	1	1.1
8/20/2008 02:38.16	14.0	10.7	32.2	-3.3	15.0	1.77E-05	1.1	2	2.1
8/20/2008 03:12.59	16.0	8.7	34.4	-7.3	15.6	1.71E-05	1.0	2	2
8/20/2008 03:49.60	18.0	6.6	37.0	-11.4	16.2	1.73E-05	1.1	2	2.1
8/20/2008 04:29.29	20.0	4.6	39.7	-15.4	16.9	1.68E-05	1.0	2	2
8/20/2008 05:11.74	22.0	2.5	42.5	-19.5	17.6	1.72E-05	1.1	2	2.1
8/20/2008 05:57.09	24.0	0.5	45.3	-23.5	18.4	1.68E-05	1.0	2	2



Hydraulic Conductivity Test - Underwood - Store-and-Release Cover

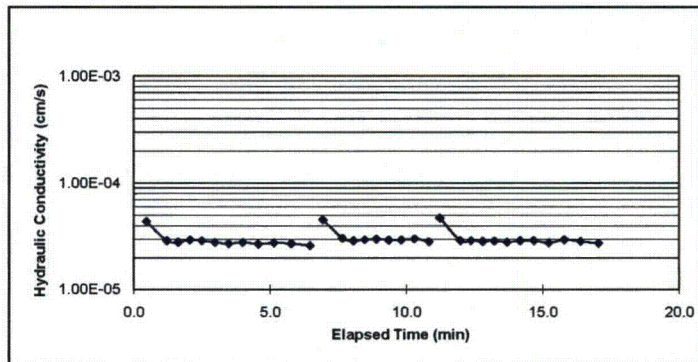
ASTM D 5084 - 00

Sample I.D.		150-mm ET-Soil-Top-2		Test Date :	
Cell Pressure =	42.1	psi	Diameter of Sample, D =	15.2	cm
Inflow Pressure =	40.5	psi	Length of Sample, L =	6.4	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	182.41	cm ²
Pressure Difference =	0.5	psi	Sample Volume, V =	1158.3	cm ³
Effective Stress =	1.9	psi	a _{in} =	1	cm ²
Hydraulic Gradient, i =	5.5		a _{out} =	1	cm ²
Weight of wet sample =	2066.6	g	Sample Water Content =	25.5	(%)
Wet Density =	1.8	g/cm ³	Dry Density =	1.42	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
62	30.71	139.36	117.3	25.48

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:28	2.0	22.0	27.8	20.0	0.5	4.38E-05	1.0	2	2
0:01:13	4.0	20.0	45.4	16.0	1.2	2.89E-05	1.0	2	2
0:01:38	5.0	19.0	24.7	14.0	1.6	2.81E-05	1.0	1	1
0:02:04	6.0	17.9	25.7	11.9	2.1	2.96E-05	1.1	1	1.1
0:02:30	7.0	16.9	26.1	9.9	2.5	2.89E-05	1.0	1	1
0:02:58	8.0	15.9	28.4	7.9	3.0	2.79E-05	1.0	1	1
0:03:29	9.0	14.9	30.5	5.9	3.5	2.72E-05	1.0	1	1
0:04:00	10.0	13.9	31.1	3.9	4.0	2.80E-05	1.0	1	1
0:04:34	11.0	12.9	34.0	1.9	4.6	2.69E-05	1.0	1	1
0:05:09	12.0	11.9	35.0	-0.1	5.1	2.76E-05	1.0	1	1
0:05:46	13.0	10.9	37.6	-2.1	5.8	2.72E-05	1.0	1	1
0:06:28	14.0	9.9	41.7	-4.1	6.5	2.61E-05	1.0	1	1
0:00:00	0.0	24.0	-387.9	24.0	6.5				
0:00:26	2.0	22.1	26.2	20.1	6.9	4.54E-05	0.9	2	1.9
0:01:09	4.0	20.1	42.9	16.1	7.7	3.05E-05	1.0	2	2
0:01:33	5.0	19.1	23.9	14.1	8.0	2.90E-05	1.0	1	1
0:01:59	6.0	18.0	25.6	12.0	8.5	2.96E-05	1.1	1	1.1
0:02:24	7.0	17.0	25.2	10.0	8.9	3.00E-05	1.0	1	1
0:02:51	8.0	16.0	26.8	8.0	9.3	2.94E-05	1.0	1	1
0:03:19	9.0	15.0	28.0	6.0	9.8	2.95E-05	1.0	1	1
0:03:47	10.0	14.0	28.8	4.0	10.3	3.01E-05	1.0	1	1
0:04:19	11.0	13.0	32.1	2.0	10.8	2.84E-05	1.0	1	1
0:00:00	0.0	24.0	-259.5	24.0	10.8				
0:00:25	2.0	22.1	25.1	20.1	11.2	4.72E-05	0.9	2	1.9
0:01:10	4.0	20.1	45.0	16.1	12.0	2.90E-05	1.0	2	2
0:01:34	5.0	19.1	24.0	14.1	12.4	2.89E-05	1.0	1	1
0:01:59	6.0	18.1	25.3	12.1	12.8	2.85E-05	1.0	1	1
0:02:26	7.0	17.1	26.1	10.1	13.2	2.88E-05	1.0	1	1
0:02:54	8.0	16.1	28.1	8.1	13.7	2.80E-05	1.0	1	1
0:03:22	9.0	15.1	28.5	6.1	14.2	2.89E-05	1.0	1	1
0:03:52	10.0	14.1	29.8	4.1	14.7	2.90E-05	1.0	1	1
0:04:25	11.0	13.1	33.0	2.1	15.2	2.76E-05	1.0	1	1
0:04:59	12.0	12.0	34.2	0.0	15.8	2.95E-05	1.1	1	1.1
0:05:35	13.0	11.0	35.8	-2.0	16.4	2.85E-05	1.0	1	1
0:06:15	14.0	10.0	39.7	-4.0	17.0	2.73E-05	1.0	1	1



Hydraulic Conductivity Test - Underwood - Store-and-Release Cover

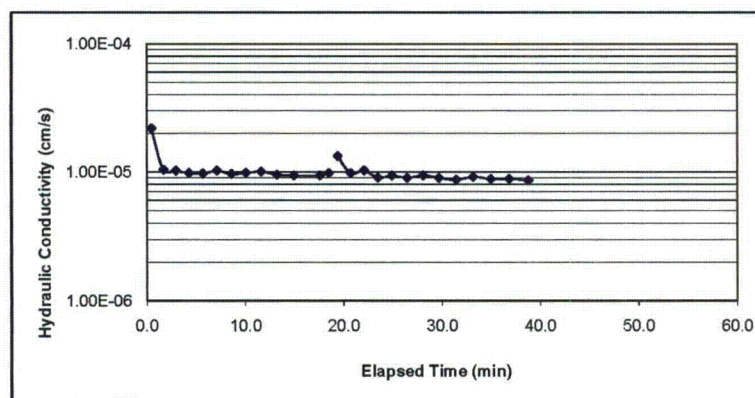
ASTM D 5084 - 00

Sample I.D.	75-mm ET-Soil-Top-2	Test Date :
Cell Pressure = 42.0 psi	Diameter of Sample, D = 7.6 cm	
Inflow Pressure = 41.0 psi	Length of Sample, L = 3.2 cm	
Outflow Pressure = 40.0 psi	Area of Sample, A = 45.60 cm ²	
Pressure Difference = 1.0 psi	Sample Volume, V = 144.8 cm ³	
Effective Stress = 1.5 psi	a _{in} = 1 cm ²	
Hydraulic Gradient, i = 22.2	a _{out} = 1 cm ²	
Weight of wet sample = 244.2 g	Sample Water Content = 25.1 (%)	
Wet Density = 1.7 g/cm ³	Dry Density = 1.35 g/cm ³	

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left\{ \frac{(\Delta H_1)}{(\Delta H_2)} \right\}$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Dry Soil (g)	Water Content (%)
Y	30.96	145.11	122.22	25.08

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _n	Q _{in}	Q _{out}
0:00:00	0.0	24.0	0.0	24.0	0.0				
0:00:27	1.0	23.4	27.3	22.4	0.5	2.18E-05	0.6	1	0.6
0:01:40	2.0	22.4	72.8	20.4	1.7	1.04E-05	1.0	1	1
0:02:56	3.0	21.4	75.9	18.4	2.9	1.02E-05	1.0	1	1
0:04:17	4.0	20.4	80.9	16.4	4.3	9.81E-06	1.0	1	1
0:05:41	5.0	19.4	83.6	14.4	5.7	9.72E-06	1.0	1	1
0:07:06	6.0	18.3	85.4	12.3	7.1	1.02E-05	1.1	1	1.1
0:08:34	7.0	17.3	88.4	10.3	8.6	9.65E-06	1.0	1	1
0:10:03	8.0	16.3	89.0	8.3	10.1	9.82E-06	1.0	1	1
0:11:37	9.0	15.2	93.5	6.2	11.6	1.01E-05	1.1	1	1.1
0:13:14	10.0	14.2	97.1	4.2	13.2	9.50E-06	1.0	1	1
0:14:55	11.0	13.2	100.9	2.2	14.9	9.38E-06	1.0	1	1
0:17:37	12.5	11.6	162.0	-0.9	17.6	9.39E-06	1.1	1.5	1.6
0:18:28	13.0	11.1	51.6	-1.9	18.5	9.79E-06	1.0	0.5	0.5
0:00:00	0.0	24.0	-1108.3	24.0	18.5				
0:00:53	1.0	23.1	53.2	22.1	19.4	1.33E-05	0.9	1	0.9
0:02:11	2.0	22.1	77.7	20.1	20.7	9.80E-06	1.0	1	1
0:03:34	3.1	21.0	83.5	17.9	22.1	1.03E-05	1.0	1.1	1.1
0:04:58	4.0	20.0	84.0	16.0	23.5	9.02E-06	1.1	0.9	1
0:06:26	5.0	19.0	87.2	14.0	24.9	9.36E-06	1.0	1	1
0:07:58	6.0	18.0	92.8	12.0	26.5	9.00E-06	1.0	1	1
0:09:34	7.0	16.9	95.9	9.9	28.1	9.38E-06	1.1	1	1.1
0:11:12	8.0	15.9	97.7	7.9	29.7	8.99E-06	1.0	1	1
0:12:56	9.0	14.9	103.8	5.9	31.4	8.69E-06	1.0	1	1
0:14:42	10.0	13.8	106.3	3.8	33.2	9.15E-06	1.1	1	1.1
0:16:30	11.0	12.8	108.0	1.8	35.0	8.82E-06	1.0	1	1
0:18:21	12.0	11.8	110.9	-0.2	36.8	8.83E-06	1.0	1	1
0:20:18	13.0	10.8	117.1	-2.2	38.8	8.60E-06	1.0	1	1



Hydraulic Conductivity Test - Underwood - Store-and-Release Cover

ASTM D 5084 - 00

Sample I.D.		305-mm ET-Soil Bottom		Test Date : 10/13/08	
Cell Pressure =	42.0	psi	Diameter of Sample, D =	30.5	cm
Inflow Pressure =	41.1	psi	Length of Sample, L =	15.2	cm
Outflow Pressure =	40.0	psi	Area of Sample, A =	729.66	cm ²
Pressure Difference =	1.1	psi	Sample Volume, V =	11120.0	cm ³
Effective Stress =	1.5	psi	a _{in} =	5	cm ²
Hydraulic Gradient, i =	5.0		a _{out} =	5	cm ²
Weight of wet sample =	22600.0	g	Sample Water Content =	15.3%	(%)
Wet Density =	2.0	g/cm ³	Dry Density =	2.03	g/cm ³

$$K_s = \frac{a_{in} * a_{out}}{(a_{in} + a_{out})} \frac{L}{A * \Delta t} \ln \left(\frac{(\Delta H_1)}{(\Delta H_2)} \right)$$

Can #	WT of Can (g)	WT of Can + Wet Soil (g)	WT of Can + Water Dry Soil (g)	Water Content (%)
G	30.8	157.28	140.54	15.25%

Date, Time	Inflow	OutFlow	Δt (sec)	H (cm)	Time (min)	K (cm/sec)	Q _{out} / Q _{in}	Q _{in}	Q _{out}
10/13/2008 00:00.00	0.0	24.8	0.0	24.8	0.0				
10/13/2008 00:21.19	2.0	24.1	21.2	22.1	0.4	6.68E-05	0.4	10	3.5
10/13/2008 01:35.12	4.0	22.2	73.9	18.2	1.6	2.86E-05	1.0	10	9.5
10/13/2008 02:57.11	6.0	20.2	82.0	14.2	3.0	2.76E-05	1.0	10	10
10/13/2008 04:20.61	8.0	18.1	83.5	10.1	4.3	2.90E-05	1.1	10	10.5
10/13/2008 05:45.00	10.0	16.1	84.4	6.1	5.8	2.94E-05	1.0	10	10
10/13/2008 07:16.31	12.0	14.0	91.3	2.0	7.3	2.92E-05	1.1	10	10.5
10/13/2008 08:50.68	14.0	12.0	94.4	-2.0	8.8	2.91E-05	1.0	10	10
10/13/2008 10:32.91	16.0	10.0	102.2	-6.0	10.5	2.83E-05	1.0	10	10
10/13/2008 12:19.77	18.0	8.0	106.9	-10.0	12.3	2.87E-05	1.0	10	10
10/13/2008 14:15.60	20.0	5.9	115.8	-14.1	14.3	2.88E-05	1.1	10	10.5
10/13/2008 16:22.87	22.0	3.8	127.3	-18.2	16.4	2.80E-05	1.1	10	10.5
10/13/2008 18:36.03	24.0	1.8	133.2	-22.2	18.6	2.80E-05	1.0	10	10
10/13/2008 00:00.00	0.0	24.7	0.0	24.7	18.6				
10/13/2008 00:16.50	2.0	24.2	16.5	22.2	18.9	7.94E-05	0.3	10	2.5
10/13/2008 01:34.75	4.0	22.7	78.3	18.7	20.2	2.42E-05	0.8	10	7.5
10/13/2008 03:14.24	6.0	20.8	99.5	14.8	21.8	2.20E-05	0.9	10	9.5
10/13/2008 05:00.10	8.0	18.7	105.9	10.7	23.6	2.27E-05	1.1	10	10.5
10/13/2008 06:47.16	10.0	16.7	107.1	6.7	25.4	2.30E-05	1.0	10	10
10/13/2008 08:35.21	12.0	14.4	108.1	2.4	27.2	2.57E-05	1.2	10	11.5
10/13/2008 10:14.20	14.0	12.1	99.0	-1.9	28.8	2.97E-05	1.2	10	11.5
10/13/2008 11:53.16	16.0	10.0	99.0	-6.0	30.5	3.00E-05	1.1	10	10.5
10/13/2008 13:37.21	18.0	8.0	104.1	-10.0	32.2	2.94E-05	1.0	10	10
10/13/2008 15:32.02	20.0	6.0	114.8	-14.0	34.1	2.83E-05	1.0	10	10
10/13/2008 17:32.92	22.0	3.9	120.9	-18.1	36.1	2.95E-05	1.1	10	10.5
10/13/2008 19:48.36	24.0	1.9	135.4	-22.1	38.4	2.75E-05	1.0	10	10
10/13/2008 00:00.00	0.0	24.8	0.0	24.8	38.4				
10/13/2008 00:19.20	2.0	24.2	19.2	22.2	38.7	7.09E-05	0.3	10	3
10/13/2008 01:45.52	4.0	22.5	66.3	18.5	40.2	2.32E-05	0.9	10	8.5
10/13/2008 03:30.29	6.0	20.4	104.8	14.4	41.9	2.21E-05	1.1	10	10.5
10/13/2008 05:15.32	8.0	18.3	105.0	10.3	43.7	2.30E-05	1.1	10	10.5
10/13/2008 07:04.80	10.0	16.3	109.5	6.3	45.5	2.26E-05	1.0	10	10
10/13/2008 08:57.59	12.0	14.2	112.8	2.2	47.4	2.36E-05	1.1	10	10.5
10/13/2008 10:53.45	14.0	12.1	115.9	-1.9	49.3	2.42E-05	1.1	10	10.5
10/13/2008 12:55.82	16.0	10.0	122.4	-6.0	51.3	2.42E-05	1.1	10	10.5
10/13/2008 15:31.21	18.0	7.3	155.4	-11.2	53.9	2.59E-05	1.1	12.5	13.5
10/13/2008 17:08.64	20.0	5.8	97.4	-14.2	55.6	2.53E-05	1.0	7.5	7.5
10/13/2008 19:26.66	22.0	3.7	138.0	-18.3	57.9	2.59E-05	1.1	10	10.5
10/13/2008 21:53.00	24.0	1.6	146.3	-22.4	60.3	2.62E-05	1.1	10	10.5
10/13/2008 00:00.00	0.0	24.8	0.0	24.8	60.3				
10/13/2008 00:29.54	2.0	23.7	29.5	21.7	60.8	5.51E-05	0.6	10	5.5
10/13/2008 01:52.30	4.0	21.6	82.8	17.6	62.2	2.70E-05	1.1	10	10.5
10/13/2008 03:14.51	6.0	19.3	82.2	13.3	63.5	2.98E-05	1.2	10	11.5
10/13/2008 04:34.11	8.0	17.1	79.6	9.1	64.9	3.15E-05	1.1	10	11
10/13/2008 05:56.68	10.0	15.0	82.6	5.0	66.2	3.12E-05	1.1	10	10.5
10/13/2008 07:24.82	12.0	13.0	88.1	1.0	67.7	2.99E-05	1.0	10	10
10/13/2008 08:58.86	14.0	10.9	94.0	-3.1	69.3	3.03E-05	1.1	10	10.5
10/13/2008 10:37.86	16.0	8.8	99.0	-7.2	70.9	3.04E-05	1.1	10	10.5
10/13/2008 12:19.05	18.0	6.8	101.2	-11.2	72.6	3.08E-05	1.0	10	10
10/13/2008 14:10.55	20.0	4.7	111.5	-15.3	74.5	3.05E-05	1.1	10	10.5
10/13/2008 16:10.10	22.0	2.7	119.5	-19.3	76.5	2.97E-05	1.0	10	10
10/13/2008 18:17.55	24.0	0.6	127.5	-23.4	78.6	3.06E-05	1.1	10	10.5

